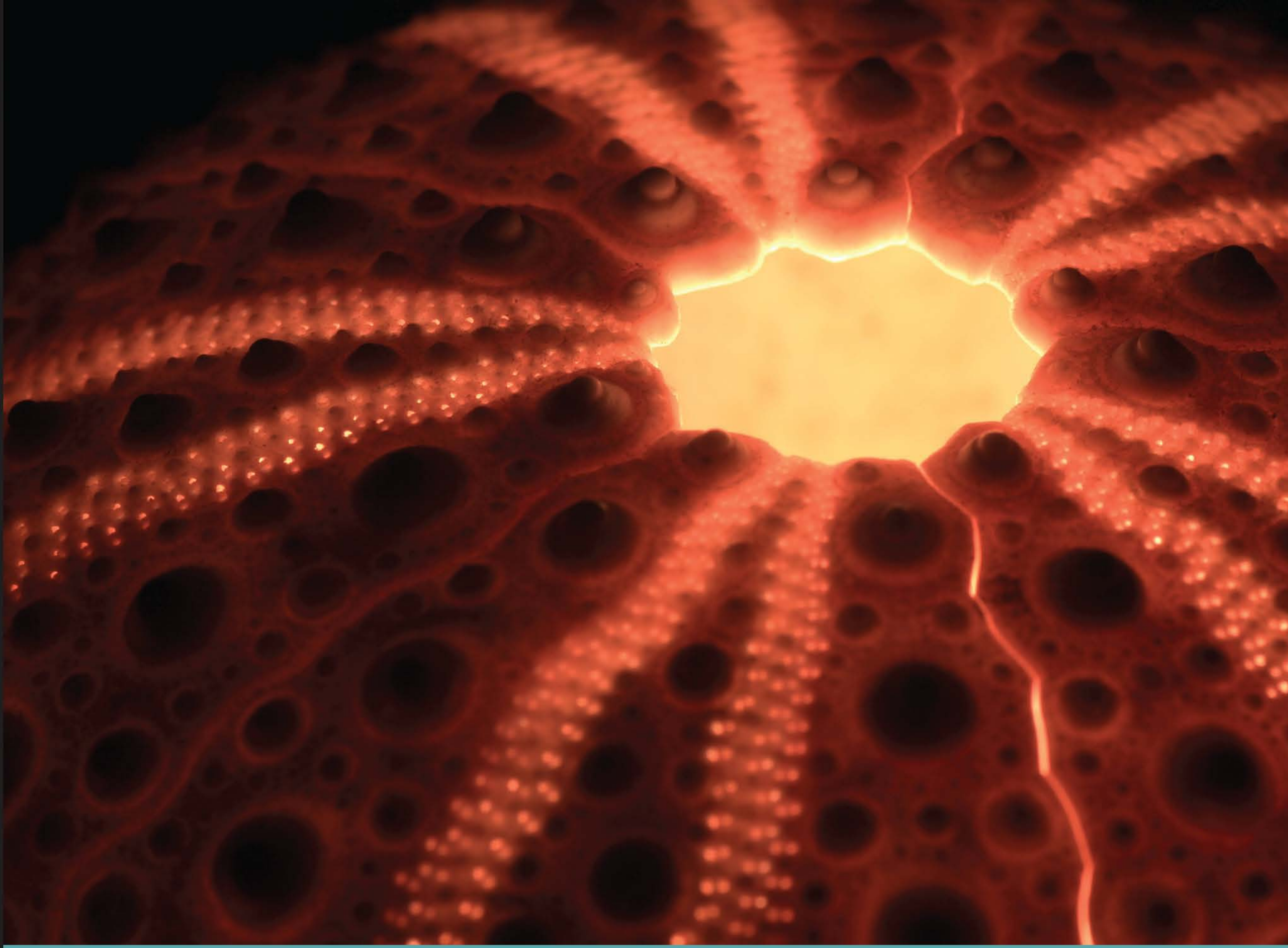


Learn by doing: less theory, more results

# WordPress Theme Development

*Third Edition*

Learn how to design and build great WordPress themes

*Beginner's Guide*

Rachel McCollin
Tessa Blakeley Silver

[PACKT] PUBLISHING open source* community experience distilled

# WordPress Theme Development Beginner's Guide

## Third Edition

Learn how to design and build great WordPress themes

**Rachel McCollin**

**Tessa Blakeley Silver**

[PACKT] PUBLISHING open source community experience distilled

BIRMINGHAM - MUMBAI

# WordPress Theme Development Beginner's Guide

## Third Edition

First published: May 2008
Second edition: November 2009
Third edition: March 2013

Production Reference: 1130313

Published by Packt Publishing Ltd.
Livery Place
35 Livery Street
Birmingham B3 2PB, UK.

ISBN 978-1-84951-422-4

`www.packtpub.com`

Cover Image by Vinayak Chittar (`vinayak.chittar@gmail.com`)

# Credits

**Authors**
Rachel McCollin
Tessa Blakeley Silver

**Reviewers**
Srikanth AD
Steve Graham

**Acquisition Editor**
Kartikey Pandey

**Lead Technical Editors**
Ankita Shashi
Unnati Shah

**Technical Editors**
Worrell Lewis
Amit Ramadas

**Project Coordinator**
Michelle Quadros

**Proofreader**
Kevin McGowan

**Indexer**
Rekha Nair

**Graphics**
Valentina D'Silva

**Production Coordinator**
Conidon Miranda

**Cover Work**
Conidon Miranda

# About the Authors

**Rachel McCollin** is a web designer and developer specializing in WordPress development. She discovered WordPress when looking for a CMS that made the transition from static HTML relatively straightforward, and hasn't looked back since.

Rachel runs Compass Design, a web design agency based in Birmingham, England, but with clients across the UK and internationally. The agency was established in 2010 and quickly began specializing in building WordPress themes and sites, with a slant towards responsive themes. The agency now has a great team of designers and developers, including some WordPress specialists.

I've learned most of what I know about WordPress from the web design community. I'd like to thank all of the WordPress developers and designers who have inspired and taught me, in particular the organizing team for WordCampUK, without whom I never would have even thought of writing about WordPress.

A number of friends and colleagues have provided support with my writing and have helped me develop my WordPress skills, as well as giving useful feedback for this book. They include Mark Wilkinson, Jon Hickman, Scott Evans, Tammie Lister, Nivi Morales, and Jonny Allbut. Rob Ashton at Emphasis has set me straight on grammar when I've needed it. Kartikey Pandey at Packt Publishing showed the confidence in my work to ask me to take on my second project for Packt Publishing—I'm grateful for this, and for his positivity and encouragement. Most importantly, my husband Pete has encouraged and supported me all along, and has spent many Saturdays entertaining our two boys, so that I could get on with the task of writing.

**Tessa Blakeley Silver**'s background is in print design and traditional illustration. She evolved over the years into web and multi-media development, where she focuses on usability and interface design. Prior to starting her consulting and development company, hyper3media (pronounced hyper-cube media) `http://hyper3media.com`, Tessa was the VP of Interactive Technologies at eHigherEducation, an online learning and technology company developing compelling multimedia simulations, interactions, and games that met online educational requirements like 508, AICC, and SCORM. She has also worked as a consultant and freelancer for J. Walter Thompson and The Diamond Trading Company (formerly known as DeBeers) and was a Design Specialist and Senior Associate for PricewaterhouseCoopers' East Region Marketing department. Tessa authors several design and web technology blogs. *Joomla! Template Design* is her first book.

# About the Reviewers

**Srikanth** is a web developer, passionate about developing and optimizing websites for better user experience, performance, and search engine visibility. He is particularly interested in adapting content management systems for developing structured and scalable websites.

Check out his portfolio at `http://srikanth.me`.

**Steve Graham** is a programmer turned web-developer with years of experience, building large-scale databases to run manufacturing control and international banking systems. His experience at the back-end of the IT industry has given him a keen understanding of the needs of the final users and it's this knowledge and expertise that he brings to his work with WordPress. As one half of the Internet Mentor team (`www.internet-mentor.co.uk`) his passion is developing themes that help to solve some of the most frustrating aspects of marketing online. Focusing on the key business objectives, his aim for all clients is to ensure that they derive measurable and sustainable direct results that drive business growth.

He spends much of his time working on theme development for niche areas. Rather than producing themes that are so generic that the only real reason they appeal to a market is the name of the theme or the type of background image, these themes are designed to provide real solutions and are created with a a knowledge and thorough understanding of the challenges their end users have to overcome.

Steve is also a passionate speaker and networking skills coach, who is able to bring a different perspective to the messages his clients are delivering in the online world. Relationship marketing is key to success in the 21st century and having an understanding of how effective both the on and off-line networks can be, is essential to the success of almost all businesses.

# Table of Contents

# Preface

WordPress has evolved significantly since the last edition of this book. It's now recognized as much more than a blogging platform, and is the Content Management System (CMS) powering 22 percent of the world's websites.

You may have used WordPress to build a site or two, perhaps using themes you've downloaded from the WordPress theme repository, bought from a theme vendor, or come with a theme framework. But if you want more control over your themes, you're going to have to build you own.

These are the cornerstones of WordPress. Without them, WordPress sites just wouldn't work. In this book, you'll learn how to take a design you create using static HTML and CSS and turn that into a great WordPress theme. You'll create the template files your theme needs and add extra functionality such as widgets and featured image support. We'll also cover how to validate and debug your theme and how to release it to other developers.

By the end of this book you'll have built a fully functional WordPress theme and you'll have the skills you need to build more, either for yourself or your clients.

## What this book covers

*Chapter 1*, *Getting Started as a WordPress Theme Designer*, gives an introduction to the world of WordPress theme building. It covers the basics of how themes work, theme coding strategies using HTML and CSS, and setting up your theme design process.

*Chapter 2*, *Preparing a Design for our WordPress Theme*, takes you through the process of creating a design for your theme, including wireframing, creating your design concepts, and designing responsively in the browser.

*Chapter 3*, *Coding it Up*, is when you'll start to build an actual theme by taking your HTML from Chapter 3 and inserting that into theme template files along with the PHP needed to make your theme work.

*Chapter 4*, *Advanced Theme Features*, covers additional features you can add to your theme. These include site settings, reading settings, permalinks, featured image support, and widgets.

*Chapter 5*, *Debugging and Validation*, shows you how to check for any bugs in your code and test that your site meets the W3C requirements for validity. We'll also look at browser testing and troubleshooting.

*Chapter 6*, *Your Theme in Action*, is all about shipping your theme to other WordPress users and developers. You'll learn how to use the WordPress theme repository to make your themes publicly available and the steps you need to take to package up a theme.

*Chapter 7*, *Tips & Tricks*, will help you take your WordPress theme development skills further. You'll learn how to add some more advanced features to your theme, including additional template files, conditional tags to display different content according to context, how to give your theme's users access to the theme customizer, and how to optimize your theme for SEO.

## Who this book is for

This book is aimed at web designers and developers with some experience of using WordPress and of coding using HTML and CSS. It assumes you are familiar with the WordPress interface and know how to manage a site and add content via that interface. You should also have experience of writing HTML and CSS. The ability to write PHP is not needed but the book does include some PHP code so you will learn something about this along the way.

## Conventions

In this book, you will find several headings appearing frequently.

To give clear instructions of how to complete a procedure or task, we use:

### Time for action – heading

1. Action 1
2. Action 2
3. Action 3

Instructions often need some extra explanation so that they make sense, so they are followed with:

## *What just happened?*

This heading explains the working of tasks or instructions that you have just completed.

You will also find some other learning aids in the book, including:

## Pop quiz – heading

These are short multiple choice questions intended to help you test your own understanding.

## Have a go hero – heading

These set practical challenges and give you ideas for experimenting with what you have learned.

You will also find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text are shown as follows: "The Loop won't work unless you close it, so below your closing `</article>` tag, add the following:".

A block of code is set as follows:

```
<?php endwhile; ?>
<?php else : ?>
       <h2 class="center">Not Found</h2>
       <p class="center">Sorry, but you are looking for
something that isn't here.</p>
       <?php get_search_form(); ?>
<?php endif; ?>
```

When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
/* Text meant only for screen readers */
.screen-text{
  position: absolute;
  left: -5000em;
}
```

**New terms** and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Click on **Publish** to save your post.".

Warnings or important notes appear in a box like this.

Tips and tricks appear like this.

## Reader feedback

Feedback from our readers is always welcome. Let us know what you think about this book—what you liked or may have disliked. Reader feedback is important for us to develop titles that you really get the most out of.

To send us general feedback, simply send an e-mail to `feedback@packtpub.com`, and mention the book title through the subject of your message.

If there is a topic that you have expertise in and you are interested in either writing or contributing to a book, see our author guide on `www.packtpub.com/authors`.

## Customer support

Now that you are the proud owner of a Packt book, we have a number of things to help you to get the most from your purchase.

### Downloading the example code

You can download the example code files for all Packt books you have purchased from your account at `http://www.packtpub.com`. If you purchased this book elsewhere, you can visit `http://www.packtpub.com/support` and register to have the files e-mailed directly to you.

### Errata

Although we have taken every care to ensure the accuracy of our content, mistakes do happen. If you find a mistake in one of our books—maybe a mistake in the text or the code—we would be grateful if you would report this to us. By doing so, you can save other readers from frustration and help us improve subsequent versions of this book. If you find any errata, please report them by visiting `http://www.packtpub.com/support`, selecting your book, clicking on the **errata submission form** link, and entering the details of your errata. Once your errata are verified, your submission will be accepted and the errata will be uploaded to our website, or added to any list of existing errata, under the Errata section of that title.

## Piracy

Piracy of copyright material on the Internet is an ongoing problem across all media. At Packt, we take the protection of our copyright and licenses very seriously. If you come across any illegal copies of our works, in any form, on the Internet, please provide us with the location address or website name immediately so that we can pursue a remedy.

Please contact us at `copyright@packtpub.com` with a link to the suspected pirated material.

We appreciate your help in protecting our authors, and our ability to bring you valuable content.

## Questions

You can contact us at `questions@packtpub.com` if you are having a problem with any aspect of the book, and we will do our best to address it.

# 1

# Getting Started as a WordPress Theme Designer

*Welcome to WordPress 3.2 Theme Design! This book is intended to take you through the process of creating sophisticated professional themes for the WordPressweb publishing platform. Since its inception, WordPress has evolved way beyond mere blogging capabilities and has many standard features that are expandable with content types, plugins, and widgets, which make it comparable to a full Content Management System (CMS).*

In this chapter and upcoming chapters, we'll walk through:

- The perks of using WordPress and basics of how a theme works
- The core technology you should understand and tools you should use to develop your theme
- The essential elements you need to consider when planning your theme design
- An overview of theme development strategies
- Starting with semantic HTML5 markup
- An overview of typography for the web
- Using a CSS layout framework
- Sizing typography with ems
- Using "object-oriented CSS" techniques for graphic treatments
- Setting up your WordPress theme design process

This chapter is mostly the background and overview of the key concepts you'll need to understand once it's "time for action" in the following chapters. Let's get started.

## Overview of WordPress perks

As you're interested in generating custom themes for WordPress, you'll be very happy to know (especially all you web standards evangelists) that WordPress really does separate content from design.

You may already know from painful experience that many content management and blog systems end up publishing their content prewrapped in (sometimes large) chunks of layout HTML, peppered with all sorts of predetermined selector `id` and `class` names.

You usually have to do a fair amount of sleuthing to figure out what these IDs and classes are so that you can create custom CSS rules for them. This is very time consuming.

The good news is, WordPress publishes only two things:

- The site's textual content—the text you enter into the post and the page administration panels
- Supplemental site content such as widgets, banners, and menus, wrapped in `div` tags, `li` tags, or `nav` tags depending on how the theme is coded

WordPress can also include classes which let you add styling based on a variety of circumstances. Most of those classes are controlled directly by the **template tags** (which we'll get into later).

That's it! You decide how everything published via WordPress is styled and displayed.

The culmination of all those styling and display decisions, along with WordPress template tags that pull your site's content into your design, are what your WordPress theme consists of.

## Does a WordPress site have to be a blog ?

The answer to this question is—no. WordPress has been capable of managing static pages and subpages since Version 1.5. Static pages are different from blog posts in that they aren't constrained by the chronology of posts. This means that you can manage a wide variety of content with pages and their subpages.

WordPress also has a great community of developers supporting it with an ever-growing library of plugins. Using plugins, you can expand the capabilities of your server-installed WordPress site to include infinite possibilities such as event calendars, image galleries, sidebar widgets, and even shopping carts. For just about anything you can think of, you can probably find a WordPress plugin to help you out.

By considering how you want to manage content via WordPress, what kind of additional plugins you might employ, and how your theme displays all that content, you can easily create a site that is completely unique and original in concept as well as design.

## Pick a theme or design of your own

It's a good idea to approach theme design from two angles:

- **Simplicity**: Sometimes it suits the client and/or the site to go as barebones as possible. In that case, it's quick and easy to use a very basic, already built theme and modify it.
- **Unique and beautiful**: Occasionally, the site's theme needs to be created from scratch so that everything displayed caters to the specific kind of content the site offers. This ensures that the site is something eye-catching, which no one else will have. This is often the best route when custom branding is a priority or you just want to show off your design skills.

There are many benefits to using or tweaking off-the-shelf themes. First, you save a lot of time getting your site up with a nice theme design. Second, you don't need to know as much about CSS, HTML, or PHP. This means that with a little web surfing, you can have your WordPress site up and running with a stylish look in no time at all.

### Drawbacks of using an off-the-shelf theme

Using an off-the-shelf theme is a great way to get started with WordPress. It means you can build your first WordPress site with a coding experience, or with experience of writing code but not of building themes. You can also work with an existing theme to create your own, either editing the theme directly or by using a child theme (which we'll come to later).

But if you need to build a bespoke site, using an off-the-shelf theme will have its drawbacks and may not save you as much time as you would hope for.

Perhaps your site needs a special third-party plugin for a specific type of content; it might not look quite right without a lot of tweaking. And while we're discussing tweaking, every CSS designer is different and sets up their theme's template files and stylesheets accordingly. While it makes perfect sense to them, it can be confusing and time consuming to work through.

Working with an off-the-shelf theme starts off feeling like the simplest approach, but as you delve deeper into the code, you may find yourself making more and more changes until you reach the point where it would have been easier to start form scratch.

Before making use of an existing theme, check if it really has everything you'll need for your project with minimal tweaking. And check its license—it should be GPL, like WordPress itself.

## What about premium themes and frameworks?

If you've done any research on the internet, you will have come across a host of WordPress frameworks and premium themes (which can often be used as frameworks).

## What exactly is a premium theme

First off, a premium theme is simply a nicely (sometimes an amazingly) designed WordPress theme that often also has many, really cool features. The author may have taken the time to include a host of JavaScript enhancements, like a rotating header slideshow, "Ajaxified" comment forms and endless "widgetized" areas, as well as additional custom areas in the administration panel where you can easily manage and update all the custom enhancements.

Secondly (and more importantly), a premium theme is one that the developer wants you to pay for because they took the time to code up that design and include all those nice enhancements. Hence the "premium" on the theme.

**Be careful with customizing premium themes**

While premium theme designers often offer many ways to easily customize their theme (a perk of choosing their theme over others), the images, CSS, and JavaScripts of the theme are not required to fall under the WordPress GPL license (we'll learn all about this in *Chapter 6,Your Theme in Action*). The authors may require you to leave their name, link, or other copyright/attribution information somewhere within the theme. Essentially, read the seller's license information to understand what you have the right to change and use common sense. Don't steal other people's design work to pass off as your own. Really, it's just not nice.

## What is a framework theme

Frameworks are in many ways similar to premium themes, but the focus of the framework is not so much to be a "theme" all by itself but to be more of a "starter kit" that strips the need for understanding the WordPress'Theme API out of the design process and usually also adds great additional features and functionality. Most frameworks work on the assumption that you'll create a *child theme* of your own for the look and feel you want. Because frameworks do offer designers a "quick start" as well as extra features, similar to premium themes, some frameworks require purchasing or licensing for each site you use them on. There are also some very good open source frameworks that are free to download and use.

Frameworks are particularly useful to designers who are short on time, very good with CSS, and don't want to deal with the learning curve of having to understand the WordPress template page hierarchy, template tags, and plugin API hooks.

**What are child themes?**

We'll learn later in *Chapter 4*, *Advanced Theme Features,* of this book that you can actually create a child theme off *any* theme, be it a framework theme, a premium theme, or your best friend's WordPress theme experiment.

The whole point of this book is to introduce you to these concepts and introduce you to the basics of WordPress theme features so that you can create elegant comprehensive themes from scratch. You can then see how getting a little creative will enable you to develop any kind of site you can imagine with WordPress.

You'll also be able to better take advantage of a theme framework, as you'll understand what the framework is accomplishing for you "under the hood", and you would also be able to better customize the framework if you need to.

For many frameworks, there is still some amount of learning curve to getting up and running with them. But less of it will deal directly with futzing with PHP code to get WordPress to do what you want.

We'd encourage you to take a look at development with a framework and compare it to development from scratch. Having the skills this book provides you with under your belt will only help, even if you choose to go with a framework to save time.

**Popular theme frameworks to choose from**

More and more frameworks show up every day, and each framework tries to address and handle slightly different needs. As a bonus, some frameworks add options into the WordPress administration panel that allow the end user to add and remove features to/from the child theme they've selected.

The right framework for you will depend on your development style and the needs of your site, but some popular frameworks are listed next.

Themes that offer a lot of child themes which you can customize yourself:

- Thematic (`http://themeshaper.com/thematic/`)
- Hybrid (`http://themehybrid.com/`)

Premium frameworks with additional features are as follows:

- Carrington (`http://carringtontheme.com/`)
- Thesis (`http://diythemes.com/`)

These frameworks may appear complex at first, but offer a range of rich features for developing themes and, especially if you understand the essentials of creating WordPress themes (as you will after reading this book), can really aid you in speeding up your theme development.

Again, there are many theme frameworks available. A quick Google search for "WordPress Theme Frameworks" will turn up quite a range to choose from.

## Core technology you should understand

This book is geared towards visual designers (with no server-side scripting or programming experience) who are used to working with the common industry standard tools such as Photoshop and Dreamweaver or other popular graphic, HTML, and text editors.

Regardless of your web development skillset or level, you'll be walked through clear, step-by-step instructions. But there are many web development skills and WordPress know-how that you'll need to be familiar with to gain maximum benefit from this book.

### WordPress

Most importantly, you should be at least somewhat familiar with the most current stable version of WordPress. You should understand how to add content to the WordPress system and how its posts, categories, and pages work. If available in the theme you're using, you should be aware of how to set up a custom menu (the WordPress default Twenty Ten theme will allow you to play with custom menus). Understanding the basics of installing and using plugins will also be helpful (though we will cover that to some extent in the later chapters of the book as well).

Even if you'll be working with a more technical WordPress administrator, you should have an overview of what the WordPress site that you're designing entails, and what (if any) additional plugins or widgets will be needed for the project. If your site does require additional plugins and widgets, you'll want to have them handy and/or installed in your WordPress development installation (or **sandbox**—a place to test and play without messing up a live site). This will ensure that your design will cover all the various types of content that the site intends to provide. We'll cover the basics of setting up your sandbox in just a minute in this chapter.

**What version of WordPress does this book use?**

This book focuses on WordPress 3.4.2. While this book's case study is developed using Version 3.4.2, any newer version of WordPress should have the same core capabilities, meaning you can develop themes for it using these techniques. Bug fixes and new features for each new version of WordPress are documented at `http://wordpress.org`. If you are new to WordPress, then it's worth reading *WordPress 3 Complete*, *April Hodge Silver*, *Packt Publishing*.

## CSS

We'll be giving detailed explanations of the CSS rules and properties used in this book, especially the CSS3 rules and how to use progressive enhancement to support browsers that don't support CSS3. We'll also let you in on the "how and why" behind creating our style sheets. You should know a bit about what CSS is, and the basics of setting up a cascading stylesheet and including it within an HTML page. You'll find that the more comfortable you are with CSS markup and how to use it effectively with HTML, the better will be your WordPress theme-creating experience.

## HTML

You don't need to have every markup tag in the XHTML or HTML5 standard memorized. If you really want, you can still switch to the Design view in your HTML editor to drop in those markup tags that you keep forgetting. However, the more HTML and HTML5 basics you understand, the more comfortable you'll be working in the Code view of your HTML editor or with a plaintext editor. The more you work directly with the markup, the quicker you'll be able to create well-built themes that are quick loading, semantic, expand easily to accommodate new features, and are search engine friendly.

## PHP

You definitely don't have to be a PHP programmer to get through this book, but be aware that WordPress uses liberal doses of PHP to work its magic. A lot of this PHP code will be directly visible in your theme's various template files. PHP code is needed to make your theme work with your WordPress installation, as well as make individual template files work with your theme.

If you at least understand how basic PHP syntax is structured, you'll be much less likely to make mistakes while retyping or copying and pasting code snippets of PHP and WordPress template tags into your theme's template files. You'll be able to more easily recognize the difference between your template files, XHTML, and PHP snippets, so that you don't accidentally delete or overwrite anything crucial.

If you get more comfortable with PHP, you'll have the ability to change variables and call new functions or even create new functions on your own, again infinitely expanding the possibilities of your WordPress site.

## Other helpful technologies

If your project will be incorporating any other special technologies such as JavaScript, AJAX, or Flash content, the more you know and understand how these scripting languages and technologies work, the better it is for your theme-making experience (again `http://www.w3schools.com/` is a great place to start).

[ The more web technologies you have a general understanding of, the more likely you'll be able to intuitively make a more flexible theme that will be able to handle anything you may need to incorporate into your site in the future. You don't need to be an expert in all of them to build a WordPress theme though. ]

## Tools of the trade

Skills are one thing, but the better your tools are, and the more command you have over those tools, the better your skills can be put to use. Just ask any carpenter, golfer, or app programmer about the sheer importance of their favorite "tools of the trade", you're likely to get quite an earful.

In order to get started in the next chapter, you'll need the following tools to help you out:

### HTML editor

You'll need a good HTML editor. Text editors which a lot of web developers trust include:

- Dreamweaver (`http://www.adobe.com/products/dreamweaver/`)
- Coda for Mac (`http://www.panic.com/coda/`)
- TextWrangler (`http://www.barebones. com/products/textwrangler/`)
- HTML-kit (`http://www.htmlkit.com/`)

An HTML or text editor that includes the following features will work just great:

- **View line numbers**: Can help you find specific lines in a theme file, to help you identify any problems
- **View syntax colors**: Helps you identify where you're working in PHP, HTML, CSS, and where the code is working
- **View nonprinting characters**: Helps you see hard returns, spaces, tabs, and other special characters that you may or may not want in your code
- **Text wrapping**: Lets you wrap text, so you don't have to scroll horizontally to edit a long line of code

- **Load files with FTP or local directories**: Lets you work on remote files (or upload local files to a remote server) from your code editor

**Free open source HTML editors**

Free, open source text editors include:

- Nvu (`http://www.net2.com/nvu/`)
- KompoZer (`http://kompozer.net/`)
- Bluefish (`http://bluefish.openoffice.nl`)

## Graphics editor

The next piece of software you'll need is a graphics editor. While you can find plenty of CSS-only WordPress themes out there (and CSS3 gives you much more opportunity to create graphic effects with code), chances are that you'll want to expand on your design a little more and add nice visual enhancements.

The most popular graphics programs are Photoshop (or its lighter cousin, Photoshop Elements) and Fireworks, both from Adobe (`http://www.adobe.com/products/`).

If you're looking for a free, open source graphics program, you could try one of the following:

- GIMP (`http://gimp.org/)`
- Inkscape (`http://inkscape.org`).

## Web browser

Finally, you'll need a web browser. Many developers use Firefox, available at `http://mozilla.com/firefox/`. It includes some advanced developer tools which are useful for debugging and delving into your code. If you're getting started though, you might find Google Chrome easier to use at first. It's fast and standards-compliant and available at `https://www.google.com/intl/en/chrome/browser/`.

You'll also need to use other web browsers to test your theme on, as it will need to be compatible with the latest versions of the main browsers. Browsers you should be testing on include:

- Firefox
- Chrome
- Safari for Mac
- Opera

- Internet Explorer (Version 7 or 8 upwards)

It's unlikely that you'll have access to all of these browsers on your machine—Internet Explorer only runs on Windows and Safari only runs on a Mac, for example. To test them, you can use the AdobeBrowser lab tool, available at `http://browserlab.adobe.com`.

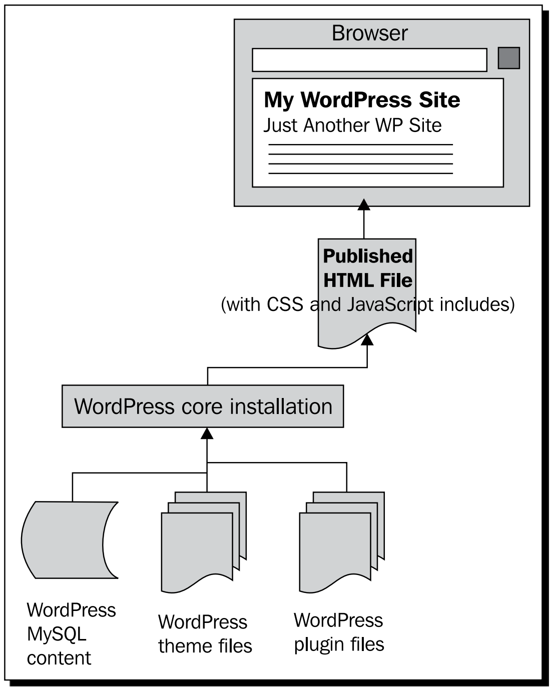
## Basics of a WordPress theme

According to the WordPress codex a WordPress theme is:

*A collection of files that work together to produce a graphical interface with an underlying unifying design for a weblog.*

Themes are comprised of a collection of template files and web collateral such as images, CSS stylesheets, and JavaScript.

The next diagram illustrates how the WordPress theme works with the WordPress system: core installation, theme files, plugin files, and MySQL database, to serve up a complete HTML page to the browser:



We'll go over the specifics and code examples of each part of a WordPress theme in detail in *Chapter 3, Coding it Up,* but here are the basics to get you started:

## The template hierarchy

The most important part of a WordPress theme to start realizing now is the **template hierarchy**. A WordPress theme is comprised of many file types including template pages. **Template pages** have a *structure* or *hierarchy* to them. That means, if one template file is not present, then the WordPress system will call up the next level template file. This allows developers to create themes that are fantastically detailed, which take full advantage of all of the hierarchy's available template files, and yet make the setup unbelievably simple. It's also possible to have a fully functioning WordPress theme that consists of no more than an *index.php* file and a stylesheet.

> You can see the template hierarchy in detail at `http://codex.wordpress.org/Template_Hierarchy`.

## The Loop

Within most template pages in the hierarchy (not necessarily all of them), we'll be adding a piece of code called "**the Loop**". The Loop is an essential part of your WordPress theme. It displays your posts in chronological order and lets you define custom display properties with various WordPress template tags wrapped in HTML markup.

## Template tags and API hooks

Looking within a template page's "Loop", you'll find some interesting bits of code wrapped in PHP tags. The code isn't pure PHP, most of them are WordPress-specific tags and functions such as template tags, which only work within a WordPress system. Most tags and functions can have various parameters passed through them.

Not all WordPress tags and functions go inside the Loop. If you were to poke around the `header.php` file included in the default Twenty Ten theme, you'll find several tags that work outside the Loop. Specifically in the `header.php` template page (as well as the `footer.php` and `sidebar.php` template pages), you'll also find several WordPress-specific functions that are part of the **Plugin API** and **Script API**.

Again, no need to worry about the specifics of these now. We'll be covering all these terms in detail with examples in *Chapter 3*, *Coding it Up,* plus the *Appendix* will have a complete Quick Reference Cheat Sheet for you to quickly look up all of these specifics.

## Our development strategies

The approach of this book is going to take you through the *unique and beautiful* route (or unique and awesome, whatever your design aesthetics call for) with the idea that once you know how to create a theme from scratch, you'll be better at understanding what to look for in other WordPress themes, premium themes, and frameworks. You'll then be able to assess when it really is better or easier to use an already built theme versus building up something of your own from scratch.

*Chapter 2*, *Preparing a Design for Our WordPress Theme* will cover creating an HTML5-and CSS3-based, design "mock-up" that will work across all browsers as well as be responsive and mobile ready. In *Chapter 3*, *Coding it Up,* we'll take that working HTML/CSS code and break it down into template pages injected with template tags and essentially "WordPress-ize" it into a fully functional theme. In Chapter 4, *Advanced Theme Features* and beyond, we'll learn how to add some great advanced features as well as properly validate and package our theme to share it with the world. Don't let the "Beginner" series this title is under fool you. By the end of this book you'll probably be ready to create your own polished, professional themes for clients or even premium themes.

## Fonts and typefaces

The **Cufon** JavaScript technique, but for now, let's get some basic typography under our belts.

When envisioning the theme's typography, think about the type of information the site will (or might) hold, and what's expected along with what's in vogue right now. Try to think in terms of headers, secondary fonts, block-quotes, specialty text (for code), and paragraph page text.

You can use any fonts you want as long as you think there's a really good chance that others will have the same font on their computers. Here is a list of the basic fonts that work well on the screen:

- Fonts designed for viewing on screen:
  - Georgia (serif)
  - Verdana (sans serif)
- Fonts available on most Macs and/or PCs:
  - Arial
  - Helvetica
  - Times New Roman

- Fonts commonly used for code:
    - Monaco
    - Consolas

## A CSS strategy – font sizing with ems

It is possible to set text in one of five different units – keywords, points, pixels, percentages, and ems. These work in the following way:

- **Keywords** include `xx-small`, `x-small`, `small`, `medium`, `large`, `x-large`, and `xx-large`. The `medium` option is the same as the default font size set by the browser, and the others are set in relation to this, for example, the `x-small` keyword equates to 9 pixels on desktop browsers in their default setting. Keywords are limited, with only seven choices, and they are imprecise as it's impossible to know if the user has changed the browser's default size or if different browsers are using a different default size. It's therefore not a good idea to use keywords.
- **Points** will be familiar to you if you use a word processing or desktop publishing program, and they are related to the size of text on the printed page. Their only real application in websites is for a separate print stylesheet—they generally aren't used in screen stylesheets.
- **Pixels** are probably the most commonly used, and relate to the pixels on the screen. They provide fine control over exact dimensions but because the font size for each element (for example, headings) has to be set separately, you have to edit each one if you want to make the font sizes larger or smaller across the site.
- **Percentages** change the text size in relation to the size set by the browser (a bit like keywords), but give much finer control. You can also use them to set the size of text in an element relative to the size it would normally inherit from elements higher in the html structure. For example, if you set the `<body>` element to have a font size of 16 pixels, and the `<h1>` tag to have a font size of 120 percent, its size will be 120 percent of 16 pixels, which is 19.2 pixels.
- **Ems** are also relative, and work in exactly the same way as percentages, so 1.2em is the equivalent of 120 percent. Some developers find that the smaller numbers are easier to work with. They're also useful when styling layout relative to text size. For example, in the Carborelli's call to action box, the padding is in ems, so it would be based on the size of the text in that element. If we used percentages for that padding, the browser would use a percentage of the width or height of the call to action's containing element instead.

Because ems and percentages are relative values, they have two major advantages over pixels:

- If you set the site's base text size at 14 pixels, for example, using the `<body>` element, and set other elements with different font sizes using ems, then at a later date decide to make the text size larger, all you need to do is change the size for the `<body>` element and this will have a knock-on effect on all other elements or selectors that have been set in ems or pixels. This also means that you can adjust the text size for all parts of the site on mobile devices using one change – to the font size of the `<body>` element.
- As ems are relative, they adjust when the user changes their text size settings in their browser, for example if he or she is visually impaired or short-sighted. Pixel values won't do this so well. This makes ems much better for accessibility.

You could use either, but ems are more commonly used as they're simpler to work with.

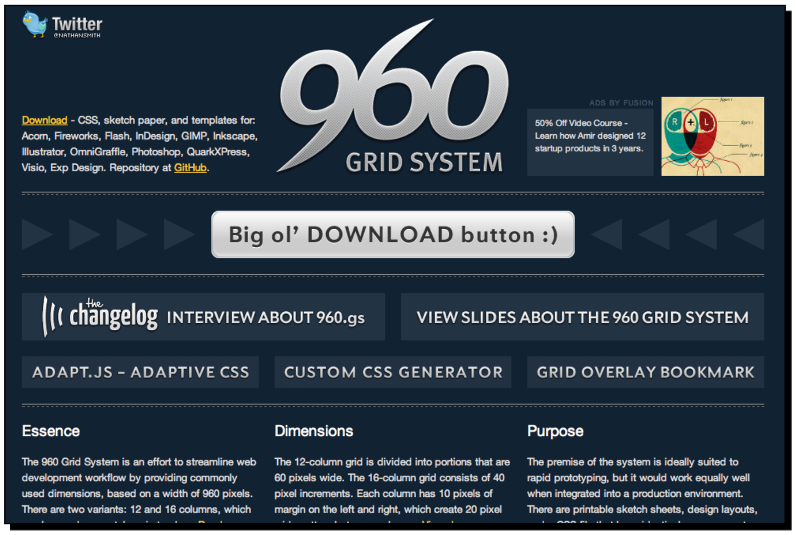
## A CSS strategy – working with a CSS framework

As we're about to learn, there are lots of CSS frameworks to choose from. Regardless of which one you end up with, this is where a lot of time-saving "magic" can start to happen for you and your design process. By using a CSS framework, you can quickly set up layout positioning for your mock-up. Let's take a quick tour of the top two CSS framework systems available.

### 960

960 grid is probably the most popular CSS framework out there because of the fact that 960 can be divided by a lot of numbers, giving you a great deal of flexibility for your layout.

You can find it at `http://960.gs/`.



Download - CSS, sketch paper, and templates for: Acorn, Fireworks, Flash, InDesign, GIMP, Inkscape, Illustrator, OmniGraffle, Photoshop, QuarkXPress, Visio, Exp Design. Repository at GitHub.

50% Off Video Course - Learn how Amir designed 12 startup products in 3 years.

Essence

The 960 Grid System is an effort to streamline web development workflow by providing commonly used dimensions, based on a width of 960 pixels. There are two variants: 12 and 16 columns, which

Dimensions

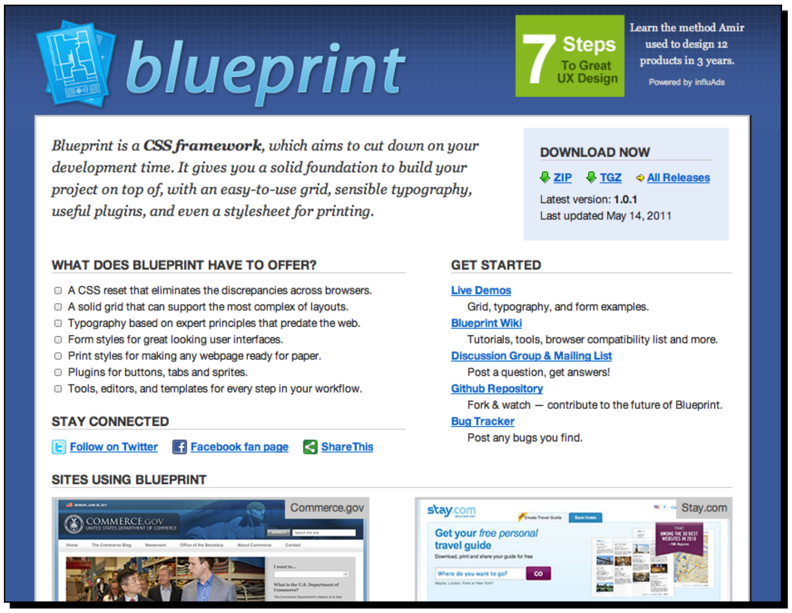
The 12-column grid is divided into portions that are 60 pixels wide. The 16-column grid consists of 40 pixel increments. Each column has 10 pixels of margin on the left and right, which create 20 pixel

Purpose

The premise of the system is ideally suited to rapid prototyping, but it would work equally well when integrated into a production environment. There are printable sketch sheets, design layouts,

## Blueprint

Blueprint includes typography, form starters, and other plugins to choose from. It's based on a grid of 24 columns that are 30-pixel wide, with a 10-pixel margin, and the default is 950-pixels wide. You can find out all about it at: `http://www.blueprintcss.org`.



blueprint
7 Steps To Great UX Design
Learn the method Amir used to design 12 products in 3 years.
Powered by influAds

*Blueprint is a **CSS framework**, which aims to cut down on your development time. It gives you a solid foundation to build your project on top of, with an easy-to-use grid, sensible typography, useful plugins, and even a stylesheet for printing.*

DOWNLOAD NOW

ZIP TGZ All Releases

Latest version: **1.0.1**

Last updated May 14, 2011

WHAT DOES BLUEPRINT HAVE TO OFFER?

- A CSS reset that eliminates the discrepancies across browsers.
- A solid grid that can support the most complex of layouts.
- Typography based on expert principles that predate the web.
- Form styles for great looking user interfaces.
- Print styles for making any webpage ready for paper.
- Plugins for buttons, tabs and sprites.
- Tools, editors, and templates for every step in your workflow.

GET STARTED

Live Demos
Grid, typography, and form examples.

Blueprint Wiki
Tutorials, tools, browser compatibility list and more.

Discussion Group & Mailing List
Post a question, get answers!

Github Repository
Fork & watch — contribute to the future of Blueprint.

Bug Tracker
Post any bugs you find.

STAY CONNECTED

Follow on Twitter Facebook fan page ShareThis

SITES USING BLUEPRINT

Commerce.gov Stay.com

## Layoutcore

The tutorial in this book usesthe layout core framework developed by me.

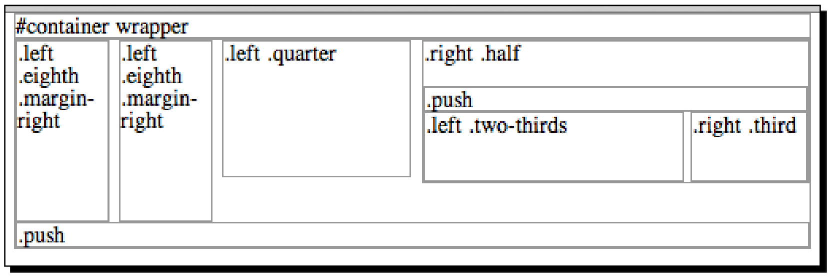
Layoutcore is very simple. It uses object-oriented CSS, meaning that, instead of assigning styling to specific elements in your markup, you add classes defined in layoutcore which are designed to style whichever elements they're applied to. For example, these will control floats, widths, backgrounds, and fonts.

> To learn more about object-oriented CSS, see `http://coding.smashingmagazine.com/2011/12/12/an-introduction-to-object-oriented-css-oocss/`.

Here's an example of a layout using layoutcore:

```
...
<div id="container">
<div class="left eighth margin-right">
</div>
<div class="left eighth margin-right">
</div>
<div class="left quarter">
</div>

<div class="right half">
<div class="push"></div>
<div class="right third">
</div>
<div class="left two-thirds">
</div>
</div>
<div class="push"></div>
</div><!--//#container-->
…
```

This markup would create a layout similar to the following screenshot:



A quick overview of the layoutcore CSS is as follows:

- It has several vertical lists and horizontal "grid list" options that can be applied to `ul` and `ol` lists, which turn them into horizontal lists that wrap from 2 up, to 8 up.
- It also makes the suckerfish method for drop-down menus a breeze (we'll break down the CSS for this in detail in *Chapter 4*, *Advanced Theme Features*). You simply assign the `.sfTab`class for horizontal menus or `.sfList` for vertical menus. Using the vertical `.sfList` class, you can also assign the classes `.dropRight` or `.dropLeft` to determine on which side the drop-down menus appear or just assign `.currentLevel` if you want to have a vertical drop-down menu that automatically shows what section you're active in.

- It also accommodates some very basic `@media` queries that appropriately size the `#container` and `footer` element's width property and turn off the `.left` and `.right` float properties to get the layout's basic responsiveness set up and ready to roll.
- As with any other framework you use (or just plain stylesheet you create), the `layout-core.css` file uses the Eric-Meyers reset so that the layout and style rules you set up look as consistent as possible across all browsers.
- Last, for good measure, it accommodates some very common mime-type assignment images and social networking icons.

**More CSS frameworks**

There are tons of great frameworks out there, each one taking in different approaches or end solutions into account.

You may find one that works better for you than the ones mentioned here. For some examples, see `http://speckyboy.com/2011/11/17/15-responsive-css-frameworks-worth-considering/`

To find out more about it and download a 10k minified version, visit my CSS site `http://csscheatsheet.net/layout-core` (you get the unminified version with this chapter's code pack so you can look through it in detail).

**Multiple class styles assigned to the same HTML object tag?**

Hopefully, this is not a totally new CSS concept for you, but as you can see by the description of CSS frameworks and my quick `layout-core.css` examples given previously, you can have as many classes as you want assigned to an HTML object tag. Simply separate the class names with a blank space and they'll affect your HTML object in the order that you assign them. Keep in mind that the rules of cascading apply, so if your second CSS rule has properties in it that match the first, the first rule properties will be overwritten by the second. We'll delve even further into using this technique later on in this chapter and there are more suggestions for this trick in *Chapter 7*, *Tips and Tricks*.

## Setting up your WordPress sandbox

If you have a version of WordPress running that you can play with, great. If you don't, it's a good idea to have a locally running installation. Installing and running a small web server on your local machine or laptop has become very easy with the release of **WAMP** (**Windows, Apache, MySQL, and PHP**) and **MAMP** (**Mac, Apache, MySQL, and PHP**). A local server offers you several conveniences compared to working with WordPress installed on a hosting provider.

## Using WAMP

WAMP stands for Windows, Apache, MySQL, and PHP, and it lets you run a local web server on a Windows machine. To download it, go to `http://www.wampserver.com`.

The installation wizard includes instructions which will help you set up WAMP correctly for your system—make sure you follow them!

## Using MAMP

Similar to WAMP, MAMP stands for (you guessed it!) Mac, Apache, MySQL, and PHP. Mac users will head on over to `http://mamp.info` and download the free version of the server.

Once you download and unpack the ZIP and launch the `.dmg` file, it's a pretty straightforward process for copying the `MAMP` folder to your `Applications` folder and launching the app.

Again, like WAMP, MAMP from the start page offers you an easy way to launch phpMyAdmin. **phpMyAdmin** will allow you to easily create a database and a database user account, which is required for installing WordPress.

## Choosing a hosting provider

If you want to work remotely, or to publish your site to the web, you'll need hosting. There are hundreds of hosting providers out there so finding the right one can be tricky – the important thing is that they provide support for WordPress.

Your hosting will need to include Apache, MySQL, and PHP in order for WordPress to operate. It's also a big help if you have access to CPanel and phpMyAdmin.

Many hosting providers offer Fantastico or Softaculous for one-click installs, which can speed up the installation process and be useful for WordPress beginners. But be sure that this gives you the latest version of WordPress—if not, upgrade immediately after installing. It's important to use the latest version of WordPress to avoid any security problems. If you want maximum control over your WordPress installation, it's best to install it yourself.

[ For details of WordPress hosting requirements, see `http://wordpress.org/hosting/` ]

## Rolling out WordPress

You'll be pleased to know that WordPress is easy to install. Once you have a MySQL database set up with a username and password, you simply unzip the latest WordPress version and copy it to your site's `root` folder and then run the installation by navigating to `http://localhost/wp-admin/install.php`, or for a remote installation, to `http://example.com/wp-admin/install.php`, where `example.com` is your domain name.

**WordPress in 5 minutes (or less)**

For a complete overview of installing WordPress, take a look at the WordPress 5-minute installation guide from the Codex: `http://codex.wordpress.org/Installing_WordPressAgain`. Also, the book we mentioned earlier, *WordPress 3.0 Complete*, *April Hodge Silver*,*Packt Publishing* will walk you through a WordPress installation, step by step.

## Summary

To get going on your WordPress theme design, you'll want to understand how the WordPress blog system works, and have your head wrapped around the basics of the WordPress project you're ready to embark on. If you'll be working with a more technical WordPress administrator and/or PHP developer, make sure your development installation or sandbox will have the same WordPress plugins that the final site needs to have. You'll want to have all the recommended tools installed and ready to use, as well as brush up on those web skills, especially XHTML and CSS. Get ready to embark on designing a great theme for one of the most popular, open source blog systems available for the Web today.

# 2
# Preparing a Design for Our WordPress Theme

*The purpose of this chapter is to help you create a working HTML5- and CSS3-based template mockup, with an eye towards having it end up being a WordPress theme. This theme will be* **responsive***, meaning it will display content optimally on mobile devices as well as desktop browsers. All the while, we'll be staying compliant with W3C standards and following good usability practices. Our hope for this chapter is that even you design pros may discover interesting tidbits that will help you in your WordPress theme design creation.*

*WordPress theme design is essentially web design so, throughout the chapter, we'll be focusing a bit more on thinking about semantics, standards, and usability first. We'll then focus on what we want to design (keeping in mind it will end up in WordPress) using the most simple, straightforward means possible: pencil and paper, HTML, and CSS, and last, our graphic editor/drawing programs. This approach will give us a more flexible, yet solid HTML and CSS structure.*

*While you might find this approach a little strange at first, it's by no means set in stone as the only right way to design a theme. Simply read through the chapter and, even if you already have a polished, Photoshop-designed mockup, go ahead and try to set up your HTML and CSS using the steps laid out in this chapter. You may find it helps your process.*

In this chapter, we're going to take a look at implementing the following strategies we learned in *Chapter 1*, *Getting Started as a WordPress Theme Designer* by:

- Building out our layout based on semantic content
- Adding in our content, fonts, and sizing
- Setting up our layout using our CSS layout framework
- Adding in our graphic elements using CSS3 and our object-oriented approach to CSS (which we'll explain when we come to it)

By the end of this chapter, we'll have a working HTML5- and CSS3-based template "comp" or "mockup" of our WordPress theme design, ready to be broken down, coded up, and assembled into a fully functional WordPress theme.

**Already got a design? Not a designer at all?**

That's fine! This chapter covers basic, web design best practices, with an eye towards ending up with a unique and custom WordPress theme. It contains time honored and tested methods for approaching compliant, accessible, and responsive HTML and CSS creation. If you're a total HTML and CSS design wizard, you can skim this chapter for any new tips and tricks that might be of use to you and then move on to *Chapter 3*, *Coding it Up*. If you're not a designer at all and you just need to convert an existing HTML/CSS template into WordPress, we'd still recommend you skim this chapter, as it may help you better understand some of the HTML markup and CSS in your template. You can then move on to *Chapter 3*, *Coding it Up* to learn how to code working HTML and CSS templates and mockups into WordPress.

## Getting ready to design

**Design Comp** is an abbreviation used in design and print. It refers to a preliminary design or sketch as "comp", as in "comprehensive artwork" or "composite". It is also known as "mockup", "sample artwork", or "dummy artwork". We'll be creating one of these in this chapter to then use to create our WordPress theme in *Chapter 4*, *Advanced Theme Features*.

You may already have a design process similar to the one detailed next; if so, just skim the next section and skip down to the next main heading.

## Designing in the browser

Historically, most web designers have used Photoshop or another graphics program to create a static design for a site and then either develop the site themselves or pass this to a developer to create the code.

This approach reflected the fact that web design had its background in print design, which makes good use of this sort of process. It gives you a nice static mockup that you can give to a client for approval.

But this approach isn't so effective anymore. Now that our sites need to look good on a variety of devices, a single static design won't apply to every screen size. Does this mean we have to prepare a full design for every conceivable screen size?

Of course not. The approach we're moving towards is replacing designing in a graphics program with designing in the browser.

The way you approach this will depend on your own preferences and the needs of your project, but a process which works for a lot of designers is:

1. Generate design concepts and ideas for the site using a mood board or similar technique, so you know what styling and graphics you'll be using.
2. Prepare some wireframes for the site's layout at different screen widths. These can be a rough sketch on paper or use a wireframing tool.
3. Create a static mockup of the design in the browser, using the layouts defined in your wireframes and the graphical treatments in your mood board. This gives you a working prototype of your design which is much more effective for demonstrating to clients how their site will actually work for users on different devices.
4. Turn that static design into a WordPress theme, using the HTML and CSS you've used for your mockup and adding WordPress goodness to it.

This is the process we'll be using in this chapter, which will take us up to step 3 of the process. In *Chapter 4*, *Advanced Theme Features,* we'll move on to the final step, turning our mockup into a WordPress theme.

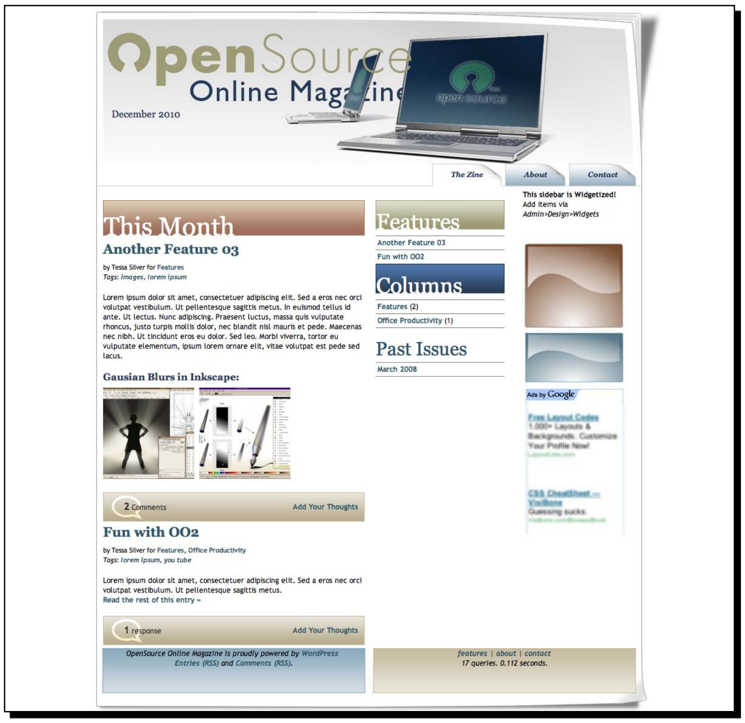
Of course, you may already have a fully worked-up static design which you've been given by a designer, which doesn't mean you can't follow this chapter. Just skip to the *Creating your design – from the sketch to the screen* section and instead of using wireframes and a mood board to decide how to code your design, use the design you've been given.

## Starting our design

As mentioned, for the third edition of this title, we're going to stick with the magazine site. The difference is, it's been almost four years since the original design was created (eons in internet years) and it's time for an update that reflects today's newest web standards, design aesthetics, and practices.

But the design of the magazine needs a "post 2010" update. This time around, we need something a little less "Martha Stewart" and a little more "Wired".

For those of you who haven't seen the previous version, here's a look at what the previous edition's design looked like:



Another Feature 03

by Tessa Silver for Features
Tags: images, lorem ipsum

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Ut lectus. Nunc adipiscing. Praesent luctus, massa quis vulputate rhoncus, justo turpis mollis dolor, nec blandit nisl mauris et pede. Maecenas nec nibh. Ut tincidunt eros eu dolor. Sed leo. Morbi viverra, tortor eu vulputate elementum, ipsum lorem ornare elit, vitae volutpat est pede sed lacus.

Gausian Blurs in Inkscape:

2 Comments Add Your Thoughts

Fun with OO2

by Tessa Silver for Features, Office Productivity
Tags: lorem ipsum, you tube

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus.
Read the rest of this entry »

1 response Add Your Thoughts

Another Feature 03
Fun with OO2

Features (2)
Office Productivity (1)

March 2008

This sidebar is Widgetized!
Add items via
Admin>Design>Widgets

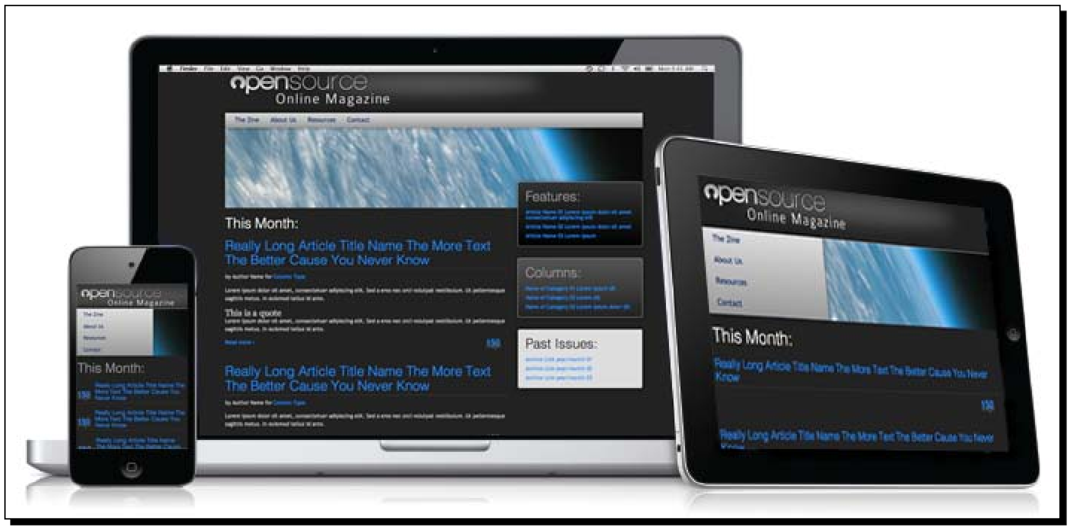
Free Layout Codes
1,000+ Layouts & Backgrounds. Customize Your Profile Now!

CSS CheatSheet — VisiBone
Guessing sucks.

OpenSource Online Magazine is proudly powered by WordPress
Entries (RSS) and Comments (RSS).

features | about | contact
17 queries. 0.112 seconds.

And here's what our final, responsive HTML5- and CSS3-based design will look like:



## Planning and sketching our design

The first step is to plan our design and layout.

Before doing this, you'll need to think about the requirements of the site and of your client, if you have one. If you're designing a theme for release to other users, consider how they're likely to use it.

Imagine you are someone who has come to the site for the information it contains. What do you think the user will actually do? What kind of goals might they have for coming to your site? How hard or easy will it be for them to attain those goals? How hard or easy do you want it to be for them to attain those goals?

Are you adhering to standard usability conventions? Web standards and conventions are more than what's laid out in a lengthy W3C document. A lot of them are just adhering to what we, as web users, expect. For example, if text has underlines in it and/or is a different color, we expect that text to be a link. If something looks like a button, we expect clicking on it to do something, like process the comment form we just filled out or add an item to our cart.

It's perfectly fine to get creative and break away from the norm and not use all the web conventions. But be sure to let your viewers know up front what to expect, especially as most of us are simply expecting a web page to act like a web page.

## Time for action – planning our design

If you don't already have a full-blown design, you'll need to create some graphics as a starting point and some wireframes too. You can do this as follows:

1. Using your preferred graphics program, create some design elements and concepts, such as buttons, color schemes, logos, backgrounds, or whatever else your site needs. Our design elements are all included in the design that we've seen in the previous figure.
2. Either on paper or by using a wireframing tool, create some wireframes for the screen widths you're targeting with your responsive design. We'll do ours on paper for now. You may need to prepare wireframes for more than one area of the site, for example for sections of the site that have a different sidebar or no sidebar at all.
3. Now revisit the considerations for your design and your site's users. Make any adjustments to your wireframes that you need to.

### *What just happened?*

You've created your design. It may not be what you're used to, but you'll find it will include everything you need to create your mockup in the browser. Obviously we've just skimmed this process—depending on the needs of your site, this may have taken you a very long time.

**Clean it up?**

This might seem to defeat the purpose of rapid design—comping, but if you're working within a large design team, you may need to take an hour or so to clean your sketch up into a nicer line drawing. This may help other developers on your team to understand your WordPress theme idea more clearly.

## Creating your design – from the sketch to the screen

We're now ready to open our HTML editor and start producing our design mockup. We'll work through the layout in HTML and CSS using our sketch and then the final visual elements will be created in an image editor at the end.

## Time for action – creating our static HTML file

We'll need a single HTML file for this design, so let's create it and start setting it up:

1. Open your HTML or text editor and create a new, fresh `index.html` file.
2. Add the following to the very first line in the document:

   ```
   <!DOCTYPE html>
   ```

3. Save your `index.html` file.

### *What just happened?*

We created a new HTML file to contain our mockup and added the `DOCTYPE` declaration to it.

You must always specify `DOCTYPE` in all HTML documents, so that the browser knows what type of document to expect. If you're familiar with the different `DOCTYPE` declarations for HTML 4.0, or XHTML Strict, or Transitional, you probably remember it being a fairly lengthy line of code. The great news is that with HTML5, things just got a whole lot simpler.

Don't forget, even though it's such a simple declaration, you still need the basic `DOCTYPE` declaration when using HTML5.

## The semantic body

After our `DOCTYPE`, we can add the other essential requirements of an HTML file, the `html` tags, `head` tags, `title` tags, and `body` tags.

## Time for action – adding in basic HTML structure

The next step is to give our HTML file some basic structure:

1. Immediately below the `DOCTYPE` declaration, add in the basic HTML markup structure required for any web page to work:

```
<html dir="ltr" lang="en-US">
<head>
<meta charset="UTF-8" />
   <title> </title>
</head>

<body>

</body>
</html>
```

2. Save your `index.html` file.

> **Downloading the example code**
>
> You can download the example code files for all Packt books you have purchased from your account at `http://www.packtpub.com`. If you purchased this book elsewhere, you can visit `http://www.packtpub.com/support` and register to have the files e-mailed directly to you.

## *What just happened?*

Our page now has the core HTML structure that all site pages need. It has defining `html` tags, `head` tags where `meta` and other defining and included information are placed, and most importantly, `body` tags. HTML `body` tags are where everything that's seen on a web page goes.

Now we'll add some more elements for our theme's content.

## Time for action – adding in the semantic structure

The markup for our mockup now needs to go between those `body` tags we created.

1. Between your `<body>` tags in index.html, add the code for a very basic semantic overview of your theme:

```
<div id="container"><!--layout container-->
<header>
```

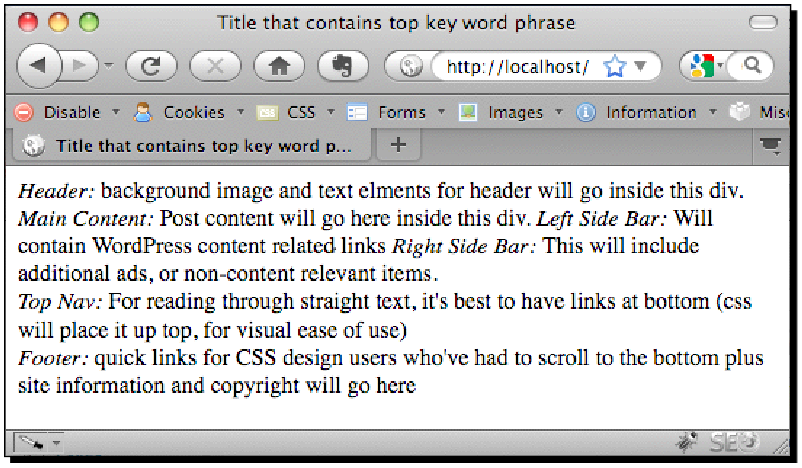
```
<em>Header:</em> background image and text elements for header
will go inside this div.
</header><!--//header-->

<!-- Begin #container2 this holds the content and sidebars-->
<div id="container2">

<!-- Begin first section holds the left content columns-->
<section>
<!-- Begin content -->
<article>
<em>Main Content:</em> Post content will go here inside this div.
</article>
</section>

<!-- Second section holds the right columns-->
<section>
<!-- #left sidebar -->
<aside class="sidebar1">
<em>Left Side Bar:</em> Will contain WordPress content related
links
</aside><!--//.sidebar1  -->

<!-- #right sidebar -->
<aside class="sidebar2">
<em>Right Side Bar:</em> This will include additional ads, or non-
content relevant items.
</aside><!--//.sidebar2-->
</section>

</div><!--//#container2-->

<nav id="mainNav">
<em>Top Nav:</em> For reading through straight text, it's best to
have links at bottom (css will place it up top, for visual ease of
use)
</nav><!--//mainNav-->

</div><!--//container-->

<footer>
<em>Footer:</em> Useful information and quick links for CSS design
users who've had to scroll to the bottom plus site information and
copyright will go here

</footer>
```

2. Save your `index.html` file.

## What just happened?

We added some semantic markup to our HTML file to give us an idea of what will be going where. Note that the actual text won't be the same in our final theme, this is just to give us some direction as we complete our design.

So, what does this page look like if we open it in a browser?


Title that contains top key word phrase
http://localhost/
Disable
Cookies
CSS
Forms
Images
Information
Title that contains top key word p...

*Header:* background image and text elments for header will go inside this div. *Main Content:* Post content will go here inside this div. *Left Side Bar:* Will contain WordPress content related links *Right Side Bar:* This will include additional ads, or non-content relevant items.
*Top Nav:* For reading through straight text, it's best to have links at bottom (css will place it up top, for visual ease of use)
*Footer:* quick links for CSS design users who've had to scroll to the bottom plus site information and copyright will go here

As you can see, it's very simple right now, but it's a start.

If a search engine bot or someone using a text-only/text-to-speech browser or mobile device arrived and viewed our site, the following is the order they'd see things in:

- **Header**: Because it's good to know whose stuff you're looking at
- **Main content**: Get right to the point of what you're looking for
- **Left column content**: Under the main content, we should have the next most interesting items features list, category (sometimes referred to as columns links), and archives (sometimes called "Past Issues" links)
- **Right column content**: It is the secondary information such as advertisements and non-content related items
- **Top page navigation**: Even though in the design this will be on the top, we've coded it at the bottom in text-only viewing with an anchor link to it for easy access
- **Footer information**: If this was a page of real content, it's nice to see whose site we're on again, especially if we've been scrolling or reading down for some time

## Attaching our CSS stylesheet

So, now that we have an HTML file set up, the next step is to create a stylesheet for our CSS.

Here's a quick refresher on how to apply the following CSS selectors (if these seem unfamiliar or new to you, you may want to check out the resources in *Chapter 1*, *Getting Started as a WordPress Theme Designer* and brush up on your CSS skills):

- **HTML object tags** (header, paragraph, list items, div tags, and so on) can just be listed as a CSS selector for example, `div{...} p{...}`.
- **ID** names that are attributes and should only be used once on a page, have a "#" hash mark in front of their CSS selector for example, `#container{...}` `#sidebar{...}`.
- **Class** names are attributes that can be applied *multiple times* on a page and combined with other classes, have a period (`.`) in front of the selector's name for example, `.floatLeft{...}`.

## Time for action – creating and including a style.css shell into your index.php page

Let's create our stylesheet:

1. In your text editor, create a new file and name it `style.css`. Make sure it's in the same directory as your `index.php` file.
2. Open your `index.html` file, and inside the `<head>` tags, just under the `<title>` tags, add the following link to your `style.css` file:

```
<link rel="stylesheet" type="text/css" media="all" href="style.
css" />
```

### *What just happened?*

We created a new stylesheet called `style.css` and attached it to our `index.html` file with a line of code inside the `<head>` section of our HTML file.

For now our stylesheet is still empty, but we'll change that shortly.

## Prepping for responsiveness – viewport and apple-mobile meta tags

Our theme is going to be responsive—its layout will adapt to the width of the device it's being viewed on. In order for this to work, and for mobile devices to display the site at the correct width, we need to add some more code to our `<head>` section in our `index.html` file.

## Time for action – adding in the viewport and apple-mobile meta tags

Adding the tags is very simple.

1. In your `index.html` `head` tags, place the following meta tags:

```
<meta name="viewport" content="width=device-width">
<meta name="apple-mobile-web-app-capable" content="yes">
<meta name="apple-mobile-web-app-status-bar-style"
content="black">
```

## *What just happened?*

We added three `meta` tags to our file to ensure the theme behaves as it should on mobile devices. Let's have a look at each:

- The `viewport` meta tag is a Webkit requirement and not (yet) a W3C standard. The `width` property controls the viewport. As we'll be styling our layout based on the screen size, we'll want this set to `device-width`.
- By setting the `apple-mobile-web-app-capable` meta tag to `yes`, the site will run in full screen mode (when selected by the users), meaning it will bump the address bar up out of the screen view once the page has loaded. Even though this meta tag has the word `apple` in it, it actually affects all Webkit-based browsers, so even Android devices should benefit from this tag.
- On iOS devices the `apple-mobile-web-app-status-bar-style` specifies the status bar settings. This setting changes the color of the bar and then moves it out of the way or allows it to stay up at the top. If we set it to `default` it will stay its normal "iOS gradient-gray", but move up out of the way. We've changed to `black` (the only color you're allowed to change it to).
- If we were to change it to `black-translucent` it would stay permanently over the top of the HTML content and be slightly transparent. If your users need access to the status bar while browsing the site, you might want to consider making this setting `black-translucent`.

## Adding in content

We're now ready to add some text-based content. Even if you're designing a very visual theme, text is the most common element of a site, so you should be prepared to put a fair amount of thought into how it will be displayed.

## Starting with the text

We'll start by adding some dummy text to our site. As we go along, we'll create elements for that content to go into, which will use up-to-date, semantic HTML5 elements.

## Time for action – adding sample text to our semantic sections

If you're adding dummy text, you can either use **lorem ipsum** text (you can access examples of it at `http://www.lipsum.com`), or you could add some more descriptive text (an example of which you can find at `http://notloremipsum.com`). The second approach often helps when building sites for clients as it helps them see what sort of content will go where. For our purpose we'll just use lorem ipsum.

1. Still in `index.html`, delete any HTML you may have already added in between the `body` tags.
2. Add your semantic elements with their content. A section of the code used in our mockup is shown next (to save space here we've only included a sample, but you can download the full code pack for this chapter from the book's pages on the Packt website):

```
<div id="container"><!--container goes here-->
<header>
  <hgroup class="screen-text">
  <h1>OpenSource</h2>
    <h2>Online Magazine</h2>
    <p><em>Using Open Source for work and play</em></p>
    </hgroup>
  <div id="date">Current Month and Year</div>
</header><!--//header-->

<!-- Begin #container2 this holds the content and sidebars-->
<div id="container2">

<!-- Begin #container3 keeps the left col and body positioned-->
<section class="">
<h2 class="thisMonth">This Month</h2>

<!-- Begin #content -->
<article class="post">
<h2><a href="#">Really Long Article Title Name The More Text The
Better Cause You Never Know</a></h2>
<em>Main Content:</em> Post content will go here inside this div.
<p>by Author Name for <a href="#">Column Type</a></p>
```

```
<div class="entry-content"><!--//post-->
<p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a
eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus.
In euismod tellus id ante. Ut lectus. Nunc adipiscing. Praesent
luctus, massa quis vulputate rhoncus, justo turpis mollis dolor,
nec blandit nisl mauris et pede.</p>
<p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed
a eros nec orci volutpat vestibulum. Ut pellentesque sagittis
metus.</p>

<p><a href="#">Read the rest of this entry &raquo;</a></p>
</div><!--//.entry-content-->
```

3. Save your `index.html` file.

## What just happened?

We added some semantic elements to our site, with content.

Let's look at some of the elements we've included:

- A `#container` div to contain our page content—useful for styling
- The `header` element—containing the site title and description, inside an `hgroup` tag with a `.screen-text` class so we can make it invisible to browsers with CSS turned on
- A `#container2` div to hold the post or page content and sidebars
- A section to contain all of the post or page content
- An `article` element with a `.post` class—it mirrors the class WordPress will eventually assign to this element, as we'll see in *Chapter 4*, *Advanced Theme Features*
- An `h2` element for the title of the post
- A `p` element with author information
- A div with the `.entry-content` class to hold the post content itself—this also mirrors the class WordPress will assign once we set that up
- More `p` elements to contain the content itself, these will eventually be automatically populated by WordPress from the site's database but for now we're using dummy text

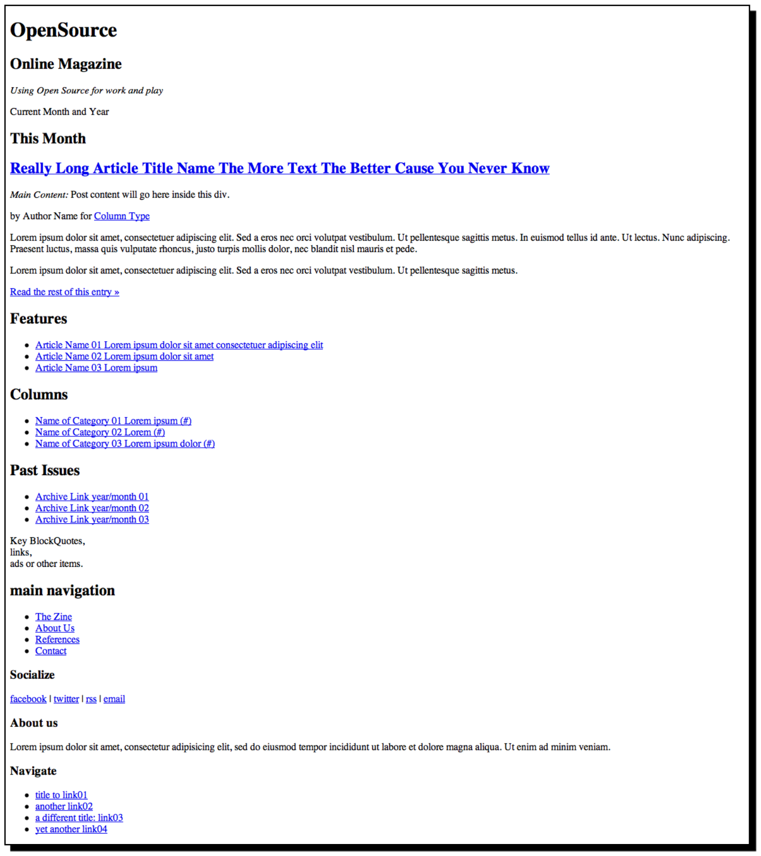
**The trick: Start with a lot of text**

Use a lot of sample text. It's tempting to create a nice mockup that's got clean, little, two-word headers, followed by trim and tight, one or two-sentence paragraphs (which are also easier to handle if you did the entire mockup in Photoshop, right?).

In this optimally minimalist sample, the design looks beautiful. However, the client then dumps all their content into WordPress and your theme, which includes long, boring, two-sentence headlines and reams of unscannable text. Your beautiful theme design now seems dumpy and all of a sudden the client isn't so happy, and they are full of suggestions they want you to incorporate in order to compensate for their text-heavy site.

Just design for lots of text upfront. If the site ends up having less text than what's in your mockup, that's perfectly fine; less text will always look better. Getting lots of it to look good after the fact is what's hard.

Now let's see what our page looks like when viewed in the browser:



OpenSource

Online Magazine

*Using Open Source for work and play*

Current Month and Year

This Month

Really Long Article Title Name The More Text The Better Cause You Never Know

*Main Content:* Post content will go here inside this div.

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Ut lectus. Nunc adipiscing. Praesent luctus, massa quis vulputate rhoncus, justo turpis mollis dolor, nec blandit nisl mauris et pede.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus.

Read the rest of this entry »

Features

- Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
- Article Name 02 Lorem ipsum dolor sit amet
- Article Name 03 Lorem ipsum

Columns

- Name of Category 01 Lorem ipsum (#)
- Name of Category 02 Lorem (#)
- Name of Category 03 Lorem ipsum dolor (#)

Past Issues

- Archive Link year/month 01
- Archive Link year/month 02
- Archive Link year/month 03

Key BlockQuotes,
links,
ads or other items.

main navigation

- The Zine
- About Us
- References
- Contact

Socialize

facebook | twitter | rss | email

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

- title to link01
- another link02
- a different title: link03
- yet another link04

You can see it has a basic structure in place, but it now needs some styling. After all, this isn't 1992!

## Styling our fonts

So, now we're going to add some styling for our text, starting with the fonts, or font families used to display it.

### Styling font families

By assigning font families to our CSS rules, we can set up backup font choices. This means if someone doesn't have our preferred font, then they'll probably have the backup we specify, and if they don't have that? Well, at the very least we can rely on their browser's built-in "generic" assigned font. Just specify `serif`, `sans-serif`, or `mono-space`.

[ When specifying font families, it's a good idea to include one or more of the fonts which are both commonly held on PCs, Macs, and mobile devices, and which look good on screen (as against on paper). Fonts designed for screens include Verdana and Georgia, and other fonts commonly available on your users' systems will be Arial and Times New Roman. ]

Our headers will be Helvetica with Arial as a fallback, and the body content of our text will be Trebuchet with Helvetica and then Verdana as a fallback.

## Time for Action – assigning your font families

Let's add some font families to our stylesheet:

1. In your `style.css` file, under the `TYPOGRAPHY` comment, add the following code:

```
/*------------------TYPOGRAPHY -------------------*/
/*
Set font stacks here
Assign default colors only. Otherwise color is handled at BOTTOM
of sheet.
*/

body
{font-family: 'Trebuchet MS', Helvetica, Arial, Verdana, sans-serif;
}
h1, h3, h5{
font-family: Helvetica, Arial, sans-serif;
}
```

```
    h2, h4, h6{
  font-family: 'Helvetica Neue', Helvetica, 'Arial Condensed', Arial,
sans-serif;
    }
    a {
  font-family: Helvetica, Arial, sans-serif;
    }
    pre, code{
  font-family: Courier, monospace;
    }
```

2. Save your stylesheet.

## What just happened?

We set the font families that our theme will use, including:

- The default font for the `body` element, which will apply to anything we don't specify an alternative font family for, because of CSS inheritance
- Font families for our headings and links
- Finally, a font family for `pre` and `code` element, in other words for the display of code in our theme

### @font-face techniques

You'll be pleased to know we can take advantage of a much wider world of typography than just what's hopefully installed on other people's computers. Using `@font-face` and other techniques, you can serve up fonts of your choice to your site's users. We'll go over these techniques in detail in *Chapter 7*, *Tips and Tricks*.

Warning: Most fonts are licensed! You must not violate the terms and licensing of fonts. As most were expecting to be used with print, many have licenses which will be violated if you use them on the web with the `@font-face`, `Cufon` (or sIFR) techniques. Your best bet is to use open source fonts. A great repository is `http://www.fontsquirrel.com/`. We'll also be using Google's new font repository: `http://www.google.com/webfonts`.

The next step is to specify sizing for our fonts.

## Styling font sizes

We have our font families in place, but we need to tell browsers at what size to display the text in our theme.

## Time for action – sizing your fonts

Let's add some styling for font sizes to the CSS declarations we've set up for our font families.

1. In `style.css`, edit the font styling so it reads as follows:

```
/*------------------TYPOGRAPHY --------------------*/
/*
Set font stacks here
Assign default colors only. Otherwise color is handled at BOTTOM
of sheet.
*/

body{
  font-family: 'Trebuchet MS', Helvetica, Arial, Verdana, sans-
serif;
  font-size: 0.9em;
  color: #333;
}
h1, h2, h3, h4, h5, h6 {
  font-weight: 100;
  margin: 20px 0 10px 0;
}
h1, h3, h5{
  font-family: Helvetica, Arial, sans-serif;
  line-height: 120%;
  color: #666;
}
h2, h4, h6{
  font-family: 'Helvetica Neue', Helvetica, 'Arial Condensed',
Arial, sans-serif;
  line-height: 110%;
  color: #999;
}
a {
  font-family: Helvetica, Arial, sans-serif;
  font-size: 100%;
  color: #666;
  font-weight: 100;
  text-decoration: none;
}

pre, code{
  font-family: Courier, monospace;
  font-size: 100%;
  margin-bottom:10px;
}
```

2. Now add some more specific height styling for some other elements. Add the following code below the code you've just added:

```
    h1 {
  font-size: 280%;
    font-weight: 600;
   }
   h2 {
  font-size: 220%;
    border-bottom: 1px solid #ccc;
    padding-bottom: 10px;
   }
   h3 {
  font-size: 180%;
   }
   h4{
  font-size: 200%;
    color: #999
   }
   h5{
  font-size: 115%;
   }
   h6{
  font-size: 100%;
   }
   p {
  line-height: 150%;
  margin-bottom: 170%;
   }
```

3. Save your stylesheet.

## What just happened?

We added some additional styling for font sizing. You'll notice that we've also included some styling for margins as well, to give our text some extra space where it's needed.

As you can see, in the previous code examples, the only `em` size we used was in the `body` rule. The rest of our header, paragraph, and other typography-based rules rely on increasing or decreasing the font size based on percentages. `90% = 0.9em` and so `90%` would size down the font a tad, while `280%` sizes the font up considerably. Now, if our client asks to just "bump down" (or up) the size on everything "a little" all we have to do is change the main `em` size in the `body` rule. Everything else will size up or down, relatively, based on the percentage we assigned it. Easy!

We then moved on to using percentages to help us with the `line-height` property and also made sure our `a href` links stand out with a different `font-family`, yet still have the familiar underline appear on `:hover`.

Using `ems` and percentages in this way is also far better for accessibility than using pixels, as it means that, if a user has set their browser to resize text, this will be applied across our theme, and not be overridden by any pixel-based text styling.

The final stage in styling our text is to deal with text we want to hide from browsers with CSS turned on, while making them visible to screen readers and search engine bots.

## Time for action – handling search engine bots/screen reader text

You'll note in the HTML5 markup, we have several headers and `hgroups` assigned a class called `.screen-text`. This is the text that users viewing the styled site in a browser won't see, but makes things clear for text screen readers and may have some SEO benefits.
Let's add the styling for it:

1. In the `TYPOGRAPHY` section of your stylesheet, add the following:

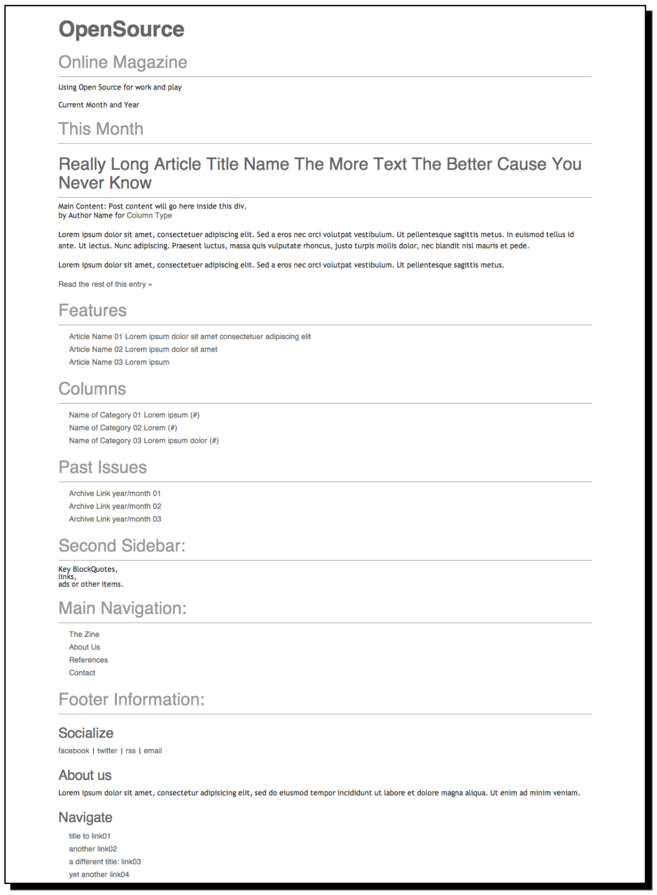
```
  /* Text meant only for screen readers */
  .screen-text{
position: absolute;
left: -5000em;
  }
```

2. Save your `style.css` file.

## *What just happened?*

We added some property settings to move any text that has the `.screen-text` class assigned to it, `5000em` units to the left. Assuming most people have a screen that's smaller than `5000ems`, this will be hidden from view.

Let's take a look at our basic text styling so far. The following image shows our mockup starting to take shape:



OpenSource

Online Magazine

Using Open Source for work and play

Current Month and Year

This Month

Really Long Article Title Name The More Text The Better Cause You Never Know

Main Content: Post content will go here inside this div.
by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Ut lectus. Nunc adipiscing. Praesent luctus, massa quis vulputate rhoncus, justo turpis mollis dolor, nec blandit nisl mauris et pede.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus.

Read the rest of this entry »

Features

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Columns

Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Past Issues

Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

Second Sidebar:

Key BlockQuotes,
links,
ads or other items.

Main Navigation:

The Zine
About Us
References
Contact

Footer Information:

Socialize

facebook | twitter | rss | email

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

title to link01
another link02
a different title: link03
yet another link04

If you don't like how your text looks here, then a bunch of graphics, columns, and layout adjustments won't help! Take your time getting the text to look nice and read well now. You'll have less edits and tweaks to make later.

## Setting up our layout with CSS

Now that we've got our initial typography set up, let's start making this stuff look like our sketch! First up, we'll add a call to the `layout-core` stylesheet to give our theme some basic layout styling.

## Time for action – referencing our layout core to set up our positions

Let's make sure our stylesheet references the layout core:

1. At the very top of your stylesheet, add the following code:

```
/*
 ---------------------------------------------------
|NOTE: This style sheet leverages: layout-core.css. |
 ---------------------------------------------------
*/
@import url(layout-core.css);
```

2. Make sure you have a copy of `layout-core.css` in the same directory as your `style.css` and `index.html` files. You can find a copy in the code bundle for this chapter.
3. Save your stylesheet.

## *What just happened?*

We added the `@import` directive to call an external stylesheet, meaning we can make use of the layout styling already set up in `layout-core.css` and won't have to add it all in manually.

Layoutcore uses a few classes to help us achieve our layout. To use them, you'll simply assign whether a `div`, `section`, `article`, or `aside` tag should float, `left` or `right` and then assign an additional class of `full`, `half`, `two-thirds`, `three-quarters`, `third`, or `quarter` to set the width of that HTML element. We'll come to this later in this chapter.

**CSS Resets**

Of course, you might be building your own stylesheet from scratch and won't want to include `layout-core.css`. If so, it's a good idea to include a CSS Reset at the beginning of your stylesheet. This resets any browser-specific CSS so we can start with a clean sheet regardless of what browser the user is viewing our site in.

Our `layout-core.css` file includes a reset, so if you're importing that, you don't need to add another one.

For more on CSS Resets, and an example of a great one to use, see `http://meyerweb.com/eric/tools/css/reset/`.

Now that we have our `@import` directive set up, we'll move on to add some media queries to make our theme responsive.

**Media queries** sit at the end of a stylesheet and they specify the styling to apply depending on the width of the screen the site's being viewed on. For much more on building responsive themes and leveraging media queries, see *WordPress Mobile Web Development: Beginner's Guide*, *Rachel McCollin*, *Packt Publishing*.

## Time for Action: Adding our media queries

The following steps will allow you to add your media queries:

1. Below your typography section in your `style.css` stylesheet (or at the bottom of the stylesheet if you have other code below your typography section), add the following media queries:

```
 @media (min-width: 1220px) {

}
@media (max-width: 1024px) {

}

@media (min-width: 480px) and (max-width: 800px) {

}
@media (max-width: 480px) {

}
@media only screen and (min-width: 320px) and (max-width: 480px) {

}
```

2. Save your stylesheet.

### What just happened?

We added some media queries to target the screen sizes most commonly used. Let's have a look at how they work:

- `@media (min-width: 1220px)` targets very large screens
- `@media (max-width: 1024px)` targets small desktop screens and larger tablet screens

- `@media (min-width: 480px) and (max-width: 800px)` target small tablet screens or larger tablet screens in portrait
- `@media (max-width: 480px)` targets small screens including phones in landscape
- `@media only screen and (min-width: 320px) and (max-width: 480px)` target phones in portrait

> These media queries work for the vast majority of devices available at the time of writing. But as more and more devices are released with different screen widths, you may find these media queries don't continue to target the devices you expect them to. When working on your theme, you may find it helps to tweak these media queries so they target widths at which the design needs to be altered for it to look good, rather than focusing on specific devices.

## Setting up the desktop view

We'll first start with our desktop browser view. We'll use `layout-core.css` to help us set our columns up.

## Time for action – standard settings

Now we'll set up the default styling for the desktop view:

**1.** Below the typography section in your stylesheet and above the media queries, add the layout styling, shown as follows:

```
/*------------------ STANDARD STYLING -------------------*/
header{
  height: 110px;
}

#mainNav{
  position:absolute;
  top: 110px;
  width: 100%;
}
#mainNav li a{
  display: block;
  padding: 10px 15px 13px 15px;
  line-height: 100%;
  -size: 120%;
  border: none;
  color: #036;
}
#across{
  margin: 0;
  width:100%;
}/*for a stretched bottom only*/

h2.thisMonth{
  font-size: 260%;
}
.content{
  margin-top: 250px;
}
.sidebar{
  margin-top: 150px;
}
.sidebar div{
  margin-top: 30px;
  padding-bottom: 10px;
}
.sidebar h2{
  margin-left:20px;
}
```

2. Save your stylesheet.

## What just happened?

We added styling for our layout on standard desktop screens. We don't need to examine all of the CSS in detail but some points to note are as follows:

- Our `#mainNav` navigation element has been positioned `absolute` so it could be brought up to the top of our layout
- We added some sizing for our `.thisMonth h2` title
- Our `#across` div is for larger desktops stretched all the way out to the full width of the screen
- We added margins and padding for our `.content` and `.sidebar` divs, in particular `margin-top` to push them down (this is because we'll be adding in a background image here in a bit)

## Time for action – checking in on larger desktops

We've styled our standard, default view, but we'll also want to handle larger desktop browsers. Let's add some CSS to our first media query, to widen the `#mainNav` nav element out to match our `#container` div if we detect a larger screen:

1. Inside your first media query, add the following code:

```
@media (min-width: 1220px) {
   #mainNav{
    position:absolute;
    top: 110px;
    width: 1100px;
  }
}
```

2. Save your stylesheet.

### What just happened?

Our `layout-core.css` stylesheet sets our div widths as percentages, so they'll expand to whatever size the `#container` div is set to. It also sets the `#container` div to 1100 pixels. Our `#mainNav` nav will now match and not extend over the `#container` div on larger screens.

## Time for action – making sure smaller screens are handled

When our `layout-core.css` file snaps the `#container` div in on smaller screens to 950 pixels, we'll want `#mainNav` to match that as well:

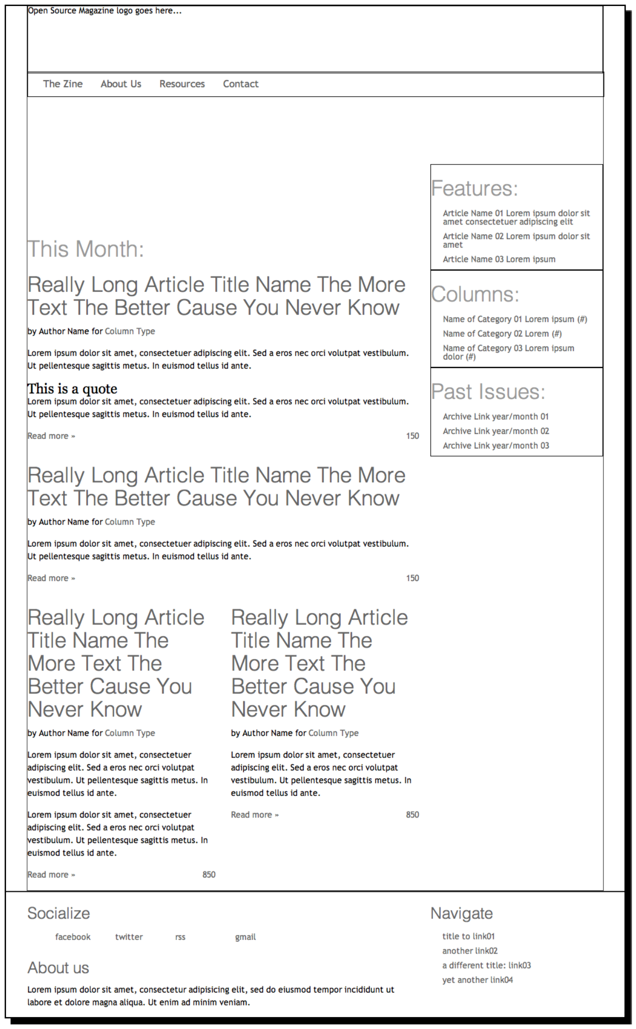
1. In the next media query, add the following code:

```
@media (max-width: 1024px) {
  /*for netbook/tablet screens*/
  #mainNav{
  position:absolute;
  top: 110px;
  width: 950px;}
}
```

2. Save your stylesheet.

## What just happened?

Our `#mainNav` will now snap in to the width of our `#container` div if the media query for `1024px` or less is called. Let's see how it looks on the relevant size screen:



Open Source Magazine logo goes here...

The Zine About Us Resources Contact

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit

Article Name 02 Lorem ipsum dolor sit amet

Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)

Name of Category 02 Lorem (#)

Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01

Archive Link year/month 02

Archive Link year/month 03

This Month:

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

This is a quote

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more » 150

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more » 150

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more » 850

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more » 850

Socialize

facebook twitter rss gmail

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

title to link01

another link02

a different title: link03

yet another link04

## Setting up the tablet view

We're now ready to focus on our tablet and media player views. There are lots of devices out there in this range. The following two media queries help catch the majority of these devices.

## Time for action – adjusting the standard layout for tablets

We'll start with devices that range from 480 pixels wide up to 800 pixels. This range includes the iPad when it's held in portrait orientation:

1. Add the following code to your media query:

```
@media (min-width: 480px) and (max-width: 800px) {
  header{
    height: 100px;
  }
  #mainNav{
    top:100px;
    width: 300px;
  }
  #mainNav li{
    float:none;
    clear:both;
  }
    #container2{
    background-position: 70% -90px;
  }
  .home article.post h2{
    font-size: 150%;
    margin-bottom: 10px;
  }
  .home article.post .entry-content,article.post .entry-meta,
article.post a.more{
    display:none;
  }
  .content.left.two-thirds, .sidebar.right.third{
    float:none;
    clear:both;
    margin: 0 auto;
    width:98%;
  }
  .sidebar div{
    width: 30%;
    margin: 1.2%;
    float:left;
  }
  .home .content.left.two-thirds{
    margin-top:180px;
  }
}
```

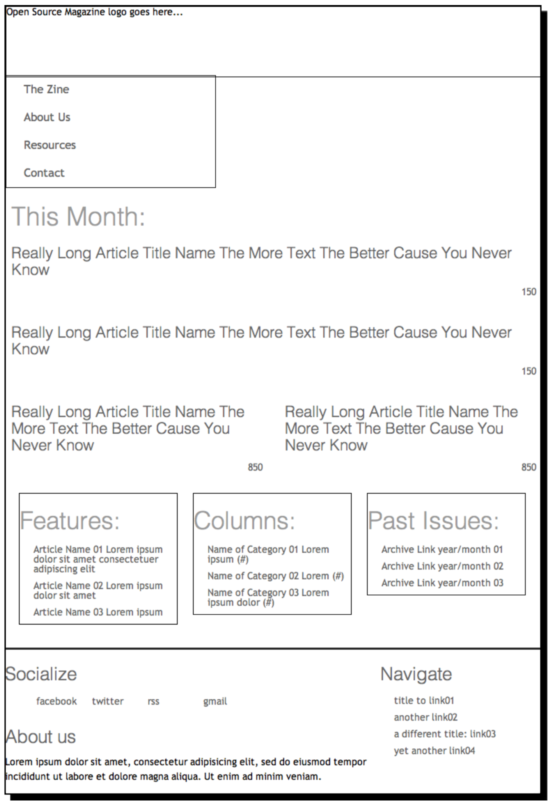
2. Save your stylesheet.

## What just happened?

We added some styling to adjust the layout on tablet devices. Specifically:

- We removed the "tab" floats of our `#mainNav` list items `li` and set them to list vertically
- We changed some of the font sizes of our titles
- We hid our `article` content, only displaying the titles
- We turned off our `.sidebar` element's right float
- We set each div in the `.sidebar` to `float: left` of each other, creating a three-up box spread under our main article headlines

The end result looks like the following screenshot:



Open Source Magazine logo goes here...

The Zine
About Us
Resources
Contact

This Month:

Really Long Article Title Name The More Text The Better Cause You Never Know
150

Really Long Article Title Name The More Text The Better Cause You Never Know
150

Really Long Article Title Name The More Text The Better Cause You Never Know
850

Really Long Article Title Name The More Text The Better Cause You Never Know
850

Features:
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Past Issues:
Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

Socialize
facebook twitter rss gmail

About us
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate
title to link01
another link02
a different title: link03
yet another link04

## Setting up the small screen view

We're now ready to set our small screen view up, which will target smartphones and other smaller devices in portrait orientation.

## Time for action – setting up our small screen layout

Here our media query will be a little different, only applying to screens (the other queries will affect print layout as well).

**1.** In your final media query add the following CSS rules and changes:

```
@media only screen and (min-width: 320px) and (max-width: 480px) {
  header{
    height: 70px;
  }
  #mainNav{
    top:70px;
    width: 220px;
  }
  #mainNav li{
    float:none;
    clear:both;
  }
  #mainNav li a{
    font-size: 100%;
    padding: 10px
  }
  .home article.post h2{
    font-size: 120%;
    margin-bottom: 10px;
    padding-left: 50px;
  }
  .home article.post .entry-content,article.post .entry-meta,
article.post a.more{
    display:none;
  }
  .home article.post a.comments{
    position:absolute;
    margin-top: -55px;
  }
  .content.left.two-thirds{
    margin-top:150px;
  }
  .soc {
    text-indent: -5000em;
  }
}
```

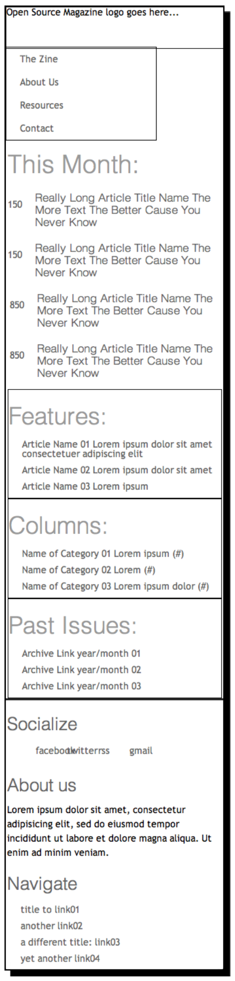
**2.** Save your stylesheet.

## What just happened?

We've added some styling to improve the layout on small screens. In particular:

- We shortened up our header even more and tightened up the width of our `#mainNav`
- We reduced font sizes in our `#mainNav` and titles
- We reduced the margin-top of our `.content` div

The most notable thing that happens is actually handled by default in our `layout-core.css`. All left and right floats are turned off, cleared on both sides, and all percentage widths are set to `100%`. This makes every div laid out in our phone view push edge to edge.
The result looks like the following screenshot:



Open Source Magazine logo goes here...

The Zine
About Us
Resources
Contact

This Month:

150 Really Long Article Title Name The More Text The Better Cause You Never Know

150 Really Long Article Title Name The More Text The Better Cause You Never Know

850 Really Long Article Title Name The More Text The Better Cause You Never Know

850 Really Long Article Title Name The More Text The Better Cause You Never Know

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

Socialize

facebooktwitterrss gmail

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

title to link01
another link02
a different title: link03
yet another link04

## Adding design treatments

Finally! Now we have our mockup's responsive layout set up. Let's polish it off.

**We'll be using CSS3 techniques, even in IE**

We'll be taking advantage of many CSS3 techniques in our design, most notably, simple gradients, rounded corners, and box shadows. Trouble is, IE7 and 8 don't really support any of those CSS3 features yet.

Not to worry, there's a wonderful library called CSS3PIE which we'll be using to create polyfill fallbacks for IE 7 and 8.

The most recent (as of this writing) version is included in this chapter's code files but you can also go and pick up the most recent version of the library from `http://css3pie.com/`.

We'll talk about how to properly implement it for our mockup as well as how to get it working in our WordPress theme in *Chapter 3*, *Coding it Up*.

## Time for action – setting up our graphic treatments in the stylesheet

Now we need to set up a section in our stylesheet for design treatment rules.

1. The first step is to upload our graphics files. Create a folder called `images` inside the folder containing your other files. Upload your image files to it.
2. In `style.css`, below the `STANDARD STYLING` section, but above our media queries, add in our color scheme for background colors:

```
/*------------------REUSABLE GRAPHIC TREATMENTS ------------------
-*/
/*main background colorscheme*/
.bg-main{
  background-color: #222;
}
.bg-secondary{
  background-color: #666;
}
.bg-tertiary{
  background-color: #999;
}
.bg-light1{
  background-color: #eee;
}
```

```
.bg-light2{
  background-color: #ddd;
}
.bg-dark1{
  background-color: #000;
}
.bg-dark2{
  background-color: #444;
}
```

3. Next, add some gradient schemes below. You'll need to include the browser-prefixed versions of the CSS as well—we've left it out here to save space.

```
.grd-vt-main{
  background: linear-gradient(top, #333, #000);
}
.grd-vt-secondary{
  background: linear-gradient(top, #555, #222);
}
.grd-vt-tertiary{
  background: linear-gradient(top, #ddd, #999);
}
```

4. Beneath this, add some rules for handling borders:

```
/*borders*/
.bdr{
  border: 1px solid;
}
  /*apply thickness*/
.bdr-2px{
  border: 2px solid;
}
  /*pick a side*/
.bdr-top{
  border-left:none;
  border-right: none;
  border-bottom: none;
}
.bdr-left{
  border-top:none;
  border-right: none;
  border-bottom: none;
}
```

```
.bdr-right{
  border-left:none;
  border-top: none;
  border-bottom: none;
}
.bdr-bottom{
  border-left:none;
  border-right: none;
  border-top: none;
}
  /*leverage selectors for border colors
   -be sure to apply your rules in this order*/
.bg-main.bdr{
  border-color: #aaa;
}
.bg-secondary.bdr{
  border-color: #999;
}
.bg-tertiary.bdr{
  border-color: #eee;
}
```

5. Next, set up the rounded corners. As with gradients, we've omitted the browser-prefixed code to save space, but you'll find it in the code files of this chapter.

```
/*rounded corners*/
.rnd
  border-radius: 5px;
}
  /*only two corners*/
.rnd-top{
border-radius: 5px 5px 0 0;
}
.rnd-left{
border-radius: 5px 0 0 5px;
}
.rnd-right{
border-radius: 0 5px 5px 0;
}
.rnd-bottom{
border-radius: 0 0 5px 5px;
}
```

***6.*** Finally, set up some box shadows (again, browser-prefixed code has been omitted).

```
...
/*box-shadows*/
.shdw-centered{
box-shadow: 0 0 15px rgba(0, 0, 0, 0.5);
}
.shdw-offset{
box-shadow: 2px 2px 10px rgba(0, 0, 0, 0.5);
}
```

***7.*** Now, save your stylesheet again.

### *What just happened?*

We added styling for borders, gradients, rounded corners, and box shadows.

Keeping in mind our "object-oriented" CSS strategy, these rules have been added, not because we'll definitely use them, but in case we need to use them. Just as the `layout-core.css` sheet freed us to open up our `index.html` file and simply apply class rules to our HTML elements to get our layout going, we can now go in and start applying our color scheme and graphic embellishments to our layout. And of course, if we want to change our mind about colors or gradients or borders, it's easy to update in one or two places in the stylesheet and our entire site will evenly update.

**Keeping WordPress in mind**

In the next chapter, we'll get into "WordPress-ifying" this layout. Keep in mind that WordPress can spit out quite a few classes of its own, and it likes to take advantage of applying multiple classes to HTML objects as well. The good news is, the majority of these classes are such that objects can be identified and offered special styling. We'll come back to this as we work through creating our theme in the next two chapters.

## Adding graphics and background images

Having added all of the CSS-generated styling, we need to think about any graphics we'll be using that can't be generated by CSS.

The beauty of CSS3 is that it reduces the need for these graphics, as we no longer need to create background images for gradients, rounded corners, or shadows. But there are some elements of our design that can't be handled by CSS.

We already have a number of images ready to import into our theme—you'll find them in the code files that go with this book.

Our theme makes extensive use of background images to avoid any problems with inline images conflicting with any other content that our theme's users may add in future. You may prefer to use inline images in your markup, which has the advantage of being better for accessibility and SEO but the disadvantage that if a future user of your theme edits the template files, he or she may accidentally delete images that are required for the design. Our images are for design only and not part of the content, so we're using background images.

## Setting up our background images in our stylesheet

We've exported our logos to one single image. Using the `background-position` property we'll be displaying the different sized logos depending on which screen size triggers our media query.

Wellstyled has an excellent tutorial on how to use a single image technique (also referred to as "CSS sprites") to handle image background rollovers with CSS: `http://wellstyled.com/css-nopreload-rollovers.html`.

You can also check out CSS Tricks, and their article *CSS Sprites: What They Are, Why They're Cool, and How To Use Them* at `http://css- tricks.com/css-sprites/`.

Remember: To see the full and final CSS mockup `style.css` and `index.html` page, please refer to the code download section in the preface.

## Time for action – adding background images to our design

The images we've created need to be added to our stylesheet as background images.

1. In your stylesheet, edit the `STANDARD STYLING` section to add background images and colors, with the following code. Best practice is to add each declaration within the description blocks you've already set up. You can see the final code in the code files of this chapter.

```
header{
  background: url(images/osmag-logos.png) no-repeat 0 0;
}
#mainNav li a:hover{
  color:#088fff;}
#across{
  border-top: 2px solid #444;
  background: #000
}
#container{
  background: url(images/osmag-container-bg.png) no-repeat 50%
-30px;
}
#container2{
  background: url(images/osmag-earth.jpg) no-repeat 50% 0;
}
h2.thisMonth{
  color: #fff;
}
h2.pastIssues{
  color:#222;
}
article h2{
  background: url(images/pngs/highlight-border.png) repeat-x 0
bottom;
}
.comments{
  background: url(images/pngs/comments-icon.png) no-repeat 0 0;
}
```

2. Now add the following new section below your `STANDARD STYLING` section:

```
/*------------------REUSABLE GRAPHIC TREATMENTS ------------------
-*/
/*reusable image backgrounds*/
.img-quote-light{
  background: url(images/pngs/r-quotes-light.png) no-repeat -10px
-7px;
  text-indent: 55px;
}
.img-quote-dark{
  background-image: url(images/pngs/r-quotes-dark.png);
  background-repeat: no-repeat;
  background-position: -10px -7px;
  text-indent: 55px;
}
.img-bottom-shadow{
  background: url(images/pngs/bot-r-shadow.png) no-repeat 50%
bottom;
}
.img-top-shadow{
  background: url(images/pngs/top-r-shadow.png) no-repeat 50% 0;
}
.img-line-hz{
  background: url(images/pngs/highlight-border.png) repeat-x left
bottom;
}
```

3. Save your `style.css` file.

## What just happened?

We added CSS for backgrounds and colors into our stylesheet. As you'll notice, we made a lot of use of `no-repeat` to ensure our background images didn't repeat, and used positioning of background images to place them in our design.

Now let's add any changes needed for those backgrounds to our media queries.

## Time for action – adding background image styling to the media queries

We'll need to edit the two media queries for the two smallest screen sizes.

1. Inside the media query targeted at small tablets and phones in landscape—`@media (min-width: 480px) and (max-width: 800px)`—add the following code. Again, you'll find you can add it to your existing declarations.

```
header{
  height: 100px;
  background-position: 0 -220px;
}
#mainNav{
  top:100px;
}
#mainNav li{
  background: url(images/pngs/highlight-border.png) repeat-x 0
bottom;
}
#container2{
  background-position: 70% -90px;
}
```

2. Next, in the media query targeting small screens—`@media only screen and (min-width: 320px) and (max-width: 480px)`—add the following code:

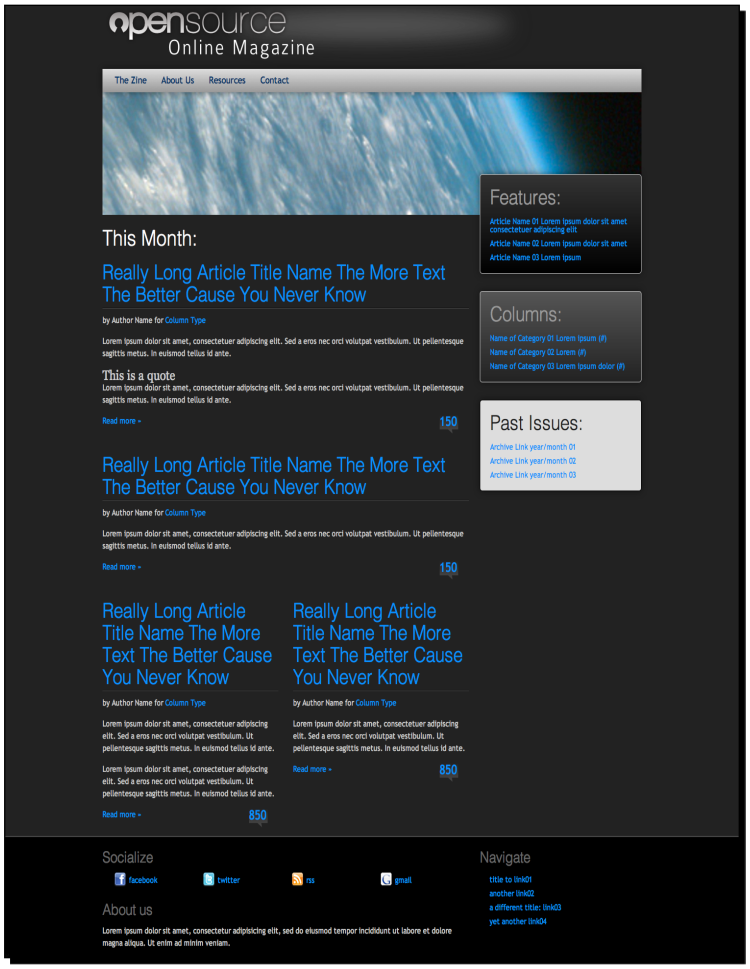
```
header{
  height: 70px;
  background-position: 0 -425px;
}
#mainNav{
top:70px;
}
#mainNav li{
background: url(images/pngs/highlight-border.png) repeat-x 0
bottom;
}
#mainNav li a{
padding: 10px
}
```

3. Finally, save your stylesheet.

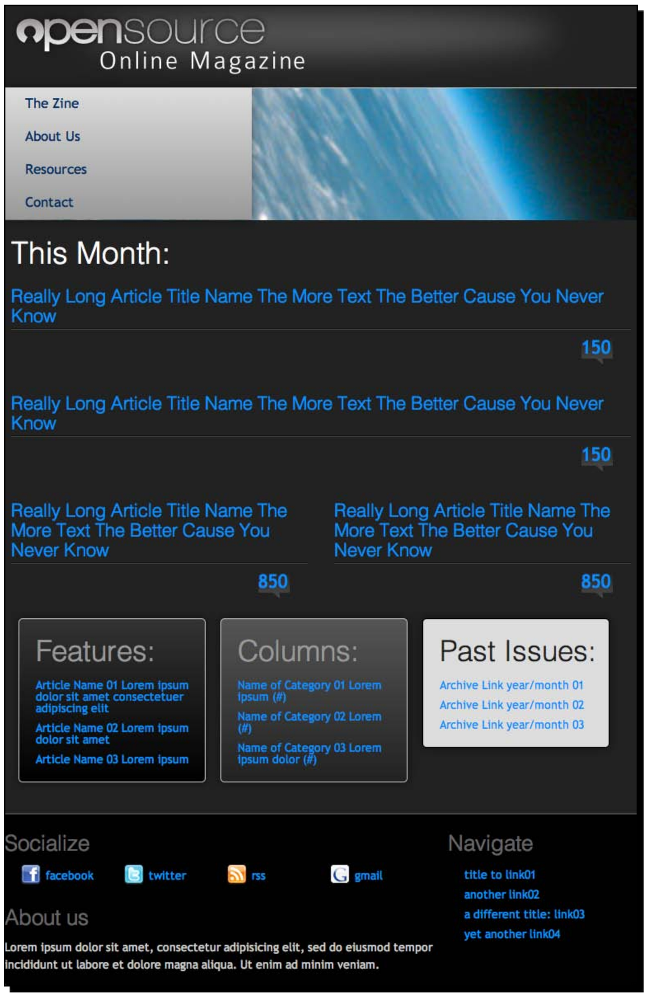
## What just happened?

We loaded our graphics into our `STANDARD STYLING` rules and then moved on to each media query, modifying the `height`, `background-position` and other visual properties as needed along the way. Most notably, we changed our header height and, using the CSS sprite technique, our logo loaded up with the different sized logo as our screen dimension changed.

Our final desktop layout now looks like the following screenshot:



Our final portrait tablet layout now looks like this:



This Month:

Really Long Article Title Name The More Text The Better Cause You Never Know

150

Really Long Article Title Name The More Text The Better Cause You Never Know

150

Really Long Article Title Name The More Text The Better Cause You Never Know

850

Really Long Article Title Name The More Text The Better Cause You Never Know

850

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit

Article Name 02 Lorem ipsum dolor sit amet

Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)

Name of Category 02 Lorem (#)

Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01

Archive Link year/month 02

Archive Link year/month 03

Socialize

facebook twitter rss gmail

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

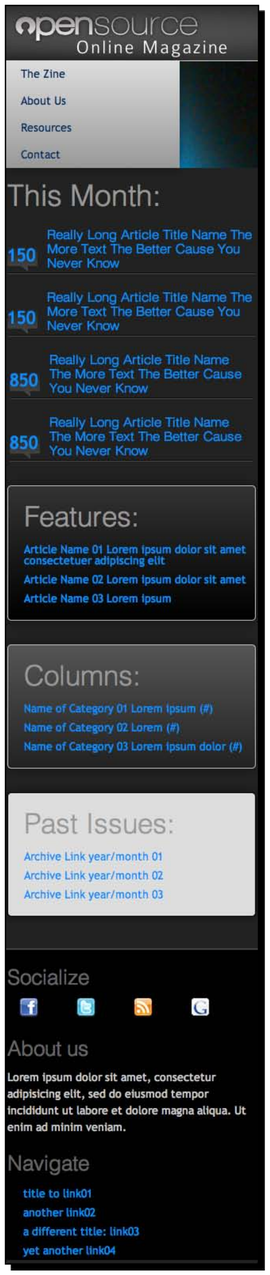
title to link01

another link02

a different title: link03

yet another link04

And last, our final phone layout now looks like this:



opensource
Online Magazine

The Zine
About Us
Resources
Contact

This Month:

150 Really Long Article Title Name The More Text The Better Cause You Never Know

150 Really Long Article Title Name The More Text The Better Cause You Never Know

850 Really Long Article Title Name The More Text The Better Cause You Never Know

850 Really Long Article Title Name The More Text The Better Cause You Never Know

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

Socialize

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Navigate

title to link01
another link02
a different title: link03
yet another link04

## Don't forget the favicon and touch icon

You certainly don't need a favicon or touch icon, but it does add a finishing touch. Let's work through the steps to do it.

### Adding a favicon

Favicons are those little 16px x 16px icons that appear next to the URL in the address bar of a web browser. They also show up on the tabs (if you're using a tabbed browser), in your bookmarks, as well as on shortcuts on your desktop or other folders in Windows XP and Vista.

The easiest (and quickest) way to create a favicon is to take your site's logo, or key graphic (in this case, the "O" in **opensource**), and size it down to 16px x 16 px; then save it as an `.ico` file.

> For advice on creating a favicon, see the page on the WordPress codex at `http://codex.wordpress.org/Creating_a_Favicon`.

## Time for action – adding the favicon you just created

Having created a favicon, we need to upload it to our theme.

1. Once you have your `favicon.ico`, place the file in the same folder as your stylesheet and `index.html` file.
2. Open `index.html` and add this code inside the `<head>` section:

```
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon"
/>
```

### *What just happened?*

We added a favicon, uploaded it to the correct place, and added a line of code in our `index.html` file referencing it.

If you refresh your browser you'll see it in your navigation bar.

**Can't see your favicon?**

Be sure to name your file `favicon.ico` correctly! It won't work if it's not named `favicon.ico`.

You may also find that you need to clear your cache and reload several times before you see your new favicon. Be sure to actually clear your cache through your browser's preference panel. The keyboard shortcut *Shift* + *F2*(Refresh) sometimes only clears the web page cache. Some browsers cache favicons in a separate directory.

## Have a go hero – making your favicon high-resolution

A little known fact about the `.ico` format is that it can contain multiple versions of itself at different color depths and resolutions. This is how your operating system is able to display those "smooth icons" that seem to be the right resolution no matter how large or small they're displayed. You may have noticed that some favicons, if saved as shortcuts to your desktop, look great and others look jaggy and terrible. The ones that look great take advantage of this feature.

The three main sizes that Windows will display a favicon in are: 16 x 16, 32 x 32, and 48 x 48. Sometimes favicons go all the way up to 128 x 128. It's up to you; just remember, the more resolutions, color depths, and transparencies you add, the larger your favicon file is and longer it will take to load.

You'd basically use the same steps listed previously to create your favicon, just starting with 48 px x 48 px, then save it (so as to not overwrite your original file) down to 32 x 32 and last 16 x 16. It helps to save each icon initially in PNG format, especially if you want the background to be transparent.

To find out more about favicons and generate your own, visit `http://www.favicon.co.uk`.

## Touch icons

Since we just took the time to add a great, multi-resolution favicon, we might as well go all out and add in a nice touch icon. Touch icons are used by iOS and Android devices with versions higher than 2.1.0. While you can technically just create one higher resolution image (for example, 114 x 114) the other devices will size it down, but then why waste bandwidth time loading in a larger image if you don't have to? It's better to create the three required sizes.

## Time for action – adding a touch icon

Once you have a touch icon (which you should have saved as `.png` or a set of them), you'll need to add them to your theme.

1. Upload your touch icon to the same folder as your `index.html` file.
2. In `index.html`, add the following code inside the `<head>` section:

```
<link rel="apple-touch-icon" sizes="57x57" href="/apple-touch-
icon-57x57.png"/>
<link rel="apple-touch-icon" sizes="72x72" href="/apple-touch-
icon-72x72.png"/>
<link rel="apple-touch-icon" sizes="114x114" href="/apple-touch-
icon-114x114.png"/>
```

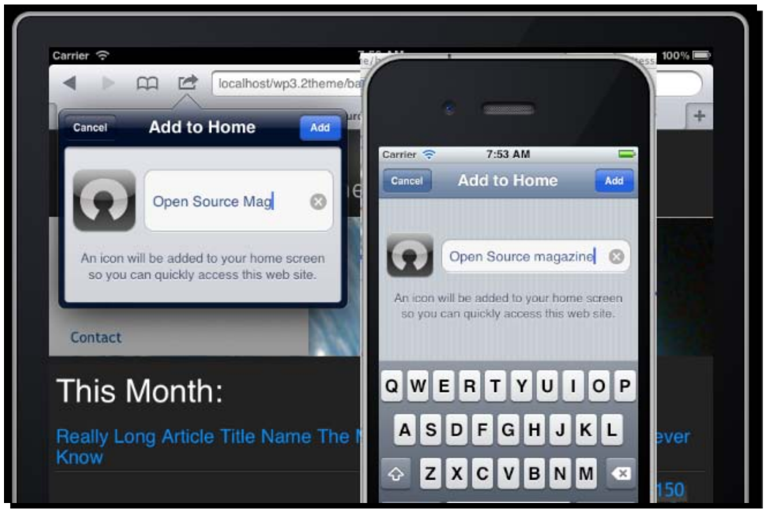
3. Save your `index.html` file.

## *What just happened?*

We added a few lines of code to fetch our touch icon to `index.php`. You'll notice that we included three file sizes:

- The 57 x 57 pixel icon is what older iOS devices and Android devices will load in
- The 114 x 114 pixel icon is for high-resolution Retina displays
- The 72 x 72 pixel icon is for iPads

The icons become available when you save pages as web clips to the home screen like so:


Carrier
100%
localhost/wp3.2theme/ba
Cancel
Add to Home
Add
Open Source Mag
An icon will be added to your home screen so you can quickly access this web site.
Contact
This Month:
Really Long Article Title Name The
Know
Carrier
7:53 AM
Cancel
Add to Home
Add
Open Source magazine
An icon will be added to your home screen so you can quickly access this web site.
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M

## Pop quiz – questions about theme design

Q1. What things should you take into consideration when planning your theme?

1. What type of site or blog your theme will be for?
2. How many layouts or "views" your theme will have?
3. What plugins or widgets will it support?
4. All of the above.

Q2. What does sketching your theme design accomplish?

1. It helps you add CSS classes to layout elements.
2. It helps you see what colors you will be using in your design.
3. It helps you write better code.
4. It helps you see your design quickly and start considering usability and content.

Q3. How much sample text should you start with?

1. Lots – it helps you see what your design will look like when lots of content is added.
2. As little as possible – to avoid distraction from the design.

## Summary

You have now learned the key theme design considerations to make when planning a WordPress theme. We've walked through the basics of creating a functional mockup of our theme design in the browser, with the following features:

- Use of HTML5 semantic elements
- CSS3 for gradients, shadows, and so on, to save on loading images
- Font styling and sizing
- A color scheme
- Some graphic image treatments using background images
- A favicon and touch icon

Now that we can see and even get a sense of the user experience of our mockup, the next step is coding it up into a fully working WordPress theme, which is the topic of our next chapter.

# 3
# Coding it Up

*As we have our HTML and CSS in place, the next step is to turn it into a working WordPress theme. This involves copying our code into WordPress template files and adding some special code, which WordPress uses to display content. This is what we'll do in this chapter.*

In this chapter, you'll learn how to:

- Turn your HTML files into PHP files for WordPress
- Split your PHP into a number of template files, which split the code up into manageable chunks WordPress can work with
- Use the correct template files to display different kinds of content
- Incorporate WordPress-specific PHP code, such as template tags and API hooks, into the theme's template pages to create our functional theme

When we're done with this chapter, we'll be ready to move on to adding more advanced features to our theme in the next chapter!

## WordPress theme basics

To get started, you should already have an installation of WordPress to work with. If you don't, please return to *Chapter 1*, *Getting Started as a WordPress Theme Designer,* to read up on the best solution for setting up a sandbox installation of WordPress that you can build your themes in.

By now you've gotten the point that a WordPress theme essentially contains the HTML and CSS that hold and style your WordPress content. WordPress themes are put together by leveraging the WordPress Template hierarchy and the theme API (Application, Programming Interface). The theme API is basically just WordPress-specific PHP code, which enables us to create and customize the loop as well as leverage various template tags and hooks in our theme.

## The Template hierarchy

We've discussed the fact that a WordPress theme is comprised of many file types including template pages. Template pages have a structure or hierarchy to them. That means if one template page type is not present, then the WordPress system will call up the next available template page type.

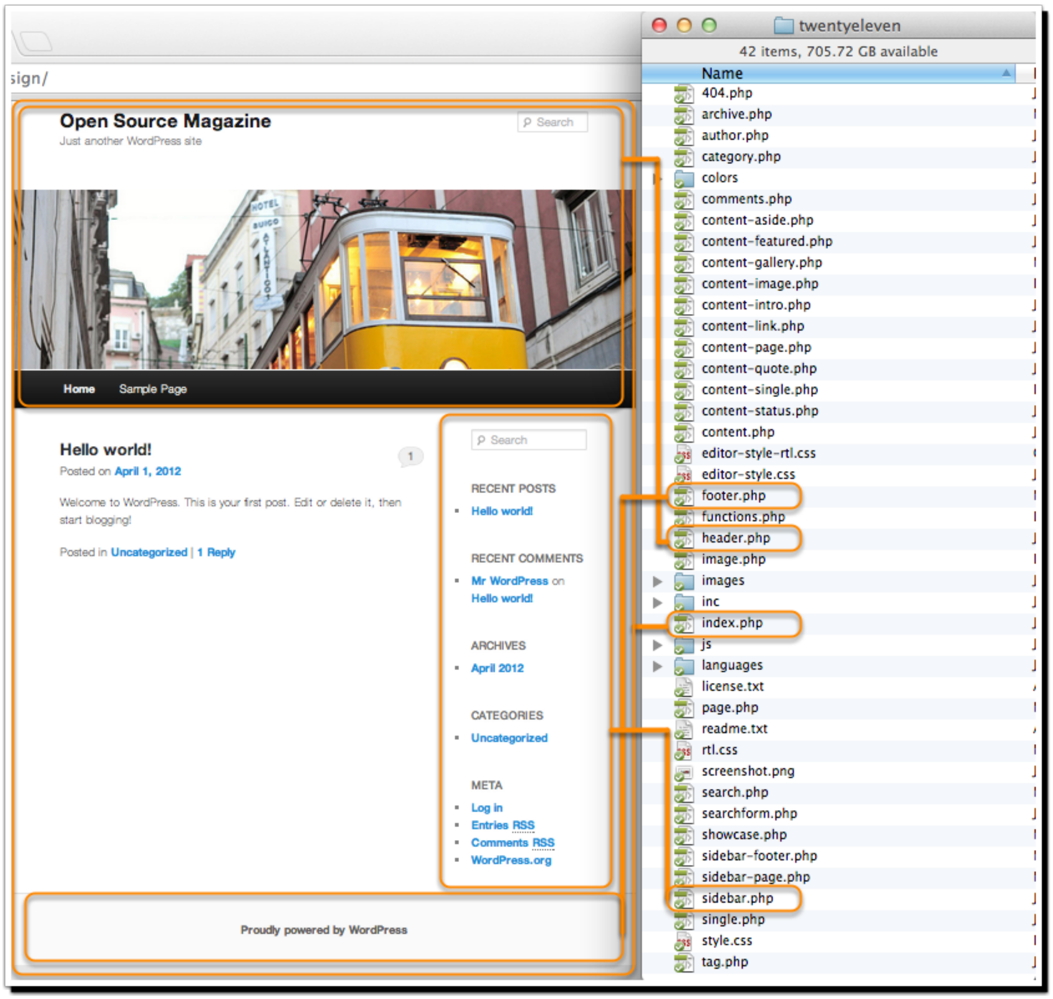
This allows developers to create themes that are fantastically detailed and take full advantage of all of the WordPress hierarchy's available template page types. It is also possible to have a fully functioning WordPress theme that consists of nothing more than a single `index.php` file, but it's not necessarily good practice!

In addition to these template files, themes of course also include image files, CSS stylesheets, custom template pages, and PHP code files. Essentially, you can have many different default page templates in your WordPress theme, not including your `style.css` sheet or `include` template files. You can have way more template pages than that, if you take advantage of WordPress' capability for individual custom post, page, category, and tag templates.

> An `include` is a template file, which is called from the main files (such as `index.php`)—in other words, they are included in a page using an include template tag. Examples of includes are `header.php`, `sidebar.php`, `footer.php`, and `searchform.php`. We'll work on these later in this chapter.

Your theme does need to have the appropriate WordPress PHP code placed into it in order for the content that is entered into the Administration panel to materialize on your site. To help you organize and maintain that special WordPress PHP code, it helps if your theme is broken down into some of these various template files, which make your theme easier to maintain with less confusion.

The following screenshot illustrates how a theme's template files contribute to the final rendered page that a user sees in the browser:



```
twentyeleven
42 items, 705.72 GB available
Name
404.php
archive.php
author.php
category.php
colors
comments.php
content-aside.php
content-featured.php
content-gallery.php
content-image.php
content-intro.php
content-link.php
content-page.php
content-quote.php
content-single.php
content-status.php
content.php
editor-style-rtl.css
editor-style.css
footer.php
functions.php
header.php
image.php
images
inc
index.php
js
languages
license.txt
page.php
readme.txt
rtl.css
screenshot.png
search.php
searchform.php
showcase.php
sidebar-footer.php
sidebar-page.php
sidebar.php
single.php
style.css
tag.php
```

The next list contains the general template hierarchy rules. As we've mentioned, the absolute simplest theme you can have must contain an `index.php` page. If no other specific template pages exist, then `index.php` is the default.

You can then begin expanding your theme by adding the following files:

For static pages:

- `page.php` trumps `index.php` when looking at a static page
- `home.php` trumps `index.php` and `page.php` when the main blog post listing is viewed
- `front-page.php` trumps `index.php` and `home.php` when the front page is being viewed, whether that's a static page or the blog post listing
- A custom template page-slug or page-ID page, such as `page-about.php`, when selected through the page's Administration panel, trumps `index.php` and `page.php`

For individual posts and attachments:

- `single.php` trumps `index.php` when an individual post or attachment is viewed.
- `single-post_type.php` trumps `single.php` when used with a custom post type. For example, if you were using a post type of product, you would set up a template file called `single-product.php` for viewing individual product details. This can be useful if you want to display different metadata or have a different layout for custom post types.
- `single-attachment.php` trumps `single.php` when an attachment is viewed. In turn, `attachment.php` trumps `single-attachment.php`
- A custom `MIME_type` page trumps `attachment.php` when attachments of a given `MIME_type` are viewed. For example you could use `image.php` or `video.php` for displaying each of these types of attachment.

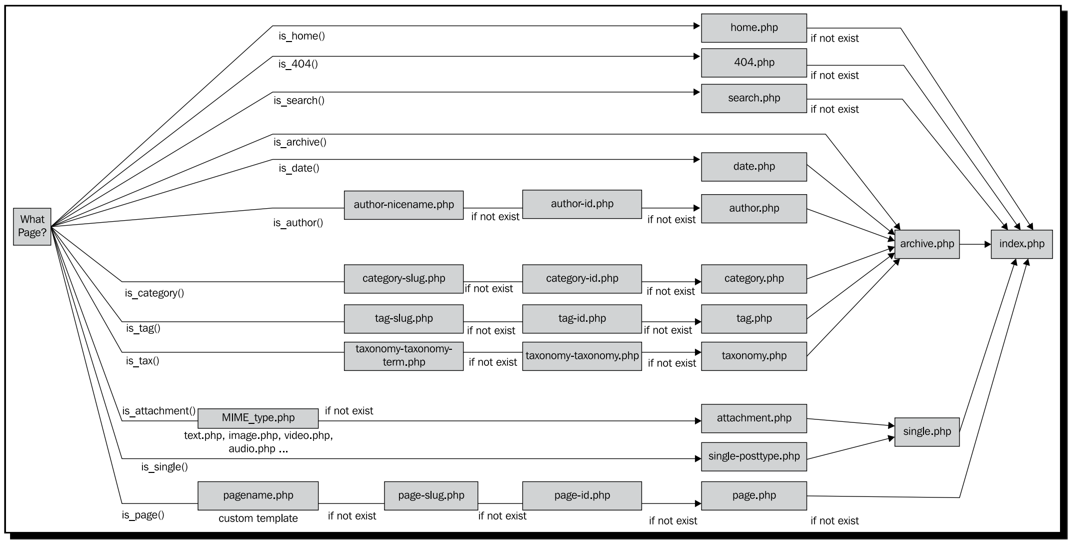
For archives which list posts or search results:

- `archive.php` trumps `index.php` when a category, tag, date, or author listing is viewed.
- `search.php` trumps `index.php` when the results from a search are viewed.
- `category.php` trumps `archive.php` when a category listing is viewed.
- `taxonomy.php`  trumps archive.php when a taxonomy listing is viewed.
- A custom category-ID page trumps `category.php`. To set up a category listing page you can either use the category ID (which would give you a `category-12.php` filename, for example), or you can use the category's slug (which would give you an example filename of `category-featured.php`).
- `tag.php` trumps `archive.php` when a tag listing is viewed.
- A custom `tag-tagname` page, such as `tag-reviews.php,` trumps `tag.php`.

- `author.php` trumps `archive.php` when a list of posts by an author is viewed.
- `date.php` trumps `archive.php` when a list of posts for a given date is viewed.

And finally, when the server can't find the page or post:

- `404.php` trumps everything else when the URL address finds no existing content. You can use this to display some custom content for 404 pages, such as an error message and search box.



Pages, posts, attachments, and custom post types are the different kinds of content that you create in WordPress:

A **page** is a static page which isn't included in listings. For example, you might have a static About page, or if your site isn't a blog, a static Home page. You can tell WordPress whether to display a static Home page or a list of posts—we'll come to that later in this chapter.

A **post** is a blog post or news article. Depending on the kind of site you're developing, you might use these for most of your content or you might not use them at all.

An **attachment** is a file you upload via the WordPress Media admin screen. WordPress uses attachment pages to display media such as images, pdf files, and videos.

A **custom post type** is a different kind of post from your blog or news posts. For example, if you're developing a site for a business wanting to showcase its products, you might create a products custom post type. These wouldn't show up in the blog, but would have their own listings pages. We'll look at how to set these up in *Chapter 4*, *Advanced Theme Features*.

## Why the Template hierarchy works the way it does

In a nutshell, WordPress does this for powerful flexibility. If your theme design is simple and straightforward enough (that is, you're sure you want all your loops, posts, and pages to look and work exactly the same), as mentioned, you can technically just dump everything into a single `index.php` file that contains all the code for the header, footer, sidebar, and plugin elements!

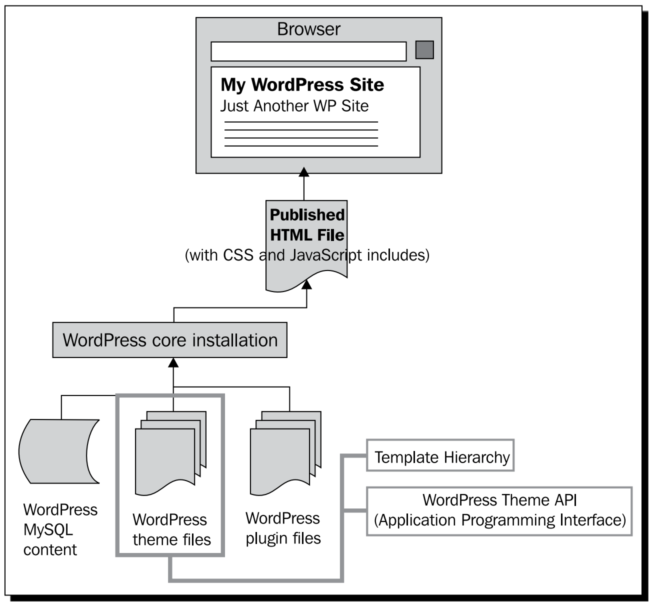
However, as your own theme developing skills progress (and as you'll see with the theme we build in this book), you'll find that breaking the theme apart into individual template files helps you take advantage of the features that WordPress has to offer, which lets you design more robust sites that can easily accommodate many different types of content, layouts, widgets, and plugins.

If all this talk of template files and hierarchies is making your head swim, don't worry! We'll start by creating a simple theme using `index.php`, and then move on to creating more template files as needed.

## The WordPress theme API

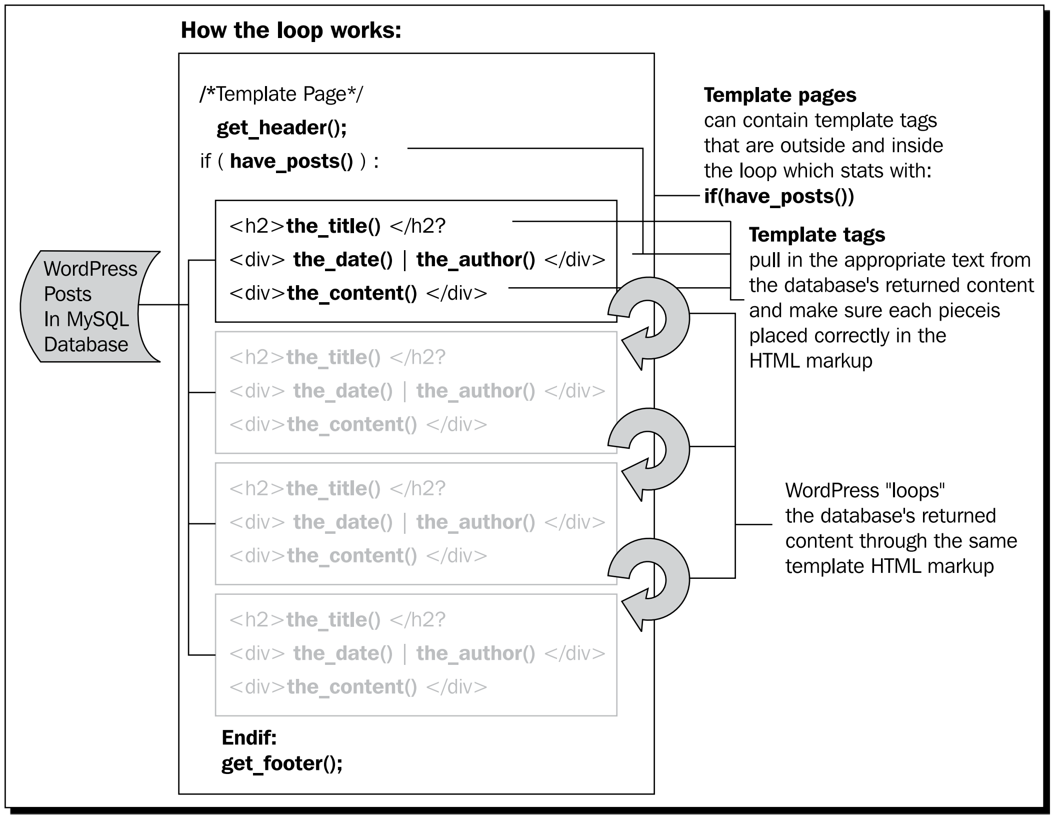
A WordPress site uses PHP code and a MySQL database to keep content, design, and functionality completely separate from each other, enabling us to easily upgrade and enhance them.

To refresh ourselves, the WordPress system works as pictured in the following diagram, which we first saw in *Chapter 1*, *Getting Started as a WordPress Theme Designer*:



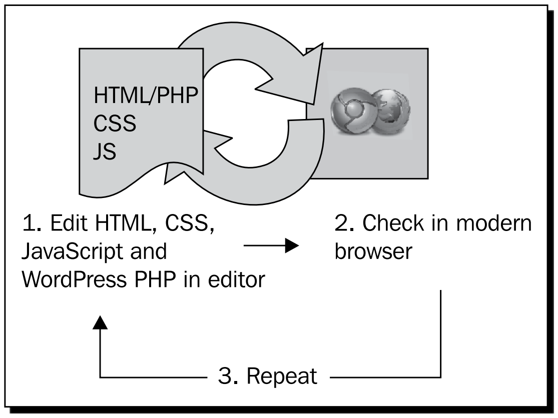
Each file in a WordPress theme contains template tags, which allow us to call in different aspects of our content, such as the title, the post, the author, and so on. On a traditional blog page, we will probably place template tags inside what's called **the loop**—this code will retrieve all the posts associated with the page's call (say, the ten most recent posts if the user is on the blog listing page, or all the posts in a specific category if a category listing is being displayed).

Below is a graphic, which demonstrates how the WordPress Loop works with template tags.


How the loop works:
/*Template Page*/
get_header();
if ( have_posts() ) :
<h2>the_title() </h2?
<div> the_date() | the_author() </div>
<div>the_content() </div>
Endif:
get_footer();
WordPress Posts In MySQL Database
Template pages can contain template tags that are outside and inside the loop which stats with: if(have_posts())
Template tags pull in the appropriate text from the database's returned content and make sure each pieceis placed correctly in the HTML markup
WordPress "loops" the database's returned content through the same template HTML markup

## Setting up your WordPress workflow

Your workflow will pretty much look like the following:


HTML/PHP
CSS
JS
1. Edit HTML, CSS, JavaScript and WordPress PHP in editor
2. Check in modern browser
3. Repeat

You'll be editing CSS and HTML in your HTML editor. After each edit, you'll hit **Save**, then use **Alt** + **Tab**, or the dock, or taskbar to switch over to your browser window. You'll then hit **Refresh** and check the results. Depending on where you are in this process, you might also have two or more browser windows or tabs open with your WordPress theme view and others, with the key WordPress Administration screens that you'll be using.

Whether you're using Dreamweaver or a robust text editor, such as Coda, TextWrangler, or HTML-Kit, all of these let you use FTP to access and update files from within the program if they're stored on a remote server. Be sure to use this built-in FTP feature. It will let you edit and save to the actual theme's template files and stylesheet, without having to stop and copy to your working directory or upload your file with a standalone FTP client.

**Be sure to save regularly and make backups!**

Backups are sometimes more important than just saving. They enable you to roll back to a previously stable version of your theme design, should you find yourself in a position where your HTML and CSS has stopped playing nice. Rather than continuing to mess with your code wondering where you broke it, it's sometimes much more cost effective to roll back to your last good stopping point and try again. You can set your preferences in some editors, such as HTML-Kit, to autosave backups for you in a directory of your choice. However, you know best when you're at a good "Hey, this is great!" spot. When you get to these points, get in the habit of using the **Save a Copy** feature to make backups. Your future-messing-self will love you for it.

## Building your WordPress theme template files

OK! We're ready to start. Open your HTML editor program and set it up to display your FTP or local working directory in a files panel, giving you access to your WordPress installation files. Also, have a couple of browser windows open with your WordPress home page loaded into one, as well as the WordPress Administration panel available in another.

### Starting with a blank slate

The approach we'll use here includes the following steps (we'll go over each step in detail):

1. Create a new, empty theme directory (but don't delete the default theme—leave that safely where it is).
2. Upload your mockup's image directory as well as your `index.html` and `style.css` mockup files to the directory.
3. Add some commented-out code to your stylesheet for WordPress to work with.
4. Rename your `index.html` file to `index.php`.
5. Add the WordPress template tag PHP code, specifically the `blog_info` tag and the loop, to your design so that your stylesheet styles and some WordPress content shows up.
6. Once your theme's WordPress content is loading in and your HTML and CSS still work and look correctly, then you can pull it apart into your theme's corresponding template files, such as `header.php`, `footer.php`, `sidebar.php` and so on.
7. Once your theme design is separated out into logical template files, you can begin finalizing any special display requirements your theme has, such as a different home page layout, internal page layouts, and extra features using template tags and API hooks, so your theme works with plugins. That will be a job for a later chapter.

The other advantage to this approach is that if any part of your theme starts to break, you can narrow it down to WordPress PHP code that wasn't copied into its own template file correctly. You'll always have your backup files to return to if anything goes wrong.

#### Creating a new theme directory

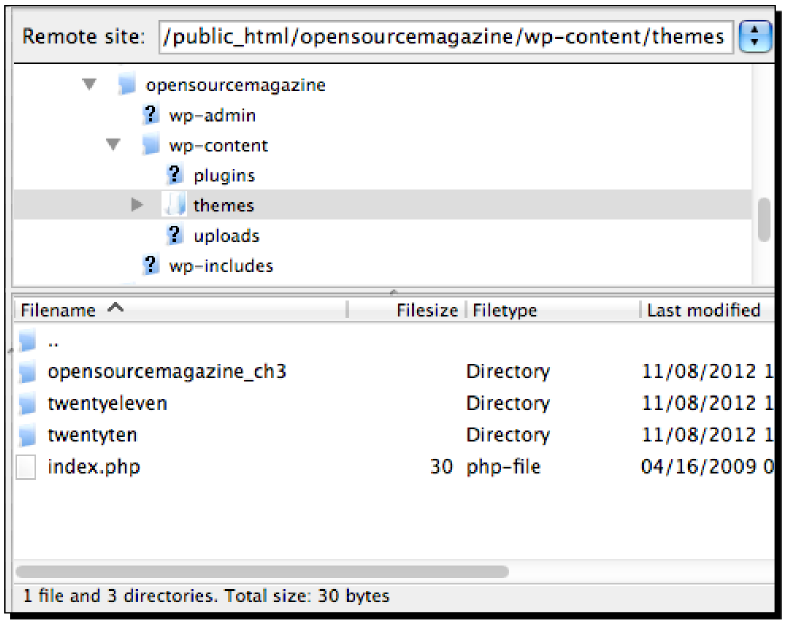
To get started, we'll create a copy of the existing default theme. We'll be using a development installation of WordPress 3.4.2 on a remote server, and using TextWrangler with its inbuilt FTP capability to edit the code. If you prefer, you can work on a local installation of WordPress.

## Time for action – setting up our theme directory

The first step is to create a directory to contain our theme.

1. Create a new directory that has a completely unique name that best suits your project. This needs to go in the `wp-content/themes/` directory. You can see the theme folders for our theme in the illustration below, which is taken from the FTP client FileZilla.

> We've given the theme directory a name of `opensourcemagazine_ch3`, as we'll be saving a version of the theme for each chapter to capture our progress. We'll also add the chapter number to the Theme Name in the stylesheet and save it into the code packs so you can work along and see the progress of the theme as you move through the book. This also helps us see in the WordPress Theme Manager screen what theme to select to work on. You'll just name your theme whatever you'd like it to appear as in the Theme Manager screen.


Remote site: /public_html/opensourcemagazine/wp-content/themes

```
opensourcemagazine
  wp-admin
  wp-content
    plugins
    themes
    uploads
  wp-includes
```

| Filename | Filesize | Filetype | Last modified |
|---|---|---|---|
| .. | | | |
| opensourcemagazine_ch3 | | Directory | 11/08/2012 1 |
| twentyeleven | | Directory | 11/08/2012 1 |
| twentyten | | Directory | 11/08/2012 1 |
| index.php | 30 | php-file | 04/16/2009 0 |

1 file and 3 directories. Total size: 30 bytes

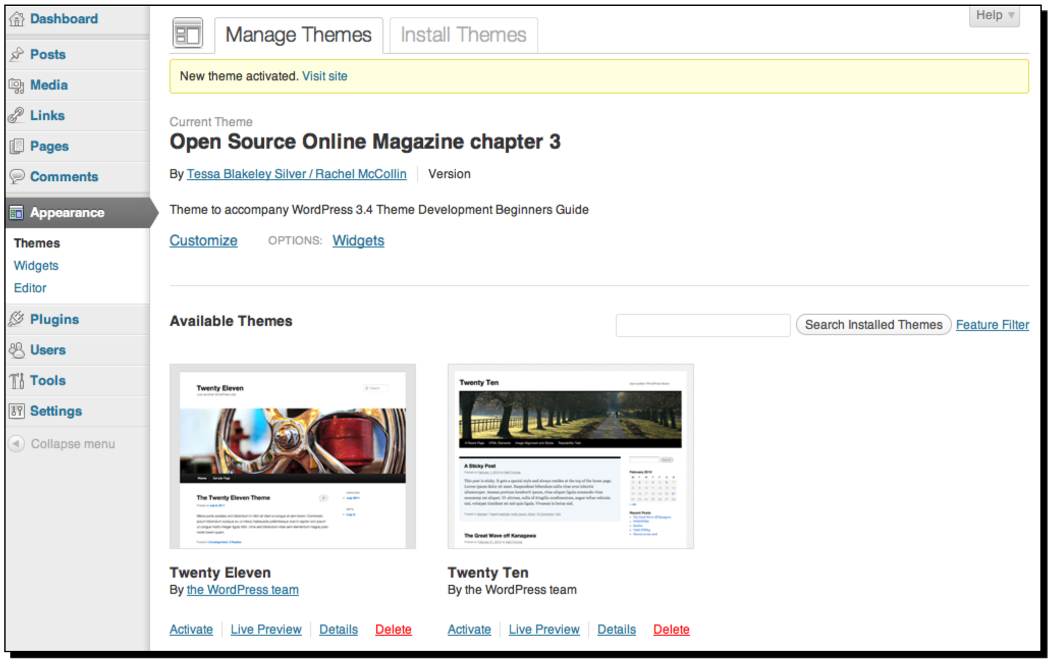
2. Copy your HTML/CSS mockup files and the image directory into this new directory.
3. Rename your `index.html` file as `index.php`. Again, because WordPress template files follow the template hierarchy, that hierarchy looks first for all sorts of other template page types, but will always settle for the `index.php` page if none of the others exist. Leaving the page as `.html`, or attempting to name it anything else at this point, will result in your template not working correctly.

4. Open the `style.css` file and add the following at the very top, above any other code:

```
/*
Theme Name: Open Source Online Magazine chapter 3
Theme URI: http://rachelmccollin.co.uk/opensourcemagazine
Author: Tessa Blakeley Silver / Rachel McCollin
Author URI:
Description: Theme to accompany WordPress 3.4 Theme Development
Beginners Guide
Version:
Tags:
*/
```

   The details of what you add will be different for your theme—you'll need to replace our theme name, URI, author, and description with your own and add more information as relevant.

5. Save your stylesheet.
6. Now, in WordPress, go to **Appearance** | **Themes**. There, you'll be able to select and **Activate** the new theme you just created. (Note that our theme doesn't have a thumbnail image, which would be displayed in the Administration panel **Dashboard**, as we haven't created one.)



New theme activated. Visit site

Current Theme
**Open Source Online Magazine chapter 3**
By Tessa Blakeley Silver / Rachel McCollin | Version
Theme to accompany WordPress 3.4 Theme Development Beginners Guide

**Available Themes**

Twenty Eleven
By the WordPress team

Twenty Ten
By the WordPress team

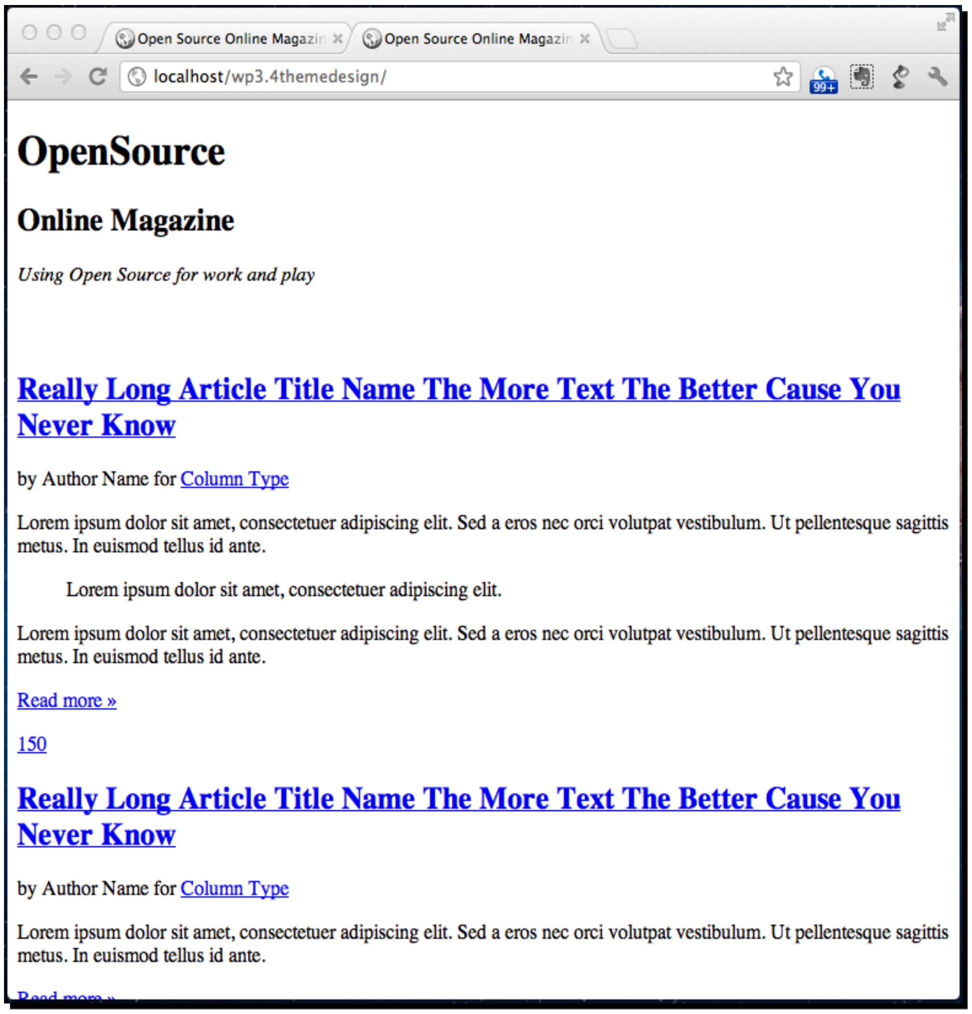
## What just happened?

We created a new theme folder and uploaded our code to it.

By making sure the properly formatted WordPress information was at the top of the stylesheet, we were able to see the new folder and files we created as a theme in the Administration panel's Theme Manager and select it.

## Including WordPress content

When you point your browser to your WordPress installation, you should see your mockup's unstyled HTML as shown in the following screenshot:


Open Source Online Magazin
Open Source Online Magazin
localhost/wp3.4themedesign/

OpenSource

Online Magazine

*Using Open Source for work and play*

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

150

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

The next step is to attach the stylesheet to the `index.php` page so that WordPress reads your styles.

To get the `index.php` page to read your `style.css` page, we need to find the call to the stylesheet in the `index.php` file. This will take one of the following two forms:

```
<link rel="stylesheet" href="[stylesheet name]">
```

or

```
<style>@import "[stylesheet name]"</style>
```

## Time for action – getting your CSS styles to show up

The first of the two options discussed previously is better practice, and is what we're using in our stylesheet.

1. First, find the call to the stylesheet—in our theme it's as follows:

   ```
   <link media="all" rel="stylesheet" type="text/css"
   href="style.css" />
   ```

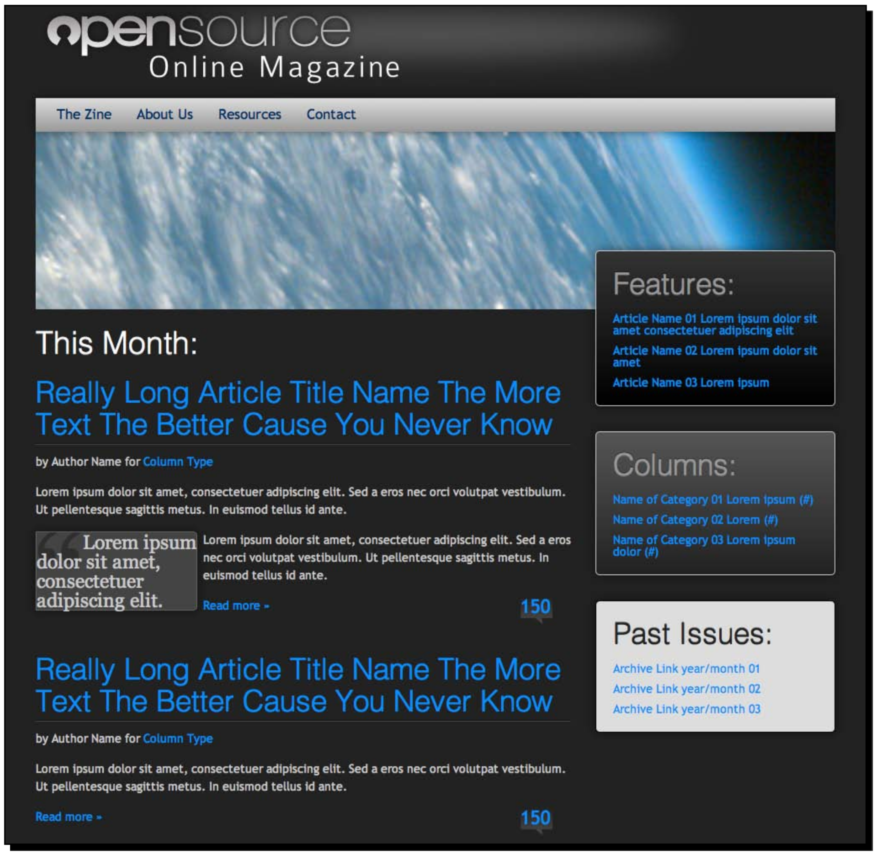
   As you can see, we've also specified a few extra parameters for our stylesheet.

2. Replace the `href` attribute with following WordPress template tag: bloginfo('stylesheet_url') like so:

   ```
   <link media="all" rel="stylesheet" type="text/css" href="<?php
   bloginfo('stylesheet_url'); ?>" />
   ```

## *What just happened?*

Congratulations! That's your first bit of WordPress code! It's a template tag called `bloginfo()` that can actually be passed several parameters, as we'll discover throughout this book. You should now see your styled mockup, when you point your browser at your WordPress installation:



This Month:

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

"Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Really Long Article Title Name The More Text The Better Cause You Never Know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

## Understanding WordPress template tags and hooks

In the upcoming sections, we'll run into many more template tags and a few API hooks that will help our template play well with plugins. Let's go over the basics of template tags and hooks.

### Template tags

Template tags are most commonly used in templates to help you retrieve, and most importantly display information from your WordPress CMS into your theme design. If you delve more deeply into WordPress development, you'll find that most template tags have a similar function in the WordPress system. The difference between the template tag and its corresponding function is that template tags have a `return` built in to them so they'll automatically display the WordPress content. The function will not display the content unless you specifically use a PHP `echo` or `print` command. For example, the template tag which reads:

```
<? php the_author_meta( 'name' );?>
```

would have the same result as the following function:

```
<? php echo get_author_meta( 'name' );?>
```

WordPress functions can also prove useful for when you don't want content to display right away, say for special scripts that you write in your template's `function.php` file, which we'll get into in the next chapter or if you start developing custom plugins to add extra functionality to WordPress.

Some template tags can also be used to include or call in other template files, as we'll see later in this chapter.

The `bloginfo()` template tag is a typical example of a tag that can be passed a parameter. In the previous section, we passed it the `stylesheet_url` parameter, to make sure we targeted our `style.css` page, but in other parts of our template we may wish to pass that template tag the name parameter or the version parameter. It's up to you where and how you might want to use a template tag. For a list of parameters of this tag, see `http://codex.wordpress.org/Function_Reference/bloginfo`.

### Hooks

Hooks are part of the plugin API and are mostly used by WordPress plugin developers to access and manipulate WordPress CMS data, then serve it up or activate at certain points in the theme, for that theme's use. Your theme does need some preparation in order to work with most plugins.

Hooks include **action hooks**, which are used for adding content or functions, and **filter hooks**, which are used to manipulate the way data is output. You don't need to worry about the difference between these for now.

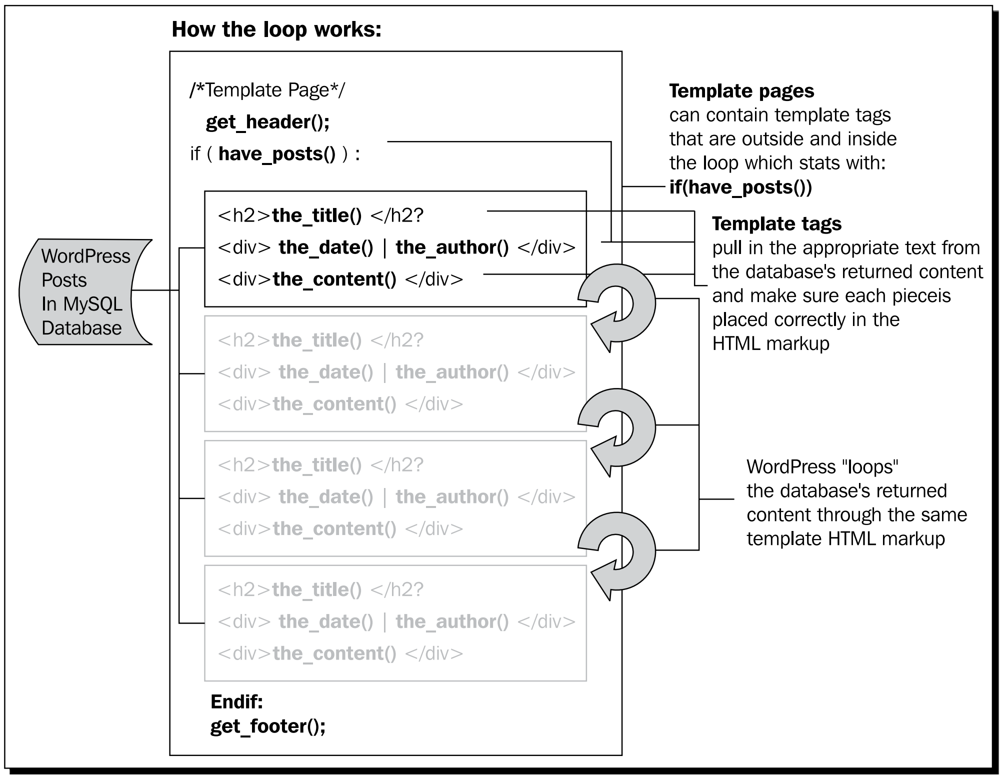
The most important hook we'll work with is the `wp_head()` hook. This allows plugins to activate and write information in your WordPress theme's header files, such as CSS links to any special CSS the plugin might need or JavaScript files the plugin might use to enhance your site. We'll take a look at a few other hooks later in this book that will enhance our theme and make sure it's plugin-ready.

## Looping it! – The WordPress Loop

After the `bloginfo` template tag, the next (and probably the most important) bit of WordPress code to add to our theme is the Loop. The Loop is an essential part of your WordPress theme. It displays your posts in chronological order and lets you define custom display properties with various WordPress template tags and queries wrapped in your HTML markup.

### The Loop in a nutshell – how it works

The following illustration shows how the Loop is constructed, and how it pulls in posts from the WordPress database to construct the post content of a site:



How the loop works:
/*Template Page*/
get_header();
if ( have_posts() ) :
<h2>the_title() </h2?
<div> the_date() | the_author() </div>
<div>the_content() </div>
<h2>the_title() </h2?
<div> the_date() | the_author() </div>
<div>the_content() </div>
<h2>the_title() </h2?
<div> the_date() | the_author() </div>
<div>the_content() </div>
<h2>the_title() </h2?
<div> the_date() | the_author() </div>
<div>the_content() </div>
Endif:
get_footer();
WordPress Posts In MySQL Database
Template pages can contain template tags that are outside and inside the loop which stats with: if(have_posts())
Template tags pull in the appropriate text from the database's returned content and make sure each pieceis placed correctly in the HTML markup
WordPress "loops" the database's returned content through the same template HTML markup

**Really get to know the Loop**

The Loop is one of those core pieces of WordPress PHP code you should brush up on. Understanding how the Loop works in WordPress is incredibly helpful in letting you achieve any special requirements or effects of a custom professional template. To find out more about The Loop, its uses in the main index file and other template files, and how to customize it, check out the following links on the WordPress codex:

`http://codex.wordpress.org/The_Loop_in_Action`

`http://codex.wordpress.org/The_Loop`

## Time for action – creating a basic Loop

We'll start by placing the following loop code into the widest column under the **This Month** header, overwriting the sample content. This code is the Loop at its most basic. As we'll see, it will need some tweaking later on to be in line with our theme design.

1. Find the code for the first sample article in the mockup:

```
<article class="post">
  <h2><a href="#">Really Long Article Title Name The More Text
The Better Cause You Never Know</a></h2>
  <p class="entry-meta">by Author Name for <a href="#">Column
Type</a></p>
  <div class="entry-content"><!--//post-->
    <p>Lorem ipsum dolor sit amet, consectetuer adipiscing
elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque
sagittis metus. In euismod tellus id ante.</p>
    <blockquote class="left margin-right third bg-dark2 img-
quote-dark bdr rnd rnd-right shdw-centered">Lorem ipsum dolor
sit amet, consectetuer adipiscing elit.</blockquote>
    <p>Lorem ipsum dolor sit amet, consectetuer adipiscing
elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque
sagittis metus. In euismod tellus id ante.</p>
  </div><!--//.entry-content-->
  <p class="left"><a class="more" href="#">Read more
&raquo;</a></p>
  <p class="right"><a class="comments-count"
href="#">150</a></p>
  <div class="push"></div>
</article>
```

In our mockup, this code appears more than once; so, we start by deleting all but the first example of it.

2. Now, working with the code you've left in and above the opening `<article>` tag, add the code to start the Loop:

   ```
   <?php if (have_posts()) :?>
     <?php while (have_posts()) : the_post();?>
   ```

   Next, add the code to display the title of the post in place of our old static heading:

   ```
   <h2 class=""><a href="<?php the_permalink() ?>" rel="bookmark"
   title="Permanent Link to <?php the_title_attribute(); ?>"><?php
   the_title();?></a></h2>
   ```

3. Add the code which will display the content for the article. This goes inside `<div class="entry-content">`, and replaces any static text (paragraphs and blockquotes) we had in there before:

   ```
   <?php the_content();?>
   ```

4. Under the content, where we have a `Read more` link, replace the existing code with:

   ```
   <p class="left"><a class="more" href="<?php the_permalink()
   ?>">Read more &raquo;</a></p>
   ```

5. The Loop won't work unless you close it, so below your closing `</article>` tag, add the following:

   ```
   <?php endwhile; ?>
   <?php else : ?>
          <h2 class="center">Not Found</h2>
          <p class="center">Sorry, but you are looking for
   something that isn't here.</p>
          <?php get_search_form(); ?>
   <?php endif; ?>
   ```

6. Now save your `index.php` file, open your site in your browser and refresh the screen.

## What just happened?

You've just completed a major step towards developing your WordPress theme, namely allowing WordPress to display posts on a page. Well done! Let's work through the code:

```
<?php if (have_posts()) :?>
  <?php while (have_posts()) : the_post();?>
  <article class="post">
    <h2>a href="<?php the_permalink() ?>" rel="bookmark"
title="Permanent Link to <?php the_title_attribute(); ?>"><?php
the_title();?></a></h2>
```

```
    <p class="entry-meta">by Author Name for <a href="#">Column
Type</a></p>
    <div class="entry-content"><!--//post-->
      <?php the_content();?>
    </div><!--//.entry-content-->
    <p class="left"><a class="more" href="<?php the_permalink()
?>">Read more &raquo;</a></p>
    <p class="right"><a class="comments-count" href="#">150</a></p>
    <div class="push"></div>
  </article>
<?php endwhile; ?>
<?php else : ?>
       <h2 class="center">Not Found</h2>
       <p class="center">Sorry, but you are looking for something
that isn't here.</p>
       <?php get_search_form(); ?>
<?php endif; ?>
```

- The first two lines open the Loop by checking if there are posts to display, and then if that is the case, start to work with the first post.
- The code we added to the `<h2>` tag displays the post title using `<?php the_title();?>` and creates a link using the tag `<?php the_permalink() ?>`. This means that when users click on the title, they'll be taken to a page displaying that post on its own—the `permalink` is the url for that post.
- Inside our `entry-content` div, we used `<?php the_content;?>` to display the content of the post.
- Our `Read more` link uses `<?php the_permalink() ?>` to link to the full post.
- We stopped displaying posts with the code `<?php endwhile; ?>`.
- Before ending the Loop completely, we added some text to display if no posts were found, along with a search form, called using the tag `get_search_form`.
- Finally, we closed the Loop with `<?php endif; ?>`.

You must include the code to close the Loop, or it won't display anything. The Loop has to have the following lines in the appropriate places to work:

```
<?php if (have_posts()) :?>
<?php while (have_posts()) : the_post();?>
<?php endwhile; ?>
<?php endif; ?>
```

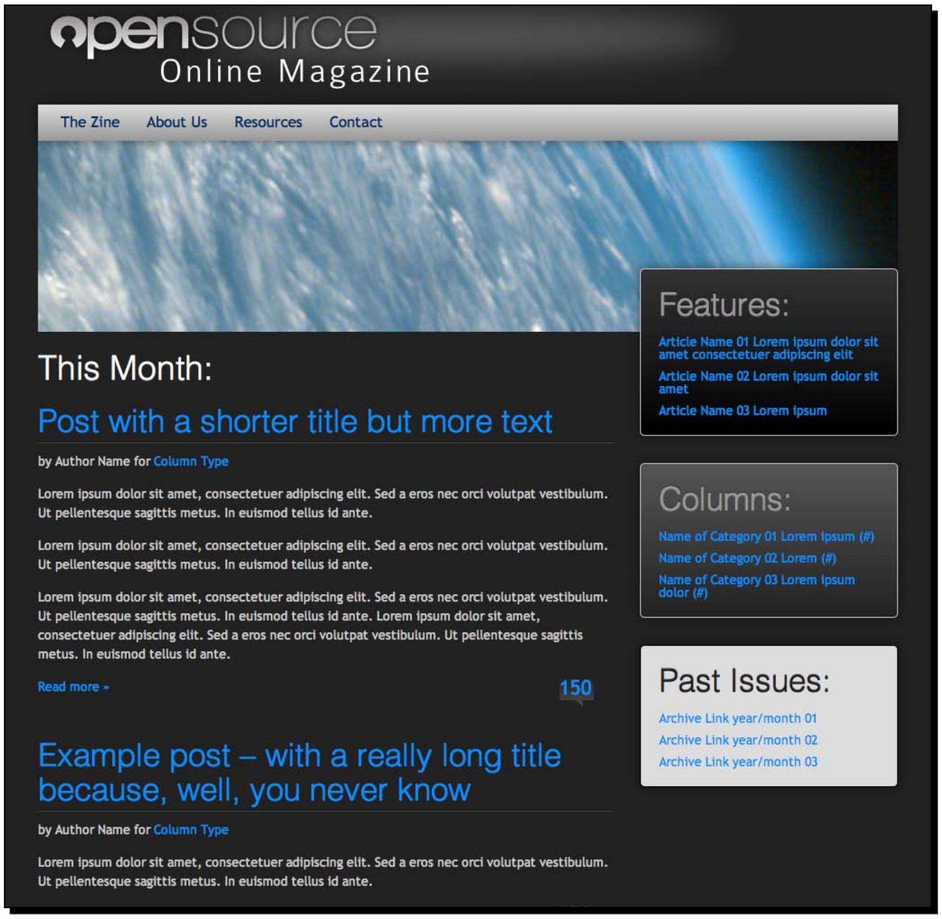
## Time for action – adding content

We've added the code for the Loop to display content in our site, but it doesn't actually have any content to display yet!

1. In the WordPress admin, clik on **Add New** in the **Posts** menu.
2. Copy in the text from the first post in our original HTML file.
3. Click on **Publish** to save your post.
4. Repeat steps 1-3 for the other posts in our mockup.

## What just happened?

We added some content to display on the front page of our site. So, does WordPress display our posts when we refresh the screen? You bet it does!



This Month:

Post with a shorter title but more text

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

150

Example post – with a really long title because, well, you never know

by Author Name for Column Type

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit

Article Name 02 Lorem ipsum dolor sit amet

Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)

Name of Category 02 Lorem (#)

Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01

Archive Link year/month 02

Archive Link year/month 03

## Time for action – adding metadata, the timestamp, and author template tags

In our mockup, we have included some metadata—information about each post being displayed. Specifically, we've included the author's name and the column the article is featured in. In WordPress, what a magazine editor might call a column is referred to as a **category**. To add these, we do the following:

Inside the Loop below the `<h2>` tag, add the following in place of the existing `<p>` tag and its contents:

```
<p class="entry-meta">by <?php the_author_meta('first_name'); ?>
<?php the_author_meta('last_name'); ?> in <?php the_category(", ")
?></p>
```

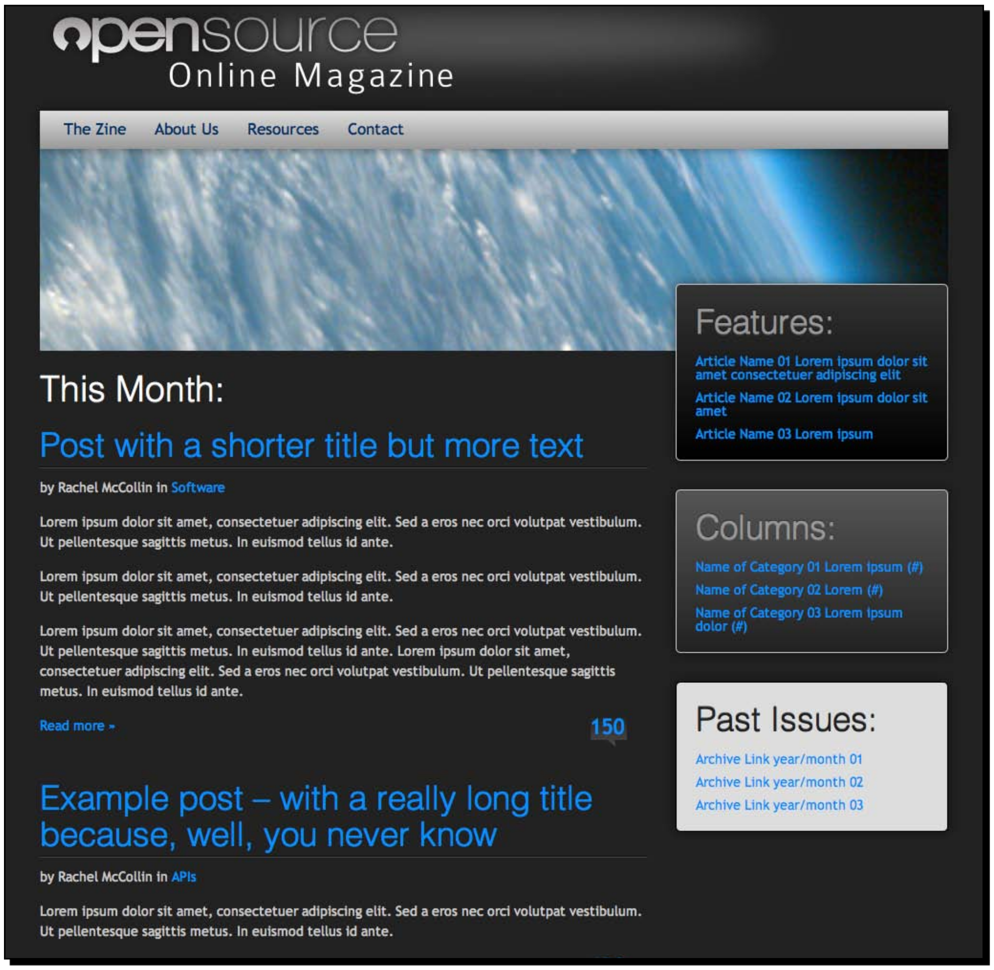
Save `index.php` and refresh your browser.

## *What just happened?*

We added two template tags to display metadata about the post:

- `<?php the_author_meta('first_name'); ?>` displays the author's first name and, unsurprisingly, `<?php the_author_meta('last_name'); ?>` displays the author's last name
- `<?php the_category(", ") ?>` displays a list of categories assigned to the post, with a comma in between each listing

When we refresh the browser, the metadata is now displayed:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

150

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum

Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)

Archive Link year/month 01
Archive Link year/month 02
Archive Link year/month 03

**Help! It's not showing what I expected it to!**

If your page isn't showing the name of the author or it's displaying **Uncategorized** instead of a list of categories, don't worry.

The author name probably isn't displaying, because you haven't added your full name to your user profile. Go to **Users** | **Your Profile** in the WordPress admin and add your first and last name, remembering to save your changes.

If a list of categories isn't being displayed, that's simply because you haven't assigned any categories to your post(s). In the post editing screen, assign a category or create one.

### Keeping up-to-date with WordPress

In older versions of WordPress you could use `the_author_firstname` and `the_author_lastname` template tags. While those tags still work in version 3.4.2, they have been deprecated and the `the_author_meta` template tag has been introduced.

This meta tag offers more flexibility than the previous template tags, by allowing the theme to take advantage of all the user registration information with a single tag, as well as any additional information a custom plugin may add to the user registration database table. For a list of parameters you can send to this template tag, see `https://codex.wordpress.org/Function_Reference/the_author_meta`.

## Adding to the Loop

Because this is the web and not a paper magazine, there are WordPress features we should take advantage of. We want to take advantage of having people's comments and ideas on the article to help keep it fresh. So, we'll show how many comments have been added to the post.

For now, we'll just display the number of comments for the post instead of displaying all of those comments. In the next chapter, we'll edit the `single.php` file to display comments when a user is viewing the individual post. For the time being, we'll show how many comments there are and include a link, so that if the user clicks on the number of comments, he or she is taken to the post's individual page.

## Time for action – displaying the number of comments

So let's do it!

1. Find the code that reads:

```
<p class="right"><a class="comments-count" href="#">850</a></p>
```

2. Replace it with:

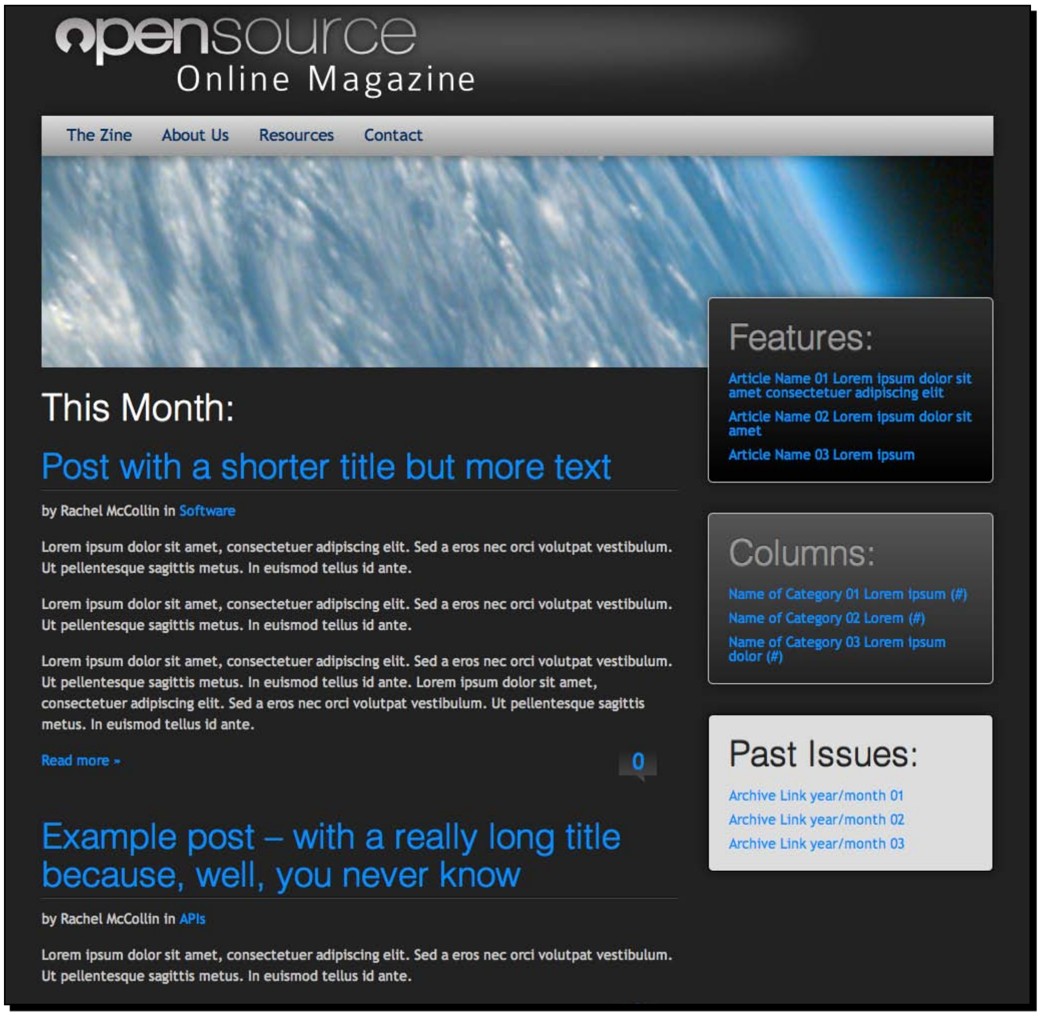
```
<p class='right'><a class='comments-count' href='<?php
the_permalink() ?>'><?php comments_number('0', '1', '%')
?></a></p>
```

3. Save `index.php` and refresh your browser.

### *What just happened?*

We added the `comments_number` tag to display a count of the comments for each post, and used `<?php the_permalink(); ?>` to add a link to the individual post, when the user clicks on the number of comments.

The result now looks like this:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

0

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit

Article Name 02 Lorem ipsum dolor sit amet

Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)

Name of Category 02 Lorem (#)

Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01

Archive Link year/month 02

Archive Link year/month 03

Even though we had most of these text elements handled in our mockup, we're now seeing what's available via the WordPress template tags. Using these tags means, we can pull in content automatically from the database, making full use of WordPress' CMS capabilities.

**Beyond the Loop: WP_Query and template tags**

Once you get to rummaging around in your loop (or loops, if you create custom ones for other template pages), you'll quickly see that the default theme's template tags are a bit limiting. There are thousands of custom template tags you can call and reference within the Loop (and outside of it) to display the WordPress content. In *Chapter 4*, *Advanced Theme Features*, we'll customize our theme with advanced features using the WP Query function. *Chapter 6*, *Your Theme in Action*, will have a template tag and WP_Query reference and you can also check out the following links to find out what template tags are available:

`http://codex.wordpress.org/Template_Tags`

`http://codex.wordpress.org/Function_Reference/WP_Query`

The final touch to our loop is to add some automatically generated classes, which will help us if we want to use different styling for different areas of the site at a later stage. This also applies to parts of the page outside the Loop.

## Time for action – adding in autogenerated classes

To add in some WordPress classes, make the following changes to `index.php`:

1. Edit the `<body>` tag to remove any existing classes, and add a new template tag so it reads:

   ```
   <body <?php body_class($class); ?>>
   ```

2. Edit the `<article>` tag in your Loop, again removing any existing classes, so it reads:

   ```
   <article <?php post_class(); ?> id="post-<?php the_ID(); ?>">
   ```

3. Still in the Loop, find the `<h2>` tag that displays the post title and add `class="post-title"` to it so it reads:

   ```
   <h2 class="post-title"><a href="<?php the_permalink(); ?>"
   rel="bookmark" title="Permanent Link to <?php
   the_title_attribute(); ?>"><?php the_title(); ?></a></h2>
   ```

4. Finally, save your file and make any adjustments to your CSS; you might have to to apply it to the new classes instead of any old ones you were using. For example, if you've used a class for styling your `<body>` tag, you may need to apply that styling to the `<body>` tag itself, or to `body.home` if it just applies to the home page. As we'll see in a moment, WordPress now automatically adds a class of home to the home page's `<body>` tag.

## What just happened?

We added some functions to automatically give our content classes based on what the content is and where it's being displayed.

- `<?php body_class($class); ?>` will give the `<body>` tag of each page a set of classes according to what kind of content is being viewed. For example:
    - `home` when the home page is being displayed
    - `blog` when the main blog listing is being displayed (which may or may not be the home page)
    - `single-post` when a single post is being displayed
    - `category-slug` when a category listing for the category with a given slug is being displayed.

  There are many more classes WordPress will automatically append using this function. For a full list, see `http://codex.wordpress.org/Function_Reference/body_class`.

- We also used `<?php post_class(); ?>` to append the post class to our `<article>` tag plus an `id` of the post ID. This lets us style each type of post differently if we want to, as well as styling individual posts using the ID. Depending on how the post is being viewed, classes it might add include:
    - `post` when a post is being displayed
    - `attachment` when an attachment is being displayed
    - `category-ID` and `category-name` mean we can style posts from different categories differently – useful in a site where you want to color-code different categories, for example.
    - `sticky` for posts which have been designated as "sticky", sticking to the front page of the blog or the top of the blog listing

  There are more classes which WordPress will append here. For a full list see `http://codex.wordpress.org/Function_Reference/post_class`.

- Finally, we added `class="post-title"` to each post title listing. This will help us to style the post titles in a specific way should we want to override or add to the styling for the `<h2>` tag.

## One last look – our full loop

We now have come up with a main loop that looks something like the following:

```
<?php if (have_posts()) :?>
  <?php while (have_posts()) : the_post();?>

  <article <?php post_class(); ?> id="post-<?php the_ID(); ?>">
    <h2 class="post-title"><a href="<?php the_permalink(); ?>"
rel="bookmark" title="Permanent Link to <?php the_title_attribute();
?>"><?php the_title();?></a></h2>
    <p class="entry-meta">by <?php the_author_meta('first_name'); ?>
<?php the_author_meta('last_name'); ?> in <?php the_category(", ");
?></p>

    <div class="entry-content"><!--//post-->
      <?php the_content();?>
    </div><!--//.entry-content-->

    <p class="left"><a class="more" href="<?php the_permalink();
?>">Read more &raquo;</a></p>
    <p class="right"><a class="comments-count" href="<?php
the_permalink(); ?>"><?php comments_number("0", "1", '%'); ?></a></p>
    <div class="push"></div>

  </article>
<?php endwhile; ?>
<?php else : ?>
       <h2 class="center">Not Found</h2>
       <p class="center">Sorry, but you are looking for something
that isn't here.</p>
       <?php get_search_form(); ?>
<?php endif; ?>
```

By now, you can see that by leveraging WordPress' template tags and functions, we can easily move on to including other WordPress content and features into our HTML mockup, making it a fully functional and dynamic theme. We'll move on to doing more of that in *Chapter 4*, *Advanced Theme Features*, but first we have to break our `index.php` file into its component parts.

## Breaking the code up into template files

Now that we've got the Loop working in our theme, it's time to start breaking the theme down into template files, which will help us make sure edits flow consistently across all of the various aspects of the theme.

A good rule of thumb for separating markup and code into its own template file is:

- First and foremost, avoid duplicate markup and code
- Secondly, you'll be able to create template files to address any unique markup and code that should only appear in special circumstances, like on a home page, but nowhere else

The most common template files we'll look at first are the `header.php`, `footer.php`, and `sidebar.php` template files. Each of these template files will be used in various types of pages on the site.

The header should be the same for a post or an archive as for a static page. The footer should remain consistent across all types of content on the site. If we update or change the header or footer, we'll want that change to appear everywhere it's used and not have to edit two or three different template files. The same goes for the sidebar—we may want it on several types of pages, or not. This is easy to manage if it's contained in its own file, and included where needed into other template files which control different content types.

### Including everyone

These three template files (mentioned in the previous section) are so common that they have their own include template tags in WordPress, namely `get_header`, `get_sidebar`, `get_footer`. The tags are used like so in your template file:

- `<?php get_header(); ?>`—to call the `header.php` file
- `<?php get_sidebar(); ?>`—to call the `sidebar.php` file
- `<?php get_footer (); ?>`—to call (yes, you've guessed it) the `footer.php` file

Let's start by creating the `header.php` file and adding the tag to include that in our `index.php` file.

### Creating a header file

The header is more than just the beginning of the HTML5 file and the specific `<head>` tag. It includes the opening `<body>` tag and everything that is in the header of the theme's design—what is often referred to as the **banner**.

## Time for action – creating the header.php file

To start, we create `header.php` as follows:

1. Create a file called `header.php` in your theme directory.
2. Open up your `index.php` file and cut everything from `DOCTYPE` at the very top of the file down to the end of the `<header>` tag or the main `<nav>` tag, depending on the structure of your markup. For our theme, the code we need to cut is as follows:

```
<html lang="en" class='no-js'>
<head>
<meta http-equiv="Content-Type" content="text/html;
charset=utf-8">

<!--for mobile ready-->
<meta name="viewport" content="width=device-width, initial-
scale=1.0, user-scalable=0, minimum-scale=1.0, maximum-
scale=1.0">
<meta name="apple-mobile-web-app-capable" content="yes">
<meta name="apple-mobile-web-app-status-bar-style"
content="black">

<link rel="apple-touch-icon" sizes="57x57"
href="images/pngs/apple-touch-icon-57x57.png"/>
<link rel="apple-touch-icon" sizes="72x72"
href="images/pngs/apple-touch-icon-72x72.png"/>
<link rel="apple-touch-icon" sizes="114x114"
href="images/pngs/apple-touch-icon-114x114.png"/>

<meta name="description" content="Description of content that
contains top keyword phrases"></meta>
<meta name="keywords" content="Key words and phrases, comma
separated, not directly used in content - Google ignores this
tag but used in other engines as a fall back"></meta>

<title>Open Source Online Magazine</title>

<!--//style sheets-->
<link media="all" rel="stylesheet" type="text/css" href="<?php
bloginfo('stylesheet_url'); ?>" />

<!--//javascripts-->
<script src="js/modernizr.custom.20796.js"></script>
```

```
<!--[if lt IE 9]>
  <script src="http://html5shim.googlecode.com/svn/trunk/html5.
js"></script>
  <link media="all" rel="stylesheet" type="text/css"
href="css/style-ie.css" />
<![endif]-->

</head>
<body <?php body_class($class); ?>>
<div id="container">
<header class="">
<hgroup class="screen-reader-text">
  <h1>OpenSource</h1>
    <h2>Online Magazine</h2>

    <p><em>Using Open Source for work and play</em></p>
    </hgroup>
</header>

<nav id="mainNav" class="grd-vt-tertiary shdw-centered">
  <h2 class="screen-reader-text">Main Navigation:</h2>
    <ul class="sfTab">
      <li class="current_page_item"><a href="#">The
Zine</a></li>
      <li><a href="#">About Us</a></li>
      <li><a href="#">Resources</a></li>
      <li><a href="#">Contact</a></li>
</ul>
</nav><!--//top_navlist-->
```

3. Paste that into your `header.php` file, and in your `index.php` file include the header back in with the `get_header` include template tag at the very beginning of the file:

   ```
   <?php get_header(); ?>
   ```

4. Save both the `header.php` and `index.php` files and refresh your browser. Your page should look exactly the same.

## What just happened?

We cut the `<head>` section of the `index.php` file as well as the header of our site design, and pasted that into a new `header.php` file.

We then added an `include` to make sure that `index.php` still displays the content of `header.php: <?php get_header(); ?>`.

## Separating out our sidebar

The next step is to create a template file for the sidebar. This will include widget areas, which we will create in *Chapter 4*, *Advanced Theme Features,* replacing our existing static text.

## Time for action – creating the sidebar.php file

We create a sidebar file as follows:

1. Create a file called `sidebar.php` in your theme directory.
2. Open up your `index.php` file and cut everything from the sidebar in your design. This is usually below the closing `</content>` tag. For our theme, the code we need to cut is as below:

```
<!-- #right sidebar -->
<aside class="sidebar right third">
  <div class="bdr grd-vt-main rnd shdw-centered">
    <h2 class="features embossed">Features:</h2>
    <ul class="tocNav">
      <li><a href="#">Article Name 01 Lorem ipsum dolor sit
amet consectetuer adipiscing elit</a></li>
      <li><a href="#">Article Name 02 Lorem ipsum dolor sit
amet</a></li>
      <li><a href="#">Article Name 03 Lorem ipsum</a></li>
    </ul>
  </div>
  <div class="bdr grd-vt-secondary rnd shdw-centered">
    <h2 class="columns embossed">Columns:</h2>
    <ul class="tocNav">
      <li><a href="#">Name of Category 01 Lorem ipsum
(#)</a></li>
      <li><a href="#">Name of Category 02 Lorem (#)</a></li>
      <li><a href="#">Name of Category 03 Lorem ipsum dolor
(#)</a></li>
    </ul>
  </div>
  <div class="bdr bg-light2 rnd shdw-centered">
    <h2 class="pastIssues embossed">Past Issues:</h2>
    <ul class="tocNav">
      <li><a href="#">Archive Link year/month 01</a></li>
      <li><a href="#">Archive Link year/month 02</a></li>
      <li><a href="#">Archive Link year/month 03</a></li>
    </ul>
  </div>
  <div class="push"></div>
</aside><!--//.sidebar1  -->
```

[ The previous code doesn't include any widget areas and still consists of static markup—don't worry, we'll change all this in *Chapter 4*, *Advanced Theme Features*, and make our sidebars much more jazzy. ]

3. Paste that into your `sidebar.php` file, and in your `index.php` file, include the sidebar back in with the `get_sidebar` include template tag at the very beginning of the file:

```
<?php get_sidebar(); ?>
```

4. Save both the `sidebar.php` and `index.php` files and refresh your browser. Again, your page won't have changed.

[ **Warning!**

The code you paste into your `sidebar.php` file should contain only the code required to display the sidebar and nothing else. Don't copy any additional code between the closing `</aside>` tag and the opening `<footer>` tag, as the template files don't have a sidebar and so they don't include the `sidebar.php` file. ]

### *What just happened?*

We created a `sidebar.php` template file to hold the code for our sidebar, moved the code for the sidebar into it, and then included it in `index.php` with the `get_sidebar` include template tag.

We'll finish off by repeating this process for our footer.

## Finishing off with the footer

The final element of our theme, which we need to give its own file, is the footer. Footers these days are often much more than just a copyright notice and designer credit. Lots of sites make use of **fat footers**, which display much more information and list content from elsewhere in the site. You may have noticed that our design for Open Source Magazine includes one of these fat footers.

To create our fat footer, we'll add **widget areas** to our footer as well as our sidebar, but not just yet. First we need to create our `footer.php` file—we'll move on to adding the widgets in *Chapter 4*, *Advanced Theme Features*.

## Time for action – creating the footer.php template file

We follow the same steps to create our footer template file as we did for the header and sidebar.

1. Create a file called `footer.php` in your theme directory.
2. Open up your `index.php` file and cut everything from the footer and below in your design. This will be everything from the opening `<footer>` tag to the closing `</html>` tag. In our theme, the code is:

```
<footer>
  <h2 class="screen-reader-text">Footer Information:</h2>
  <aside class="general left two-thirds">
    <h3>Socialize</h3>
    <ul class="grid4up">
      <li><a href="#" class="soc facebook">facebook</a></li>
      <li><a href="#" class="soc twitter">twitter</a></li>
      <li><a href="#" class="soc rss">rss</a></li>
      <li><a href="#" class="soc google">gmail</a></li>
    </ul>

    <div class="push"></div>
    <h3>About us</h3>
    <p>Lorem ipsum dolor sit amet, consectetur adipisicing
elit, sed do eiusmod tempor incididunt ut labore et dolore
magna aliqua. Ut enim ad minim veniam.</p>
  </aside>

  <aside class="navigate right third">
    <h3>Navigate</h3>
    <ul>
      <li><a href="#" target="" title="">title to link01</a>
</li>
      <li><a href="#" target="" title="">another
link02</a></li>
      <li><a href="#" target="" title="">a different title:
link03</a></li>
      <li><a href="#" target="" title="">yet another
link04</a></li>
    </ul>
  </aside>

  <div class="push"></div>

</footer>
</div><!--//#across-->
</body>
</html>
```

[ Again, this code doesn't include any widget areas yet—we'll correct this in *Chapter 4, Advanced Theme Features*. ]

3. Paste that into your `footer.php` file, and in your `index.php` file include the footer back in with the `get_footer` include template tag at the very beginning of the file:

   ```
   <?php get_footer(); ?>
   ```

4. Save both the `footer.php` and `index.php` files and refresh your browser. Once again, your page won't have changed.

## What just happened

When you save these files and reload your WordPress site, the result should look no different than when your footer markup and code was inside the `index.php` file. Now from here onwards, for each new page type we create, we can just include the footer code with the `get_footer` template tag.

## Time for action – don't forget the plugin hooks

WordPress plugins take advantage of **plugin API hooks** placed in themes so they can execute various commands inside the plugin and/or get and write information to your website.

To make sure our markup and code are able to play well with various plugins, we need to include a hook in each of the `header.php` and `footer.php` files as follows:

In `header.php`, just before the closing `</head>` tag, add the following:

```
<?php wp_head(); ?>
```

In `footer.php`, right before your closing `</body>` tag, add the following:

```
<?php wp_footer(); ?>
```

## What just happened

We added the `wp_head` and `wp_footer` hooks in the `header.php` and `footer.php` files respectively.

The `wp_head` hook is used by many plugins to add elements to `<head>` such as styles, scripts, and meta tags.

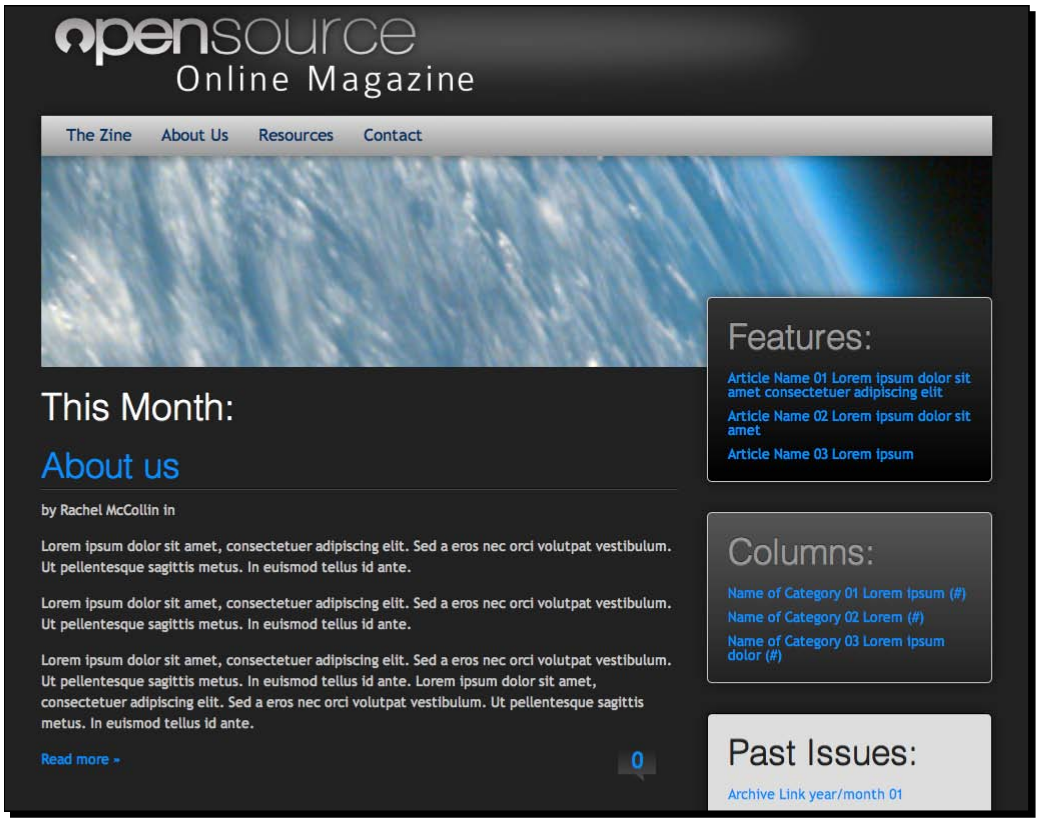
Plugins generally use the `wp_footer` hook to reference JavaScript files.

## Creating a template file for static pages

As we've mentioned, WordPress makes use of a variety of content types including pages, posts, and attachments. You can create specific template files to display each of these.

The most commonly used template file in addition to `index.php` is probably `page.php`, which is used to display static pages. This is because you'll often find that a static page doesn't need to display all of the information shown in a single post or archive listing, such as metadata or comments.

Let's have a look at how one of our static pages looks right now, using `index.php`:


opensource
Online Magazine
The Zine
About Us
Resources
Contact
Features:
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum
Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)
Past Issues:
Archive Link year/month 01
Read more »
0

This Month:

About us

by Rachel McCollin in

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Currently, it's displaying the text **This Month:** plus a comment count, a **Read more** link, and the author metadata. We want to remove those.

So the final step we'll take in this chapter is to create a `page.php` file based on our `index.php` file, which WordPress will use to display all static pages correctly.

## Time for action – creating a custom page.php template file

We create our `page.php` template file by copying `index.php` and making some adjustments.

1. Create a new file called `page.php`.
2. Open `index.php`, copy its entire contents, and paste them into `page.php`.
3. In `page.php`, find the code to display the `This Month:` heading and delete it:

   ```
   <h2 class="thisMonth embossed" style="color:#fff;">This Month:</
   h2>
   ```

4. Now find the code to display the author metadata and delete that:

   ```
   <p class="entry-meta">by <?php the_author_meta('first_name');
   ?> <?php the_author_meta('last_name'); ?> in <?php
   the_category(", ") ?></p>
   ```

5. Next, find the code for the `Read more` link and the comments count and delete that:

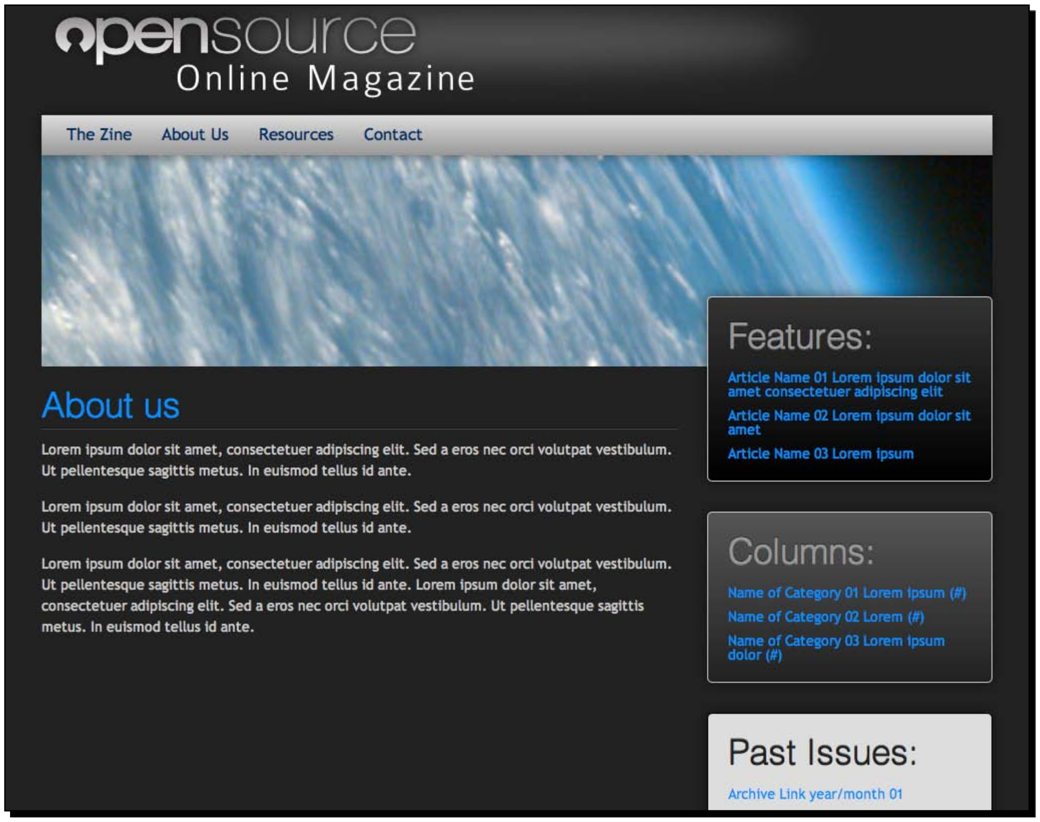
   ```
   <p class="left"><a class="more" href="<?php the_permalink()
   ?>">Read more &raquo;</a></p>
   <p class="right"><a class="comments-count" href="<?php
   the_permalink() ?>"><?php comments_number("0", "1", '%')
   ?></a></p>
   ```

6. Finally, save `page.php` and refresh your browser.

### *What just happened?*

We created a new file called `page.php` to display static pages, and edited it to remove any content we don't need on those pages.

Now the **About us** page looks like the screenshot below:



About us

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Features:

Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit

Article Name 02 Lorem ipsum dolor sit amet

Article Name 03 Lorem ipsum

Columns:

Name of Category 01 Lorem ipsum (#)

Name of Category 02 Lorem (#)

Name of Category 03 Lorem ipsum dolor (#)

Past Issues:

Archive Link year/month 01

Much better—the metadata has gone, as well as the Read more link, the comments count, and the confusing heading.

In *Chapter 4*, *Advanced Theme Features*, we'll look at doing more with page templates, for example, creating a template that doesn't display a sidebar.

## Pop Quiz – questions about WordPress theme structure

Q1. According to the WordPress hierarchy, which of the following is true and which is false?

1. `page.php` trumps `index.php` when viewing a static page
2. `archive.php` trumps `category.php` when viewing a category archive
3. `single.php` trumps `index.php` when viewing a static page

Q2. What does the `header.php` file contain?

1. The `<head>` tag and its contents
2. The `<header>` tag and its contents, taken from the theme design
3. Everything from the opening `DOCTYPE` to the end of the `<header>` tag

Q3. Which files normally include widgets?

1. `footer.php`
2. `sidebar.php`
3. `header.php`

## Summary

We've now got a working theme for Open Source Online Magazine. Great Job!

It's probably clear that you can take advantage of all sorts of custom WordPress template hierarchy pages and template tags to endlessly continue to tweak your theme, in order to display custom information and layouts for all types of different scenarios.

How much customization your theme requires depends entirely on what you want to use it for. If you know exactly how it's going to be used and you'll be the administrator controlling it, you can save time by covering the most obvious page displays the site will need to get it rolling, and occasionally create new template files should the need arise. If you intend to release the theme to the public, the more customized page views you cover, the better. You never know how someone will want to apply your theme to their site.

You've now learnt how to set up your development environment and an HTML editor for a smooth workflow. You also have a theme design that uses semantic, SEO-friendly HTML5 and CSS3 with fallbacks for IE7 and 8, which has been broken down into WordPress template pages for flexibility in your layouts. Believe it or not, we're not quite done!

In the next chapter, we'll continue working with our new theme and add additional features to it, such as widget areas and an improved menu, as well as learning ways to allow users to tweak the theme without delving into code. Let's get started!

# 4
# Advanced Theme Features

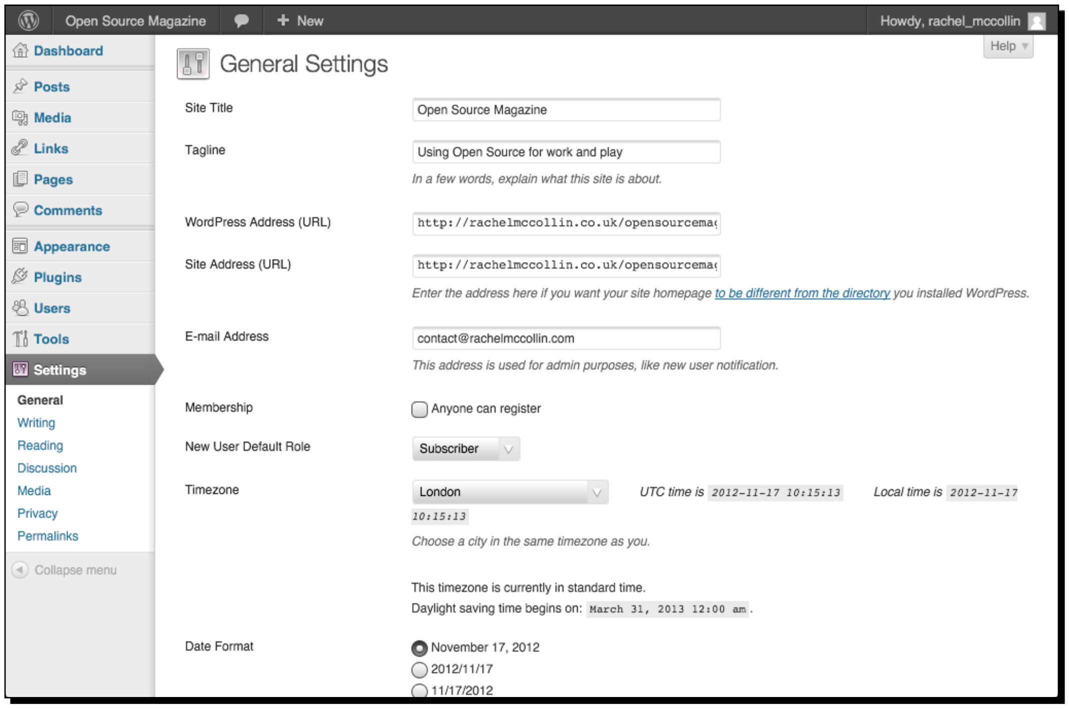
*So, you now have a working WordPress theme, but your job isn't done yet. For the theme to support a fully functioning site, it'll need a few more things added to it.*

*In this chapter you'll learn how to add more to your theme so you (or anyone else who downloads the theme) can use it to set up a great website. We'll look at using site settings to give our site a name and description, configuring the Reading settings and permalinks, adding featured images, and setting up widget areas.*

So let's get started!

## Site settings

Now that you have your theme installed and powering the Open Source Magazine site, you need to make a few changes to the theme settings. You access these via **Settings** | **General**.



Open Source Magazine  + New  Howdy, rachel_mccollin

General Settings

Site Title: Open Source Magazine

Tagline: Using Open Source for work and play
*In a few words, explain what this site is about.*

WordPress Address (URL): http://rachelmccollin.co.uk/opensourcema

Site Address (URL): http://rachelmccollin.co.uk/opensourcema
*Enter the address here if you want your site homepage to be different from the directory you installed WordPress.*

E-mail Address: contact@rachelmccollin.com
*This address is used for admin purposes, like new user notification.*

Membership: Anyone can register

New User Default Role: Subscriber

Timezone: London  *UTC time is* `2012-11-17 10:15:13`  *Local time is* `2012-11-17 10:15:13`
*Choose a city in the same timezone as you.*

This timezone is currently in standard time.
Daylight saving time begins on: `March 31, 2013 12:00 am`.

Date Format: [✓ November 17, 2012] 2012/11/17 11/17/2012

## Time for action – configuring your site settings

Once you are in the **Settings** screen, make the following changes:

1. **Site Title**: Change this to **Open Source Magazine**.
2. **Tagline**: Change this to **Using Open Source for work and play**.
3. **TimeZone**: Change this to the city nearest to you or to your readership, to ensure that any time metadata for your posts works correctly.
4. Click on the **Save Changes** button.

## What just happened?

You edited your site's settings so it now has the correct title and description, and the time settings are correct for you or your readership. At the moment this won't make any difference to your site as the theme isn't displaying the site title or the tagline (sometimes known as the description). Let's fix that.

## Time for action – adding the site title and description to your theme

To add the site title and description, do the following:

1. Open the `header.php` file that you created in the previous chapter.
2. Find the following code:

```
<hgroup class="screen-reader-text">
  <h1>OpenSource</h1>
  <h2>Online Magazine</h2>
  <p><em>Using Open Source for work and play</em></p>
</hgroup>
```

3. Replace it with the following:

```
<hgroup class="screen-reader-text">
  <h1 id="site-title">
    <a href="<?php bloginfo('url'); ?>" title="<?php
bloginfo('name'); ?>"><?php bloginfo('name'); ?></a>
  </h1>
  <h2 id="site-description"><?php bloginfo( 'description' ); ?></
h2>
</hgroup>
```

4. Save your file.

## What just happened?

We added some PHP code to tell WordPress to insert our site's title and description in place of the static code that was there before. Let's have a closer look at the code:

- First we have an `<h1>` element with a `#site-title` ID. This ID will help us to style the title if we need to.
- Inside the `<h1>` tag is a link with the `href` attribute of `<?php bloginfo( 'url' ); ?>` which WordPress uses to fetch the site's URL. This link also has a `title` attribute of `<?php bloginfo('name'); ?>`, which is the site title.

- Inside the link is the site title itself, displayed using `<?php bloginfo('name'); ?>`.
- After the `<h1>` element is an `<h2>` element displaying the site description (or tagline), using `<?php bloginfo( 'description' ); ?>`. This element has an ID of `#site-description` so we can target it for styling if we need to.

These changes won't make any difference to our site as it's displayed in the browser, because the contents of the `<hgroup>` element are hidden offscreen. But it does change the underlying code. Let's have a look at what WordPress generates as the source code in our header now:

```
<hgroup class="screen-reader-text">
  <h1 id="site-title">
    <a href="http://rachelmccollin.co.uk/opensourcemagazine"
title="Open Source Magazine">Open Source Magazine</a></h1>
  <h2 id="site-description">Using Open Source for work and play</
h2>
</hgroup>
```

As you can see, it's using the `bloginfo` tag to provide browsers (and users, if you set your CSS up that way) with information on the site. Having added this code to your `header.php` file, if we need to change the site title or description in future we just do this in the **Settings** screen and don't need to touch the code. And if you or anyone else uses your theme for another site, this will work out of the box.

For more on the `bloginfo` tag and ways you can use it in your themes, see `http://codex.wordpress.org/Function_Reference/bloginfo`.

## Pretty permalinks

The next thing to configure is our permalinks. **Permalinks** are the unique URLs that a browser uses to display a given page in our site. At the moment our site uses the default style of permalinks, which means they look something like this:

`http://rachelmccollin.co.uk/opensourcemagazine/?p=7`

That `?p=7` at the end of the URL isn't very helpful for two main reasons:

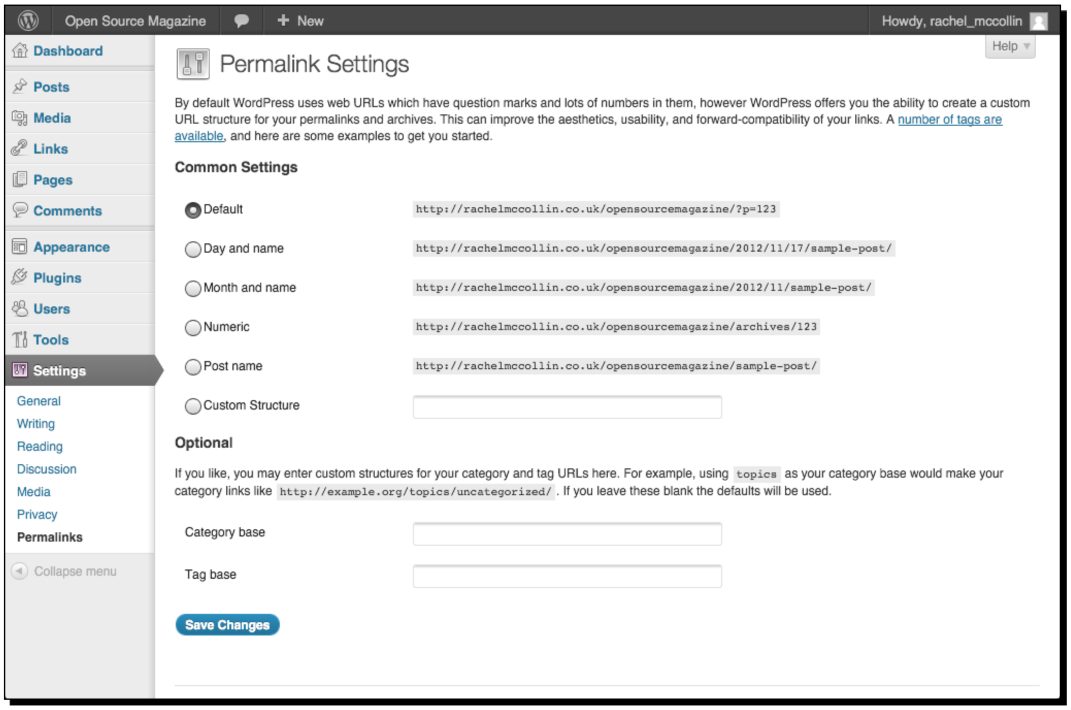
- **User-friendliness**: The URL tells users nothing about the content of the page or post being viewed and isn't very easy to remember.
- **SEO**: Search engines use URLs for information when indexing sites. That URL won't help search engines to determine what the page is about.

Luckily, WordPress makes it easy to improve our permalinks.

## Time for action – setting up pretty permalinks

Setting up permalinks is simple and you do it in the WordPress admin.

1. Go to **Settings** | **Permalinks** to view the screen shown in the following screenshot:



Permalink Settings

By default WordPress uses web URLs which have question marks and lots of numbers in them, however WordPress offers you the ability to create a custom URL structure for your permalinks and archives. This can improve the aesthetics, usability, and forward-compatibility of your links. A number of tags are available, and here are some examples to get you started.

Common Settings

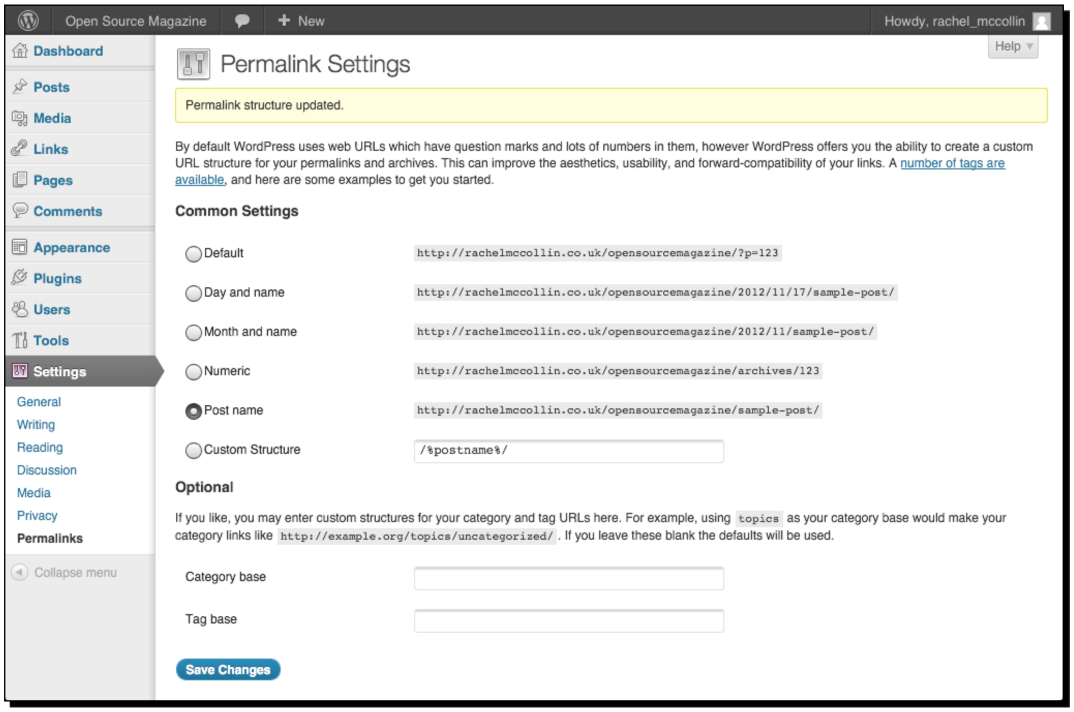
| | |
|---|---|
| [✓ Default] | `http://rachelmccollin.co.uk/opensourcemagazine/?p=123` |
| Day and name | `http://rachelmccollin.co.uk/opensourcemagazine/2012/11/17/sample-post/` |
| Month and name | `http://rachelmccollin.co.uk/opensourcemagazine/2012/11/sample-post/` |
| Numeric | `http://rachelmccollin.co.uk/opensourcemagazine/archives/123` |
| Post name | `http://rachelmccollin.co.uk/opensourcemagazine/sample-post/` |
| Custom Structure | |

Optional

If you like, you may enter custom structures for your category and tag URLs here. For example, using `topics` as your category base would make your category links like `http://example.org/topics/uncategorized/` . If you leave these blank the defaults will be used.

| | |
|---|---|
| Category base | |
| Tag base | |

2. As you can see from the screenshot, our permalinks are set to **Default**, which is why they aren't very pretty. Click on the **Post name** radio button to change this, as shown in the following screenshot:



Permalink Settings

Permalink structure updated.

By default WordPress uses web URLs which have question marks and lots of numbers in them, however WordPress offers you the ability to create a custom URL structure for your permalinks and archives. This can improve the aesthetics, usability, and forward-compatibility of your links. A number of tags are available, and here are some examples to get you started.

Common Settings

| | |
|---|---|
| ○ Default | `http://rachelmccollin.co.uk/opensourcemagazine/?p=123` |
| ○ Day and name | `http://rachelmccollin.co.uk/opensourcemagazine/2012/11/17/sample-post/` |
| ○ Month and name | `http://rachelmccollin.co.uk/opensourcemagazine/2012/11/sample-post/` |
| ○ Numeric | `http://rachelmccollin.co.uk/opensourcemagazine/archives/123` |
| ● Post name | `http://rachelmccollin.co.uk/opensourcemagazine/sample-post/` |
| ○ Custom Structure | `/%postname%/` |

Optional

If you like, you may enter custom structures for your category and tag URLs here. For example, using `topics` as your category base would make your category links like `http://example.org/topics/uncategorized/` . If you leave these blank the defaults will be used.

| | |
|---|---|
| Category base | |
| Tag base | |

3. Click on the **Save Changes** button.

## What just happened?

We made a quick change in the **Permalinks Settings** screen to configure pretty permalinks. Now let's see what the URL is for that post:

```
http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-slightly-
shorter-title-but-more-text/
```

That's better! It's much more descriptive—if a little long! The text after the URL for the site (that is, `post-with-a-slightly-shorter-title-but-more-text` is known as the **slug)**. You can edit the slug in the page or post editing screen when you're setting up your pages, which you might find helpful for user-friendliness or SEO.

To find out how to change the slug, and therefore the URL, of individual pages and posts, see `http://codex.wordpress.org/Pages#Changing_the_URL_of_Your_Pages`.

## Permalinks – a quick guide

You may have noticed that when you clicked on the **Post name** radio button on the **Permalinks** screen, the text `/%postname%/` appeared in the **Custom structure** field below it. This is the tag which WordPress uses to generate the URL based on the post name. Other tags are:

- `%year%` – the year the post was published using four digits, for example 2013.
- `%monthnum%` – the numerical month the post was published, for example 05.
- `%day%` – the day of the month the post was published, for example 28.
- `%hour%` – the hour the post was published, using the 24-hour clock, for example 15.
- `%minute%` – the minute of the hour the post was published, for example 43.
- `%second%` – the second of the minute the post was published, for example 57.
- `%post_id%` – the unique ID of the post, for example 7.
- `%postname%` – the post name, using the slug which is automatically generated from the post name or which you can edit manually.
- `%category%` – the slug for the category, which is either generated based on the category name or which you specify when setting up the category. For example, WordPress would give the slug `new-products` to a category called **New Products**.
- `%author%` – the author name, for example Rachel McCollin would become `rachel-mccollin`.

Occasionally permalink settings may not work right out of the box, as it depends on your server configuration. In some cases, you may have to change the file permissions for the `.htaccess` file at the root of your site. For more on this, see `http://codex.wordpress.org/Using_Permalinks`.

## Menus

The next step is to get our menus working correctly. Since Version 3.0, WordPress provides a great interface for creating and configuring menus using the **Menus** admin screen, which means, once you've added some PHP to set this up in your theme, you don't need to touch your code if you need to edit the navigation menu.

## Registering navigation menus

In order for any menus added in the WordPress admin to show up on your site, you'll need to create those menus by registering them. This refers to the code you add to your functions file to create the menu. You'll then add some code to `header.php` to display the menu in the correct place.

## Time for action – registering a navigation menu

Let's start by registering the menu. This involves creating a new file called `functions.php`.

1. Create a new blank file in your theme directory and name it `functions.php`.
2. At the beginning of the file, type the following:

```
<?php
function register_my_menus() {
  register_nav_menus(
    array( 'header-menu' => __( 'Header Menu' ) )
    );
  }
add_action( 'init', 'register_my_menus' );
?>
```

3. Save the file.

### *What just happened?*

We created a new file called `functions.php` and added a function to it to register a menu. The `functions.php` file is a special file which is used to store extra functions which the theme needs in order to work. This will be PHP code that isn't included in WordPress itself and isn't in your theme files, but is used by them.

Let's have a look at each line of the function we added:

- `<?php` starts running PHP, this line must be the very first line of your file with no spaces before it.
- `function register_my_menus() {` defines a new function with the name `register_my_menus`.
- `register_nav_menus(` uses a WordPress function called `register_nav_menus` to tell WordPress that this is what we're doing here.
- `array( 'header-menu' => __( 'Header Menu' ) )` is an array with a list of menus that you're setting up. We're just setting up one menu here, the name WordPress uses for it will be `header-menu` and the name shown in the menus admin screen will be **Header Menu**.

- `);` closes our array.
- `}` closes our function.
- `add_action( 'init', 'register_my_menus' );` makes things happen. Any actions using `init` will be run after WordPress has finished loading but before any content is sent to the browser. Here, we're telling WordPress to run the `register_my_menus` function as part of the `init` action which it will always run.
- `?>` stops the PHP. This must be the final line of the `functions.php` file with no spacing or empty lines afterwards.

Well done! You just defined your first function. Now let's add the code to our `header.php` file to make the menu appear.

## Time for action – adding menus to our theme's header.php file

The next step involves inserting a line of code into your `header.php` file.

1. Open the `header.php` file and find the following code:

```
<nav id="mainNav" class="grd-vt-tertiary shdw-centered">
  <h2 class="screen-reader-text">Main Navigation:</h2>
    <ul class="sfTab">
      <li class="current_page_item"><a href="#">The Zine</a></li>
      <li><a href="#">About Us</a></li>
      <li><a href="#">Resources</a></li>
      <li><a href="#">Contact</a></li>
</ul>
</nav><!--//top_navlist-->
```

2. Replace that code with the following:

```
<nav id="mainNav" class="grd-vt-tertiary shdw-centered">
  <h2 class="screen-reader-text">Main Navigation:</h2>
    <?php wp_nav_menu( array( 'theme_location' => 'header-menu', 
'container_class' => 'sfTab' ) ); ?>
</nav><!--//top_navlist-->
```

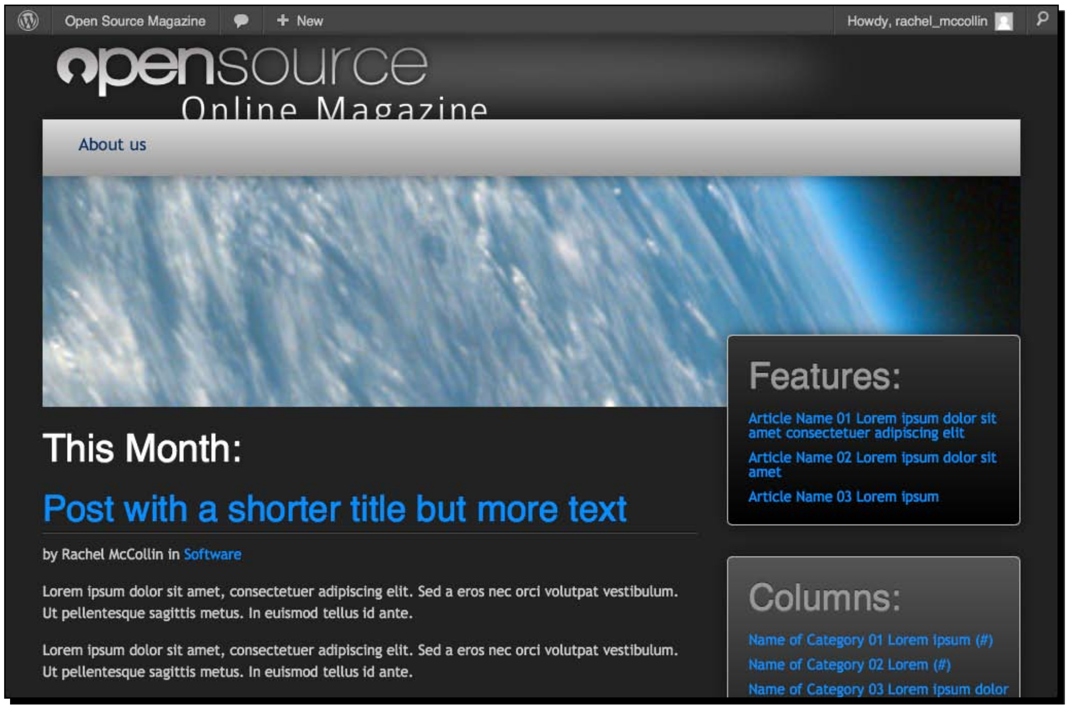
3. Save the file and view the site in your browser to see what happens.

## What just happened?

We added the `wp_nav_menu` tag to our header file to display the menu we'd registered in the correct place. Let's have a closer look:

- `wp_nav_menu` is the tag which calls and displays a navigation menu.
- The first parameter we set is `'theme_location' => 'header-menu'`. This tells WordPress which menu to display – the `header-menu` we defined in `functions.php` earlier.
- The second parameter we set is `'container_class' => 'sfTab'`. This adds a containing `<div>` with the class `.sfTab` to the menu, which replaces the `<ul class="sfTab">` code we had originally.

Now let's have a look at our site with its new menu:


Open Source Magazine
New
Howdy, rachel_mccollin
opensource
Online Magazine
About us
Features:
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum
Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor

This Month:

Post with a shorter title but more text

by Rachel McCollin in Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

The menu is there but it isn't displaying what we want it to. If you don't set up your own menu, WordPress just displays all the pages on the site in the order they were added (much as it used to with the `wp_page_menu` tag before Version 3.0). Our site just includes an **About** page which we set up in *Chapter 3*, *Coding it Up*. So we need to add some more pages and set up our menu.

## Setting up our menu

To finish our menu, we need to do three things:

- Create some new pages, a custom link, and a category which the menu will link to
- Define our **Reading** settings so WordPress knows which page our blog listings are on
- Add a menu linking to the pages in the WordPress **Menus** screen

Setting up the new pages and category is simple so we won't show you how to do that (if you're stuck, look at `http://codex.wordpress.org/Pages` and `http://codex.wordpress.org/Posts_Categories_Screen`). We'll move straight on to configuring our **Reading** settings and then creating our menu. So let's do it!

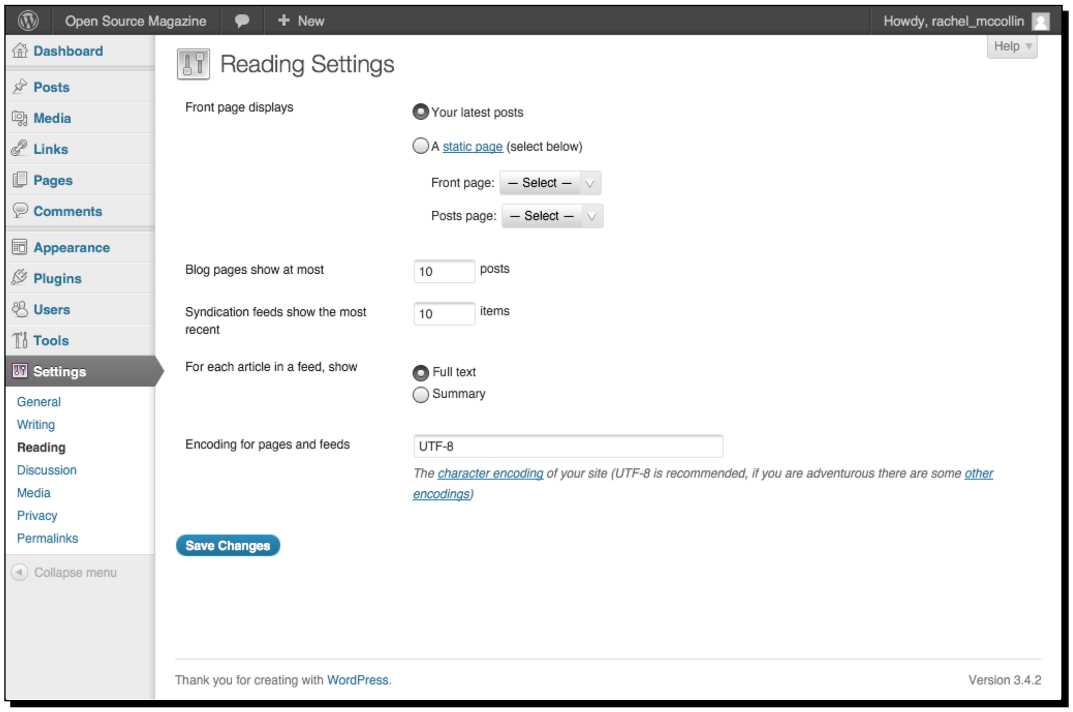
### Defining our Reading settings

The first step is to ensure the site's **Reading** settings are set up correctly so that we can add the content we need to our menu.

## Time for action – defining Reading settings

WordPress gives you the option of having a blog listing on your home page or using a static page instead. A blog listing is great for a magazine site like ours but on a business website, for example, you might want to have a static page. In fact it's becoming more and more common for WordPress sites to be set up with static front pages now.

1. Go to **Settings** | **Reading** to access the **Reading Settings** screen:



Reading Settings

Front page displays: [✓ Your latest posts] / A static page (select below)
Front page: — Select —
Posts page: — Select —

Blog pages show at most: 10 posts

Syndication feeds show the most recent: 10 items

For each article in a feed, show: [✓ Full text] / Summary

Encoding for pages and feeds: UTF-8

*The character encoding of your site (UTF-8 is recommended, if you are adventurous there are some other encodings)*

Thank you for creating with WordPress.

Version 3.4.2

2. As you can see, the site is set to the default—the front page displays all your latest posts. This is what we want, so we don't need to make any changes here.
3. Below this, you'll see that there are options to change the number of posts displayed and whether a full post or an extract is displayed. We'll keep the number of posts at 10 but tell WordPress to display a summary instead of each full post on the front page.
4. To do this, click on the radio button next to **Summary**.
5. Click on the **Save Changes** button, switch to your site, and refresh your browser.

## *What just happened?*

We edited our **Reading** settings in line with the site's design. If we wanted to use a static page as our home page, we would click on the **Static Page** radio button and then choose the static page we wanted to display as our home page.

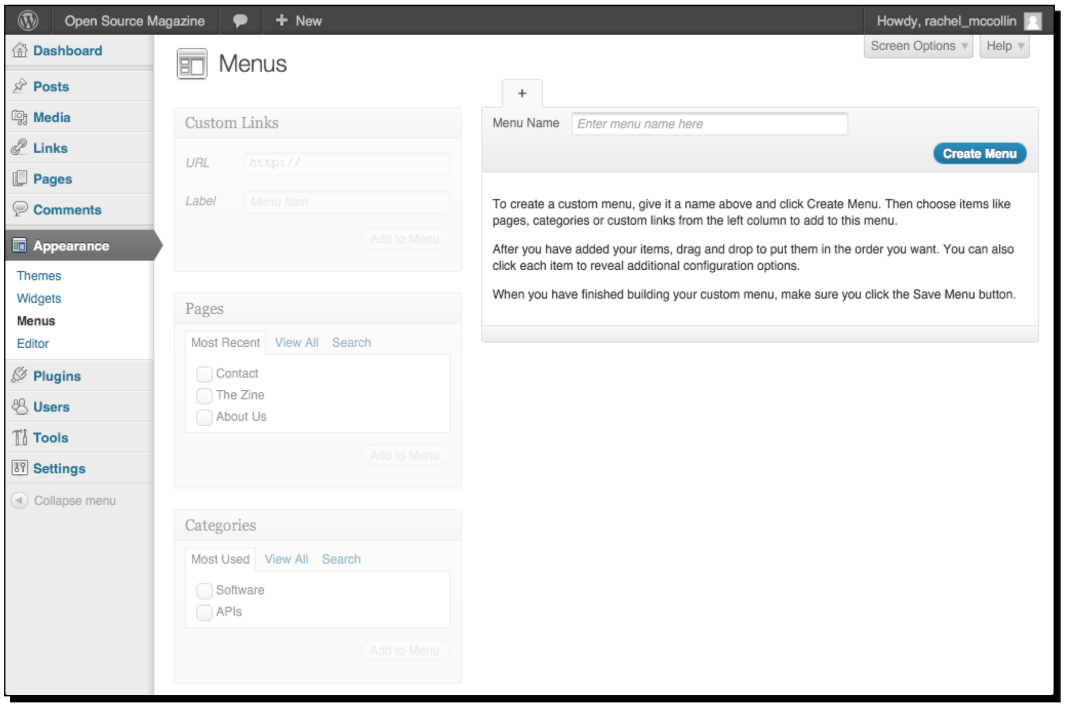
## Creating a menu

The next step is to set up our menu in the **Menus** admin screen.

## Time for action – creating a new WordPress menu

As we have the correct code in place in our theme file, we can set up our menu in the **Menus** admin screen.

1. Open the **Menus** screen by going to **Appearance** | **Menus** to see the **Menus** admin screen as shown in the following screenshot:



To create a custom menu, give it a name above and click Create Menu. Then choose items like pages, categories or custom links from the left column to add to this menu.

After you have added your items, drag and drop to put them in the order you want. You can also click each item to reveal additional configuration options.

When you have finished building your custom menu, make sure you click the Save Menu button.

2. At the moment, there isn't a menu defined. To add one, type the name of your menu in the **Menu Name** field at the top-right side. For our site, let's call the menu `main-menu`.
3. Click on the **Save Menu** button. You will see a message telling you that the menu has been successfully created and you'll see its name in a tab above the **Menu Name** field. Good job!
4. In the **Theme Locations** box, select your menu from the select field (make sure you've followed step 3 and saved your menu first or it won't appear in the select field).
5. Click on the **Save** button in the **Theme Locations** box.

## What just happened?

We created a new menu and saved it. Now let's add some links to it.

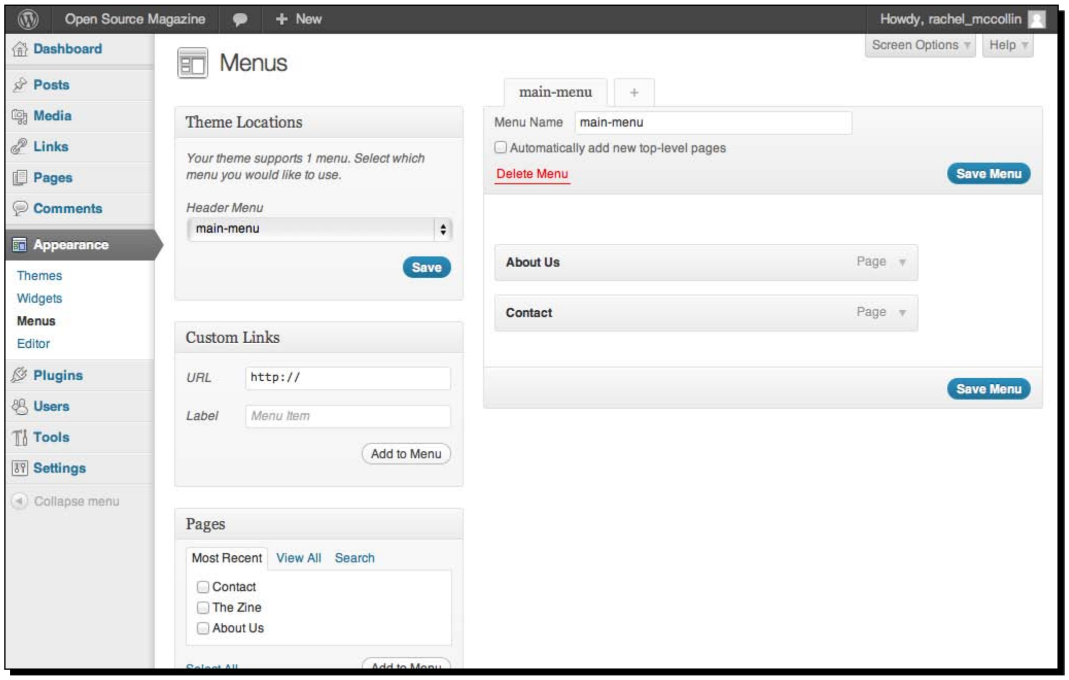
## Adding pages and other content to our menu

You can add all sorts of content to your menus including pages, posts, categories, and custom links. Let's start by adding some static pages.

## Time for action – adding pages to a menu

Now to add some links to our menu.

1. Click on the checkboxes next to each of the pages listed in the **Pages** box and then click on **Add to Menu**.
2. You will see your pages listed in your new menu. To get them in the right order, simply drag them up and down in the list until you're happy.
3. The **Menus** admin screen will now look like the following screenshot:



## *What just happened?*

We added some static pages to our menu. Most sites will include some static pages so it's something you'll find yourself doing a lot. The next step is to add a custom link to our home page, which we're calling **The Zine**.

## Time for action – adding a custom link to the menu

WordPress lets you add custom links – which could be to a specific post in our site, to an external site, or to any link within our site. We'll use a custom link to add a link to the home page and call it **The Zine**.

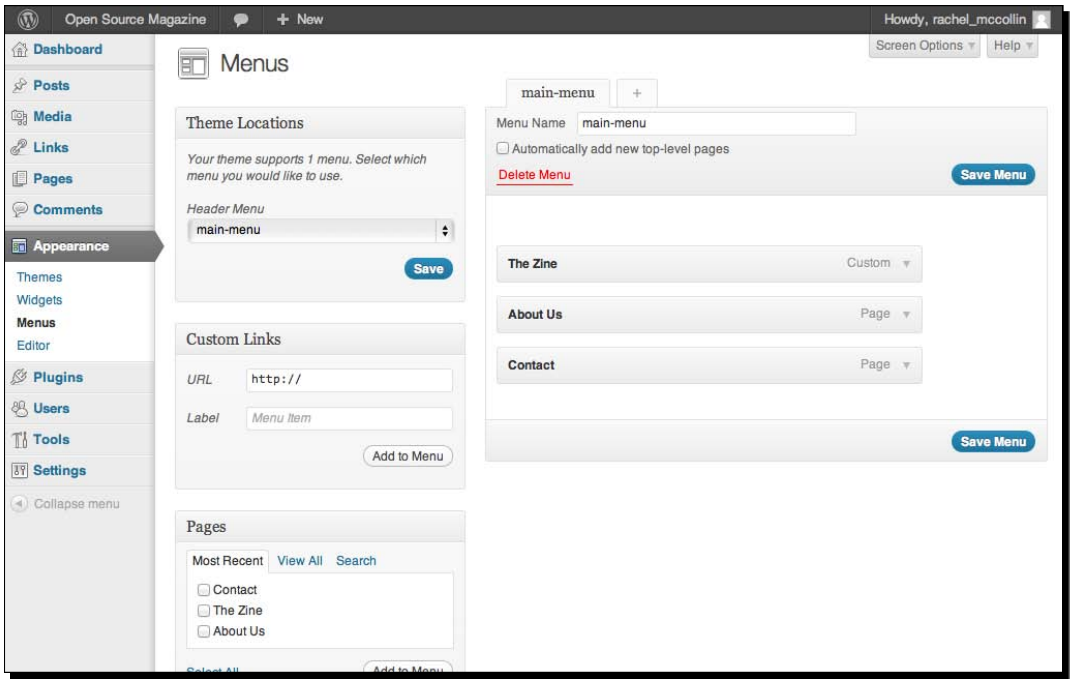
1. In the **Custom Links** box, type the URL of the site in the **URL** field. In our case it's `http://rachelmccollin.co.uk/opensourcemagazine` (or whatever URL you're using for your site).
2. In the **Label** field, type the label you want WordPress to use for your link. It could be `Home` or in our case, we'll type `The Zine`.
3. Click on the **Add to Menu** button. The custom link will appear in the menu on the right-hand side.
4. Finally, drag the link up to the top of the menu so it's listed first and click on the **Save Menu** button.

## *What just happened?*

We added a custom link, saved it to our menu, and moved it to the correct position.

In this case, it was necessary to use a custom link because the front page displays blog posts (which you set up in the **Reading Settings** page earlier). If the front page was a static page, you would simply add that page to your menu.

Here's how the **Menus** admin screen looks now:

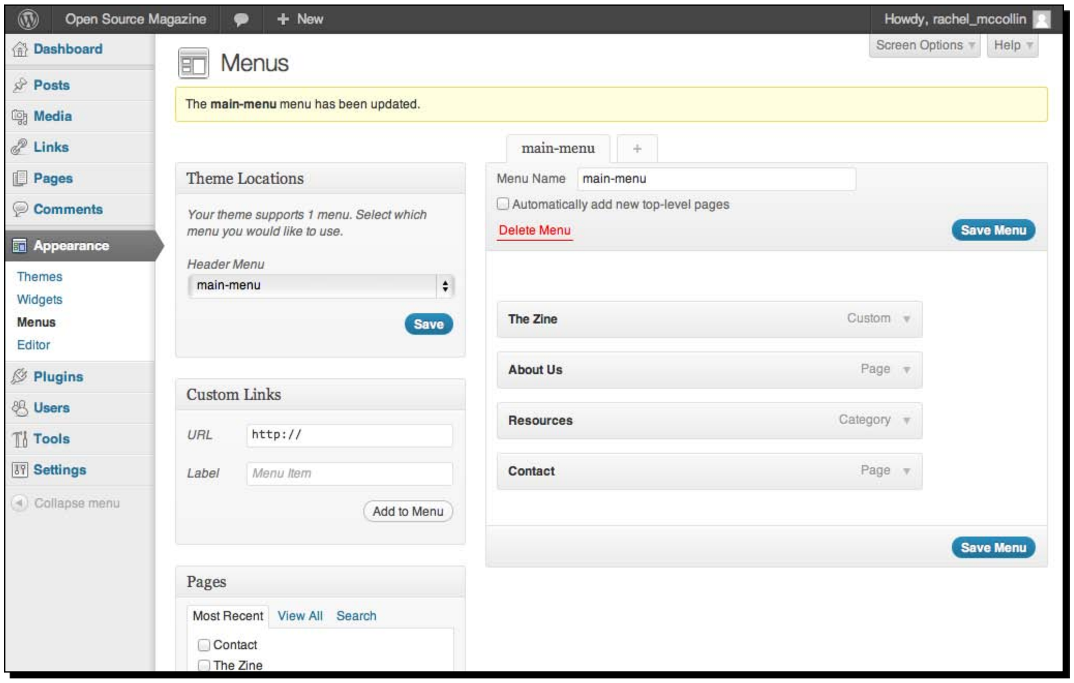


The final step in creating our menu is to add a link to the Resources category.

## Time for action – adding a category link to the menu

Along with pages and custom links, you can use the navigation screen to provide links to categories you define for your content. Let's do it!

1. Now our pages are in place, but not our **Resources** category. To add that, click on the checkbox next to **Resources** in the **Categories** box and click on the **Add to Menu** button.
2. Move the **Resources** link within the menu until everything is in the right order:



The **main-menu** menu has been updated.

Your theme supports 1 menu. Select which menu you would like to use.

Header Menu: main-menu

URL: http://

Label: Menu Item

Contact
The Zine

main-menu

Menu Name: main-menu

Automatically add new top-level pages

| | |
|---|---|
| The Zine | Custom |
| About Us | Page |
| Resources | Category |
| Contact | Page |

**Can't see the Resources category?**

If you can't see one of your categories in the **Menus** screen, that's because you haven't assigned it to any posts yet. WordPress doesn't let you add empty categories to your menu as that wouldn't be very helpful to users. Simply assign that category to one of your posts and it will show up in the **Menus** screen, and if you need to leave the **Menus** screen to do this, make sure you save your menu first.

***3.*** Click on the **Save Menu** button to save your menu.

**Important!**

WordPress doesn't save any changes to your menu until you click on the **Save Menu** button. So don't forget!

## *What just happened?*

We created a new WordPress menu in the **Menus** admin screen, told WordPress to display it in our theme and added some links to it.

The WordPress **Menus** screen gives us even more functionality than we've used here. Let's have a look at some of the possibilities.

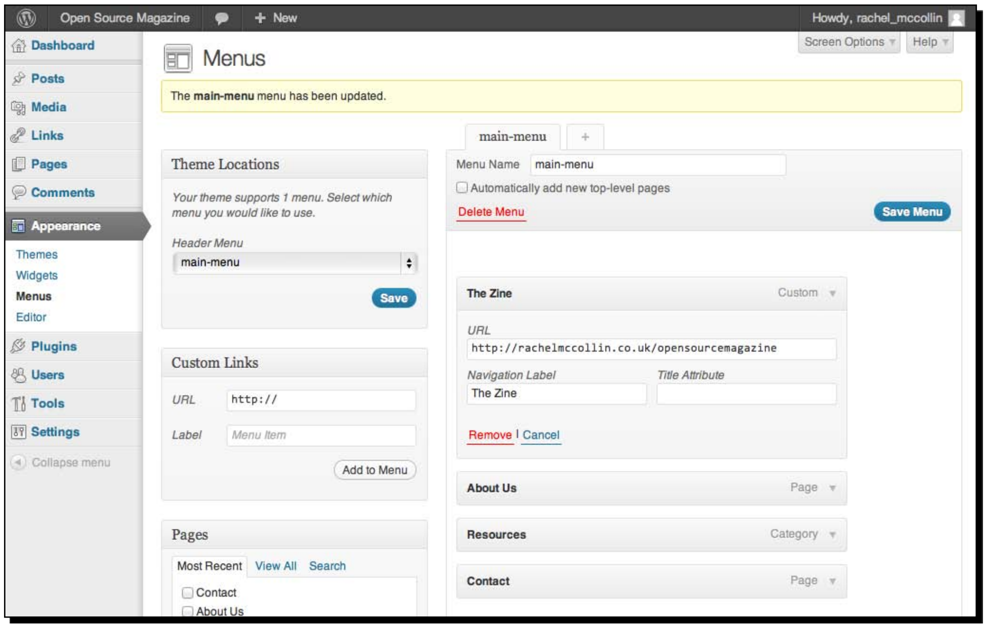
## The WordPress Menus admin – the possibilities

WordPress lets you set up your menus in a variety of ways and with a lot of flexibility. You can add any links you like, call them whatever you want, and structure your menu however you need.

Firstly, you can add different types of links to your menu:

- **Pages**: You can add as many static pages as you want to the menu in whatever order.
- **Categories**: As we've seen, you can add links to one or more categories to a menu. If you want to add tags as well you can do this—if the list of tags isn't visible, click on the **Screen Options** tab at the top of the **Menus** screen and then click on the checkbox next to **Tags**. Your tags will appear and you can add them to the menu.
- **Custom taxonomies**: If you've defined any custom taxonomies for your site, you can link to these in your menu.
- **Custom post types**: It's possible to add links to custom post types to your menu, if you have those set up in your site.
- **Custom links**: You can add any custom link to your menu and give it whatever name you want. For example, you could link to an external site or to a specific post in your site.

Once you've added your links, you can give them a custom navigation label, which doesn't have to be the name of the page or post linked to. So if you wanted to link to a post with a long name you could use an abbreviated label in the navigation menu. You do this by clicking on the arrow next to the label's name in your menu and typing text into the **Navigation Label** field:



The **main-menu** menu has been updated.

*Your theme supports 1 menu. Select which menu you would like to use.*

*Header Menu*: main-menu

*URL*: http://

*Label*: *Menu Item*

Menu Name: main-menu

Automatically add new top-level pages

**The Zine**

*URL*: http://rachelmccollin.co.uk/opensourcemagazine

*Navigation Label*: The Zine

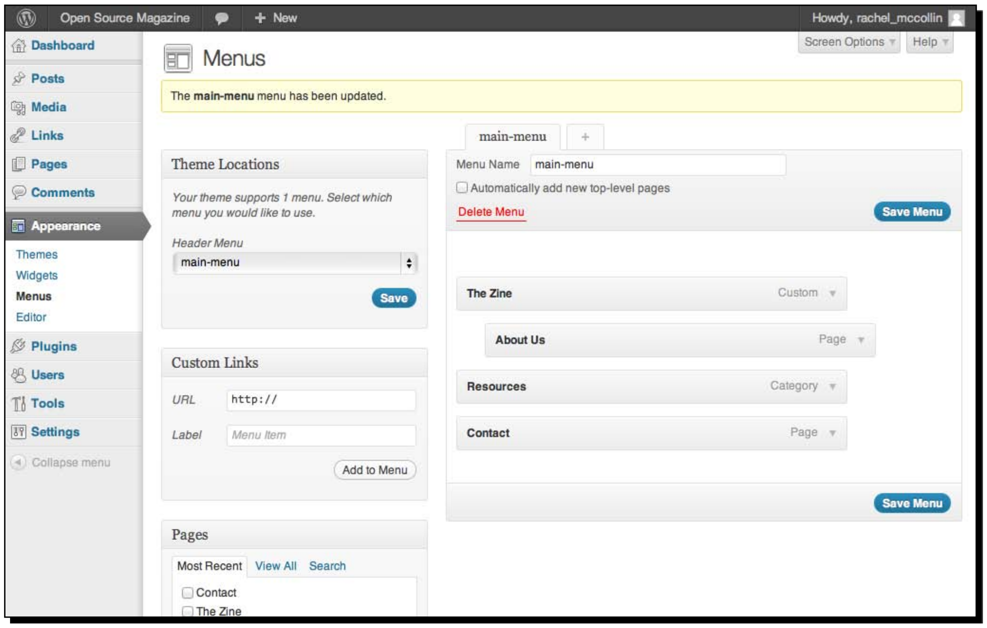
*Title Attribute*:

**About Us**

**Resources**

**Contact**

As well as this, you can change the structure of your menu by adding second level links, which will be output as a `<ul>` tag inside your top level `<li>` tag. You do this by dragging the link to the right underneath the link you want it to appear below. This is great for drop-down menus in larger sites. The following screenshot shows how this looks in the **Menus** admin screen:



The **main-menu** menu has been updated.

*Your theme supports 1 menu. Select which menu you would like to use.*

*Header Menu*: main-menu

*URL*: http://

*Label*: *Menu Item*

Menu Name: main-menu

Automatically add new top-level pages

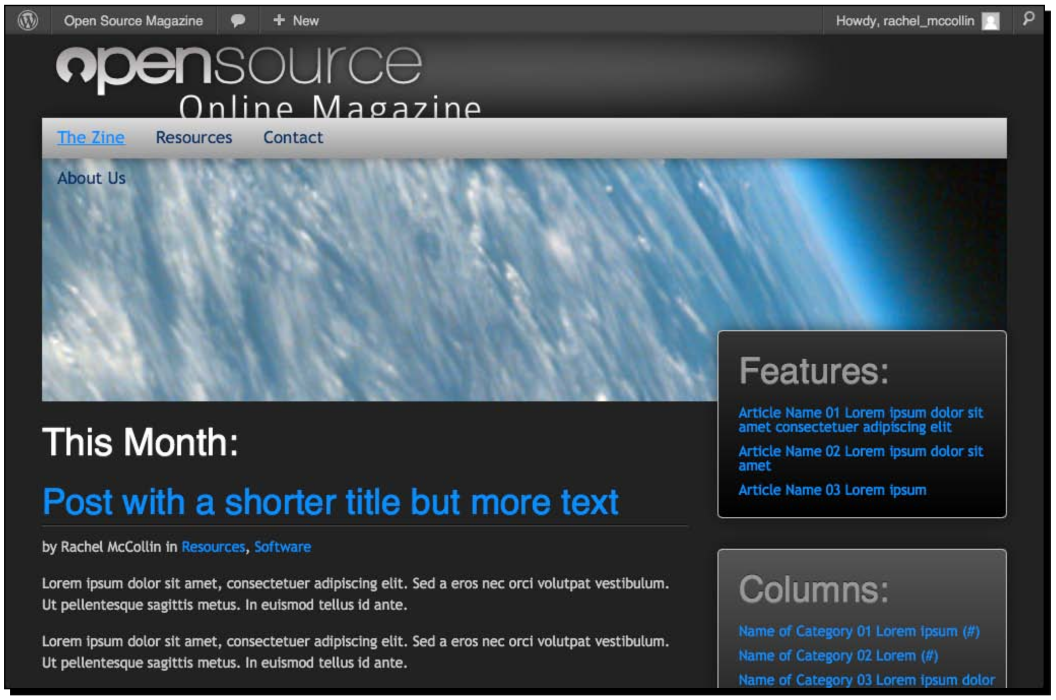
**The Zine**

**About Us**

**Resources**

**Contact**

And here's the effect in our theme:


Open Source Magazine
New
Howdy, rachel_mccollin
opensource
Online Magazine
The Zine
Resources
Contact
About Us
Features:
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum
This Month:
Post with a shorter title but more text
by Rachel McCollin in Resources, Software
Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

As you can see it doesn't quite work in this theme as we haven't added any styling for second level navigation links, but a bit of CSS would soon fix that. We'll undo this and make the menu all one level again to fit with our design.

## Widgets

If you've ever set up a WordPress site, maybe using the default theme or one you downloaded from the theme repository, chances are that you've used widgets. **Widgets** are areas in a site or theme which can be set up via the WordPress admin, meaning site owners can add their own content without having to write a line of code.

The most common place to include widgets are in the sidebar and footer, but you could use them anywhere in your theme. For example, a widget area below the content gives you somewhere to display content listings, some share buttons or a call to action button beneath every single post.

WordPress comes with a number of widgets preinstalled and you can add more with plugins. Some of the preinstalled widgets are:

- **Archives** – a list of posts by the date they were published.
- **Recent posts** – list the latest posts from your blog.
- **Text** – add some text or HTML (for example, you could use this to code a call to action button or add an image you've uploaded via the **Media** screen).
- **Categories** – a list of the categories in your blog. If the user clicks one they'll see a list of all posts in that category.
- **Custom menu** – a widget enabling you to place a custom menu in a widget area. For example, if you wanted to list your "small print" pages in the footer, you could create a menu listing them and then use this widget to display that menu in a footer widget area.
- **Tag cloud** – a tag cloud showing the categories posts have been published to, with the most popular categories shown in larger text.

There are plenty more. To see them all, just take a look at the **Widgets** admin screen in WordPress.

But before we can add any widgets to our site we need to add widget areas to our theme, these will hold the individual widgets. This is similar to adding menus and has two stages:

- In `functions.php`, register our sidebars, or widget areas
- In the relevant template files or includes, add the code to display the appropriate widget area

So let's start by registering our sidebars in `functions.php`.

## Registering sidebars or widget areas

For your theme to display any widget areas you must first register them in your theme's functions file, in much the same way as we did earlier for the menu. You can register as many as you need and then add the code to display them in the appropriate place in your theme.

## Time for action – registering sidebars in functions.php

This step involves adding some more functions below your menu's function in the theme functions file:

1. Open `functions.php`.
2. Above the closing `?>` tag, add the following:

```
function osmag_widgets_init() {
  register_sidebar (array(
    'name'          => __('Sidebar','osmag'),
    'id'            => "sidebar-widget-area",
    'before_widget' => '<li id="%1$s" class="widget %2$s">',
    'after_widget'  => '</li>',
    'before_title'  => '<h2 class="widgettitle">',
    'after_title'   => '</h2>' )
    );
  register_sidebar (array(
    'name'          => __('Left Footer','osmag'),
    'id'            => "footer-left-widget-area",
    'before_widget' => '<li id="%1$s" class="widget %2$s">',
    'after_widget'  => '</li>',
    'before_title'  => '<h2 class="widgettitle">',
    'after_title'   => '</h2>' )
    );
  register_sidebar (array(
    'name'          => __('Right Footer','osmag'),
    'id'            => "footer-right-widget-area",
    'before_widget' => '<li id="%1$s" class="widget %2$s">',
    'after_widget'  => '</li>',
    'before_title'  => '<h2 class="widgettitle">',
    'after_title'   => '</h2>' )
    );
}
add_action('init', 'osmag_widgets_init');
```

3. Save your `functions.php` file.

## What just happened?

We added the functions to register sidebars for our theme's footer and sidebar. Let's have a look at what we did.

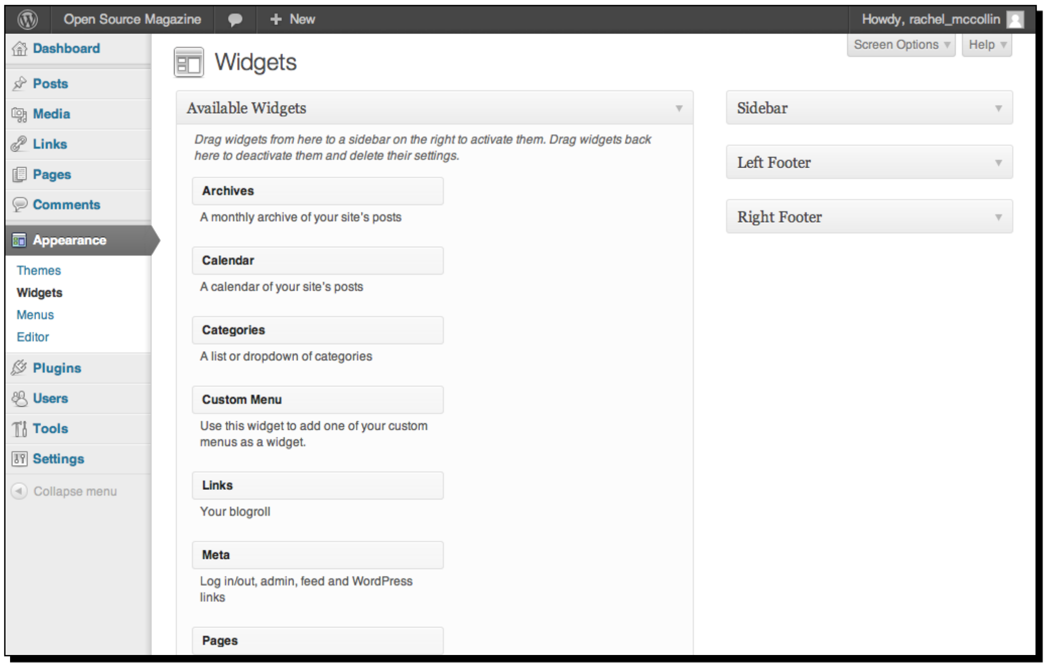
Firstly, the sidebars we registered:

- One widget area in the sidebar – it's the area most commonly used by themes for widgets. We called it `sidebar` but you don't have to, you could call it whatever you like.
- Two widget areas in the footer – this gives you the option to add two areas of content in the footer using widgets.

Now let's take a look at the code we used to register each widget area:

- The opening line function `osmag_widgets_init` defines a new function for our theme based on `widgets_init`
- The first sidebar is registered with the function `register_sidebar` and an array of parameters
- The parameters for the first sidebar are:
    - **Name**: `__('Sidebar','osmag')` defines the sidebar name. It won't work without `osmag` which echoes the function `osmag_widgets_init`.
    - **ID**: `sidebar-widget-area` is the unique ID for the widget area which we'll use shortly to add it to a template file. It's also used to give the widget area an ID which you can use for styling.
    - **HTML before each widget within the widget area**: `<li id="%1$s" class="widget %2$s">`, which opens a `<li>` tag and gives it an ID and class related to the widget name.
    - **HTML after each widget**: `</li>` closes the list item.
    - **HTML before the title of each widget**: `<h2 class="widgettitle">`, which opens an `<h2>` tag to display the title and gives it a class for styling.
    - **HTML after each widget title**: `</h2>` closes the `<h2>` element.
- The two footer sidebars are set up in the same way, with only the name and ID needing to change
- Finally, the last line beginning `add_action` adds an action based on our function to the `init` action which WordPress always runs on starting up

So, we now have our widget areas registered. You'll now see them displayed on the **Widgets** admin screen:



*Drag widgets from here to a sidebar on the right to activate them. Drag widgets back here to deactivate them and delete their settings.*

A monthly archive of your site's posts

A calendar of your site's posts

A list or dropdown of categories

Use this widget to add one of your custom menus as a widget.

Your blogroll

Log in/out, admin, feed and WordPress links

The next step is to add them to our theme.

## Time for action – adding widget areas to sidebar.php

To make our widgets work in the sidebar, we'll need to replace some of the existing code with a WordPress tag to display the correct widget area.

**1.** Open your theme's `sidebar.php` file.

**2.** Delete all of the code in the file and replace it with the following:

```
<aside class="sidebar right third">
<?php if ( is_active_sidebar( 'sidebar-widget-area' ) ) : ?>
  <div class="bdr grd-vt-main rnd shdw-centered">
    <?php dynamic_sidebar( 'sidebar-widget-area' ); ?>
  </div>
<?php endif; ?>
</aside>
```

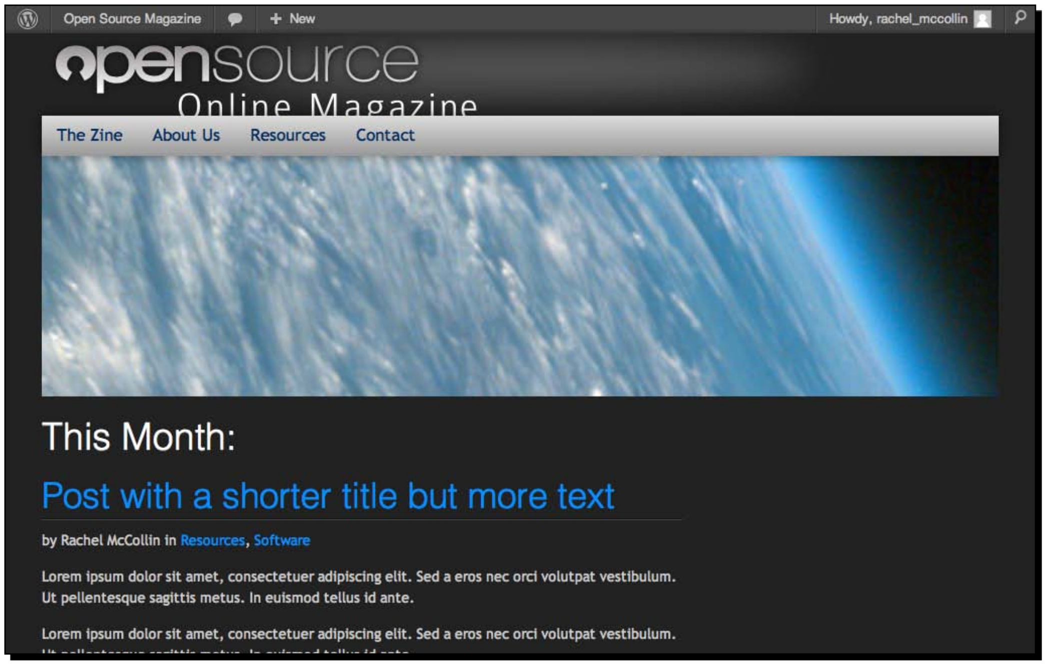
**3.** Save the `sidebar.php` file.

## What just happened?

We added a widget area to our sidebar. Let's have a look at the code in detail:

- Firstly, the `<aside>` element to contain our sidebar—which is the same as in our static mockup
- The next line checks if there are any widgets in the widget area with the ID of `sidebar-widget-area`
- If that's the case, it displays the contents of the widget area, using the `dynamic_sidebar` tag with the ID of our sidebar
- It then closes all the relevant tags

Now let's see what the site looks like in the browser:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum.

At the moment the sidebar is empty because we haven't added any widgets. We'll do that in a moment but first let's add widget areas to our footer.

## Time for action –adding widget areas to footer.php

We've added one widget area to the sidebar, now we're going to add two to the footer.

1. Open your theme's `footer.php` file.
2. Find the following code (the content of our first `<aside>` element):

```
  <h3>Socialize</h3>
  <ul class="grid4up">
    <li><a href="#" class="soc facebook">facebook</a></li>
    <li><a href="#" class="soc twitter">twitter</a></li>
    <li><a href="#" class="soc rss">rss</a></li>
    <li><a href="#" class="soc google">gmail</a></li>
  </ul>
  <div class="push"></div>
    <h3>About us</h3>
    <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit,
sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
Ut enim ad minim veniam.</p>
```

3. Copy that code somewhere safe, we'll be using it again shortly.
4. Delete the code and replace with the following:

```
<?php if ( is_active_sidebar( 'footer-left-widget-area' ) ) : ?>
  <?php dynamic_sidebar( 'footer-left-widget-area' ); ?>
<?php endif; ?>
```

5. Now find the following code (it's inside the second `<aside>` element, you don't need to save this):

```
<h3>Navigate</h3>
<ul>
  <li><a href="#" target="" title="">title to link01</a> </li>
  <li><a href="#" target="" title="">another link02</a></li>
  <li><a href="#" target="" title="">a different title: link03</
a></li>
  <li><a href="#" target="" title="">yet another link04</a></li>
</ul>
```

6. Delete that code and replace it with the following:

```
<?php if ( is_active_sidebar( 'footer-right-widget-area' ) ) : ?>
  <?php dynamic_sidebar( 'footer-right-widget-area' ); ?>
<?php endif; ?>
```

7. Save your `footer.php` file.

## What just happened?

We added two footer areas to our footer. The code works in exactly the same way as the code we used for the sidebar widget area.

If you check your site now you'll see that nothing is displayed in the footer, in fact the footer has completely disappeared. That will soon change when we add some widgets.

## Widget areas – not just for the sidebar and footer

If you wanted to, you could register more widget areas for use elsewhere in the theme, for example:

- Above the header – useful if you want to use a widget to add some important text above the site content or add a login widget here.
- Above the content – sometimes you might want to include a menu or some text above the content of all your pages and posts, without having to manually add it to every post.
- Below the content – useful for messages you want users to read after the content, lists of links for users to click after reading a post, call to action buttons, or social sharing widgets.
- A secondary sidebar – a second widget area in the sidebar. It may seem superfluous to have two widget areas in one place but it can be useful, for example when you want to add a styling element between the two widget areas, you want to position or style them differently or anything else that you can think of. I developed a site once where I used CSS to position the primary widget area across the width of the page above the content and the secondary sidebar – this was done without having to edit the PHP, simply with CSS positioning, widths, and margins.
- More footer widget areas – our theme just uses two, but some themes use three or four footer widget areas side by side, or two or three side by side and another underneath them for the colophon—the small print such as site credits and copyright.
- Custom widget areas – you might want to register a widget area which will only be used in one of your template files, or in a custom include file only called in certain circumstances. This is more advanced territory!

## Adding widgets in the Widgets admin screen

Widgets are fun! They let you add all sorts of custom content to your site without having to touch a line of code. If you're going to have people who can't code working on your site, they're a great way for them to add extra content to the site, and they're even better if you're going to release your theme to other WordPress users—people who don't understand PHP can add custom content in your widget areas using the preinstalled widgets and by adding to these by using plugins.

The possibilities from using widgets and plugins are huge!

Setting up widgets is something you've probably done before and it's very easy to do. Let's add some widgets to replicate the static code we had in our mockup before we turned it into a WordPress theme.

### What widgets will we need

The mockup included one widget area in the sidebar and two in the footer. The sidebar widget area contained three widgets, listing different kinds of content. So which widgets will do that job for us?

- Our first sidebar widget lists the three latest blog posts. We can add that using the **Latest Posts** widget, which comes preinstalled with WordPress.
- The second sidebar widget lists three categories. Again, WordPress has a preinstalled widget for that – the **Categories** widget.
- The third sidebar widget lists archives by month – the preinstalled **Archives** widget will handle that.
- Our first footer widget is for social sharing and some information about the magazine – it lists a set of links to the Open Source Magazine's presence on different social media platforms. We can add that with the **Text** widget, which lets us add some HTML.
- Our second footer widget is a list of internal links to static pages. We can use the **Custom Menu** widget to achieve that, along with a new custom menu.

Great! That means we don't have to install any plugins, and can use the widgets already at our disposal to display all the content and links we need.

Setting each of these up is pretty straightforward, so we won't go into too much detail here, but let's just look at the steps involved.

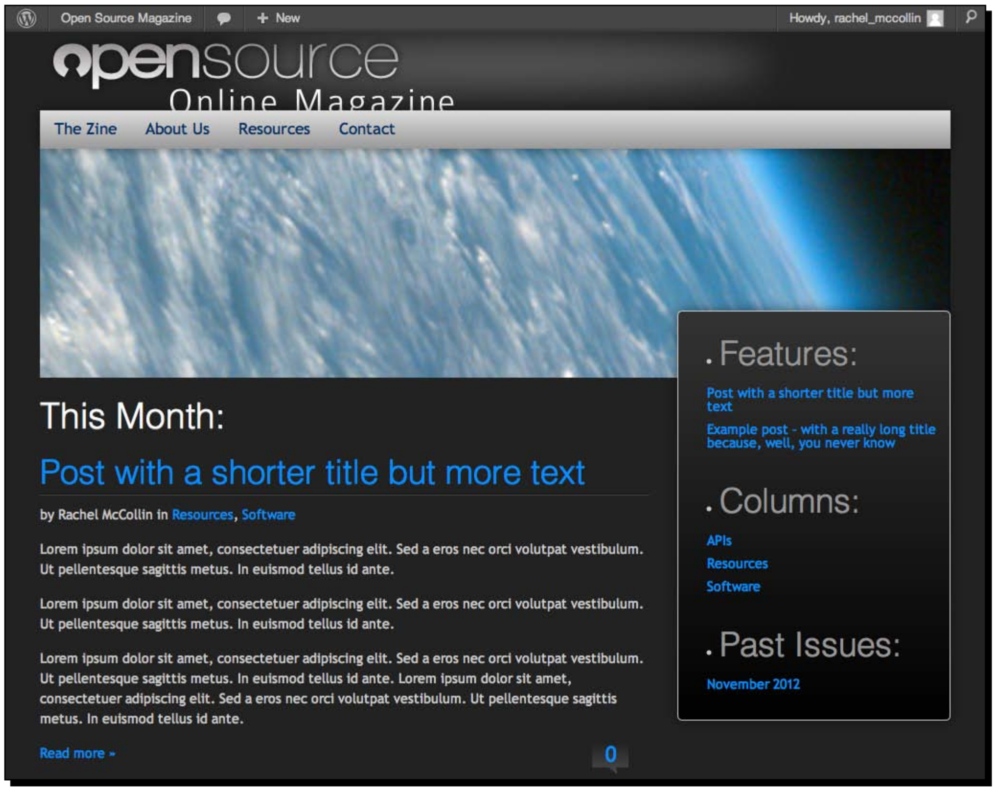
## Time for action – adding sidebar widgets

We add sidebar widgets in the **Widgets** admin screen, which you access via **Appearance** | **Widgets**.

1. Drag the **Recent Posts** widget (in the list of available widgets on the left) to the sidebar widget area on the right.
2. Give it a title of `Features:` and type `3` in the **Number of posts to show** field.
3. Click on **Save** to save the widget.
4. Drag the **Categories** widget to the sidebar widget area and give it a title of `Columns:`. Click on **Save** to save it.
5. Drag the **Archives** widget to the sidebar widget area and give it a title of `Past Issues:`. Click on **Save** to save it.

## What just happened?

We added three widgets to our sidebar. Now let's see how they look in the live site:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

You'll notice that the styling is a little bit off:

- There's a bullet point before each of our headings. That's because WordPress automatically puts each widget inside a `<li>` tag. We can easily fix that with some CSS to tell browsers to display lists in the sidebar differently:

  ```
  aside li {
    list-style-type: none;
  }
  ```

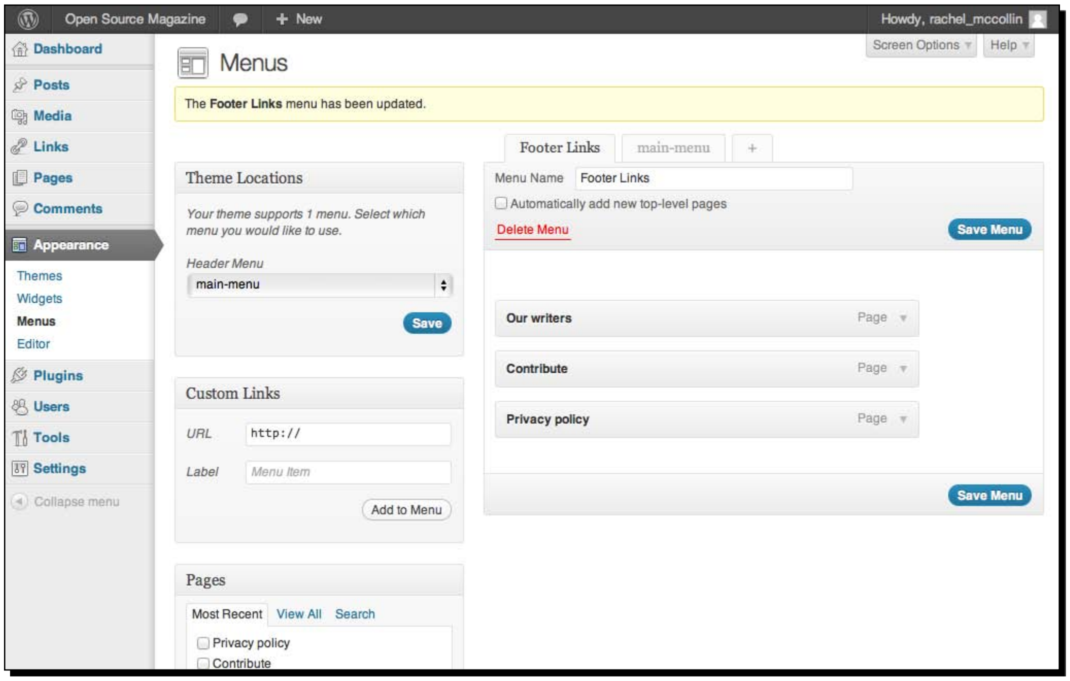
- You'll also notice that all of the sidebar widgets are displayed in one box with the same styling, rather than in three separate boxes like our mockup. That's because the mockup uses three separate `<aside>` elements while we've used just one. There are three ways we could fix this:
  - Add three separate widget areas to our sidebar (instead of one widget area with three widgets), each in an `<aside>` with the appropriate styling—not best practice as it's adding lots of extra HTML just to achieve styling
  - Apply the styling we set for the mockup to the new classes WordPress has given to our widgets inside the widget area
  - A better approach is to use the same classes and IDs that WordPress uses when we're creating our mockup, that way the design will work perfectly with no tweaks

We won't worry about that too much now as the site still looks fine, but if you want to tinker with the CSS, go ahead!

## Time for action – adding footer widgets

Now we have our sidebar widgets in place, let's add the footer widgets. We'll need to set up a custom menu first, so that we can display it using the **Custom Menu** widget for the **Navigate:** footer area from our mockup.

1. Now switch to the **Menus** screen, by going to **Appearance** | **Menus**. Add a new menu using the same method we used previously to create our navigation menu, starting by clicking on the **+** tab next to the tab for our existing menu. We'll call this menu **Footer Links**.
2. Add the relevant pages to the new menu and save it. You'll see from the following screenshot that we've added some more static pages to the site for use in this menu:



The **Footer Links** menu has been updated.

Theme Locations

*Your theme supports 1 menu. Select which menu you would like to use.*

*Header Menu*: main-menu

Menu Name: Footer Links

☐ Automatically add new top-level pages

Our writers — Page

Contribute — Page

Privacy policy — Page

Custom Links

*URL*: `http://`

*Label*: *Menu Item*

Pages

☐ Privacy policy

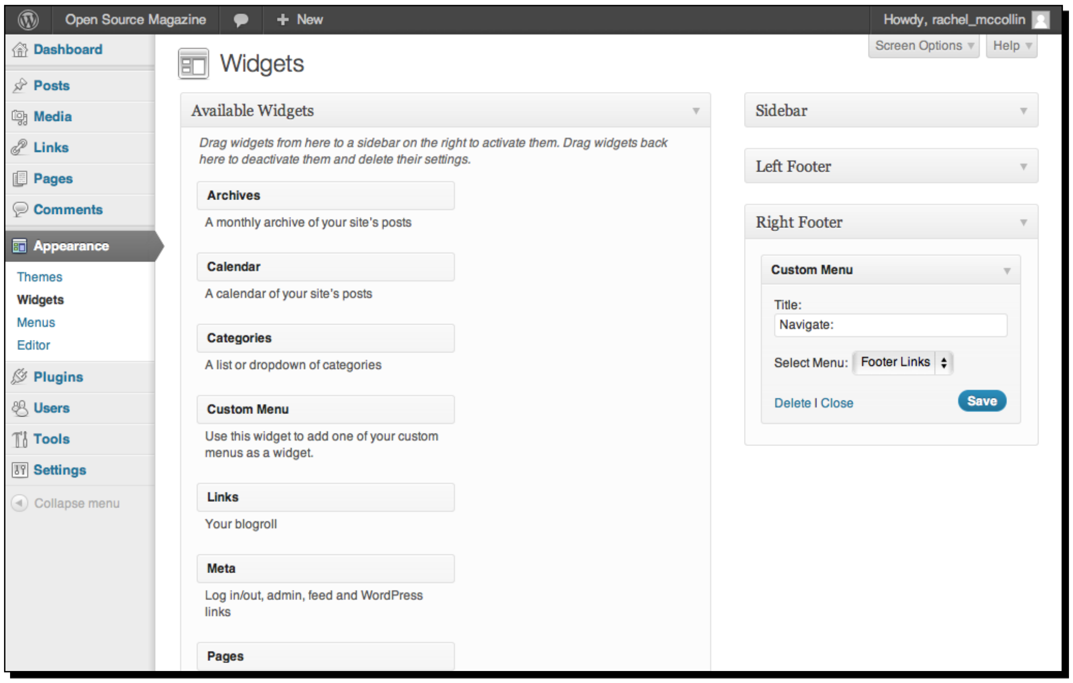
☐ Contribute

3. Save the menu and switch to the **Widgets** page by going to **Appearance** | **Widgets**.
4. First, set up the text widget. Drag the **Text** widget over to the **Left Footer** widget area.
5. In the text box, copy the HTML you saved earlier form the old footer:

```
<h3>Socialize</h3>
  <ul class="grid4up">
    <li><a href="#" class="soc facebook">facebook</a></li>
    <li><a href="#" class="soc twitter">twitter</a></li>
    <li><a href="#" class="soc rss">rss</a></li>
    <li><a href="#" class="soc google">gmail</a></li>
  </ul>
<div class="push"></div>
<h3>About us</h3>
  <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed
do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut
enim ad minim veniam.</p>
```

6. Drag the **Custom Menu** widget to the **Right Footer** widget area.

7. In the drop-down menu, select the menu you've just added. In our case, the **Footer Links** menu, as shown in the following screenshot:



Drag widgets from here to a sidebar on the right to activate them. Drag widgets back here to deactivate them and delete their settings.

Archives: A monthly archive of your site's posts

Calendar: A calendar of your site's posts

Categories: A list or dropdown of categories

Custom Menu: Use this widget to add one of your custom menus as a widget.

Links: Your blogroll

Meta: Log in/out, admin, feed and WordPress links

Title: Navigate:

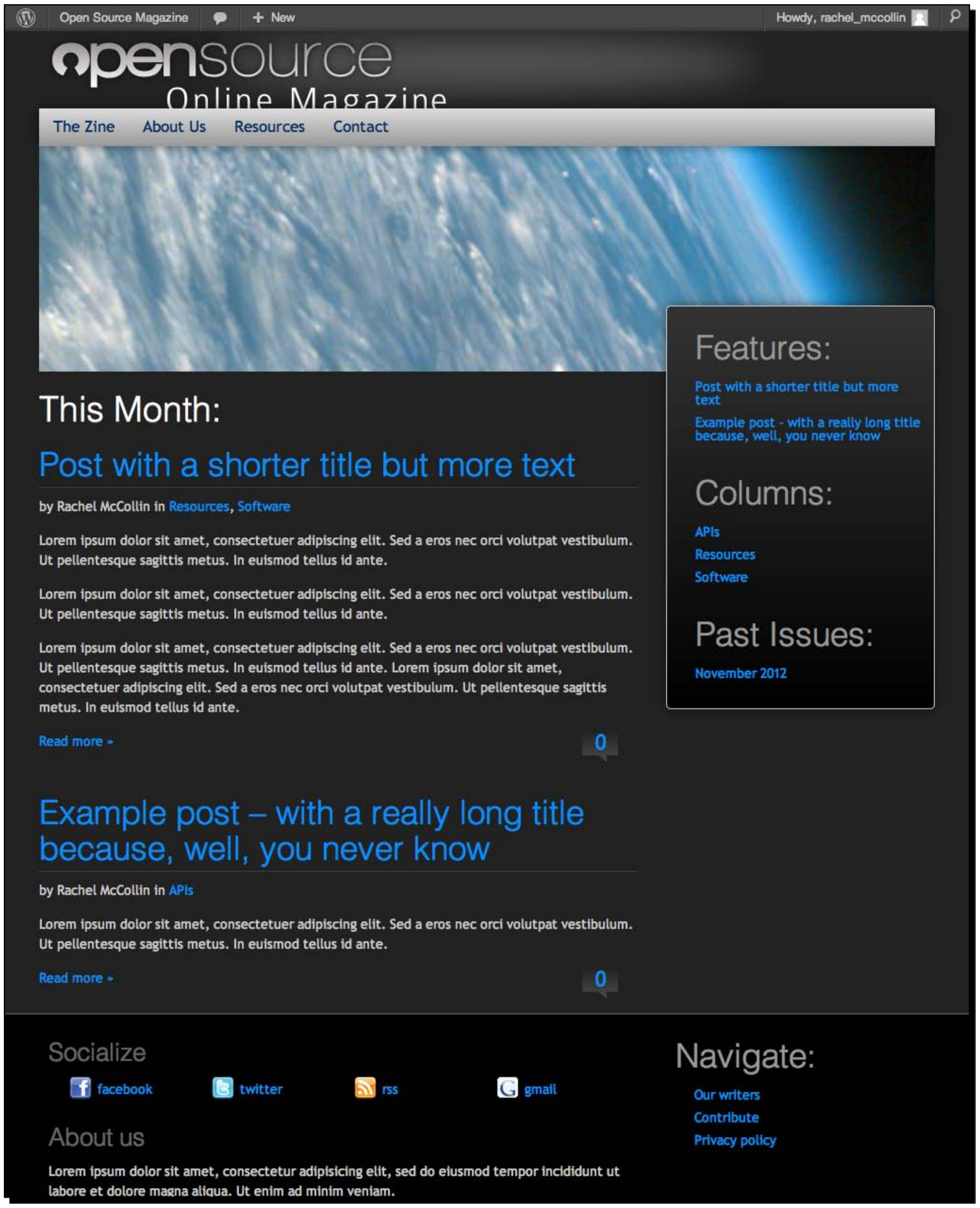
Select Menu: Footer Links

8. Save the widget.

## What just happened?

We added five new widgets to our widget areas, to display the content we need. We also set up a new menu and copied some HTML that was used in our mockup for a text widget.

So, how do our widgets look? Switch to your browser and refresh the screen to check.



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

The footers look exactly as they should—no tweaks necessary. Well done!

## Featured images

If you've built a site before using the default Twenty Eleven theme, you may have used its featured image functionality.

**Featured images** are images which you add to a page or post outside the content of the post or page itself, as opposed to an image, which you would add into the flow of the content. WordPress can then display your featured images however you want, for example on an archive page it can display a small version of the featured image for each post above or next to its excerpt.

Featured images were introduced with WordPress Version 2.9, before that many developers created a special custom field, but it wasn't an ideal workaround. Featured images are a feature of WordPress that make theme builders and site owners' lives easier.

So let's add them to our theme.

## Time for action – adding featured images to our theme

For our theme to display featured images, we need to follow two steps – adding a new function for featured image support to `functions.php`, and then add some code to display the featured images to our template files.

1. Open your theme's `functions.php` file.
2. Above the closing `?>` PHP tag, add the following code:

   ```
   add_theme_support( 'post-thumbnails' );
   ```

3. Save your `functions.php` file.
4. Open your theme's `index.php` file.
5. In the loop, insert a line break between the opening of `<div class="entry-content">` and above the PHP call for the content itself.
6. Add the following code:

   ```
   <?php if ( has_post_thumbnail() ) {
     the_post_thumbnail('large');
   } ?>
   ```

7. Save the file.
8. Now open your theme's `page.php` file and repeat step 2 to step 4.

## What just happened?

We added the code needed to display featured images for each post and page. Let's look at that code in detail:

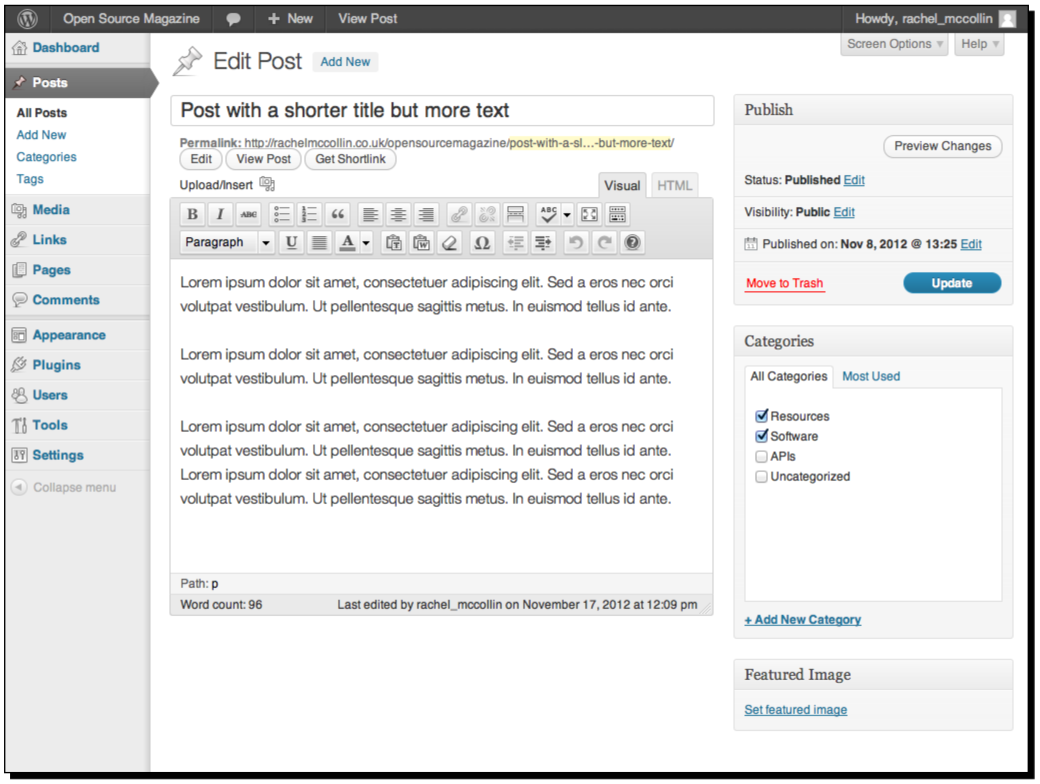
- First, it checks if the post or page has a thumbnail (or featured image) assigned to it
- If so, it displays the image using the `large` size

Now let's add some featured images to our site and see how they look.

## Time for action – adding featured images to the site

Adding featured images is done in the admin screen for each page or post.

1. Open the editing screen for a post or page, as shown in the following screenshot:



Post with a shorter title but more text

Permalink: http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-sl...-but-more-text/

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Path: p

Word count: 96 Last edited by rachel_mccollin on November 17, 2012 at 12:09 pm

Status: Published Edit

Visibility: Public Edit

Published on: Nov 8, 2012 @ 13:25 Edit

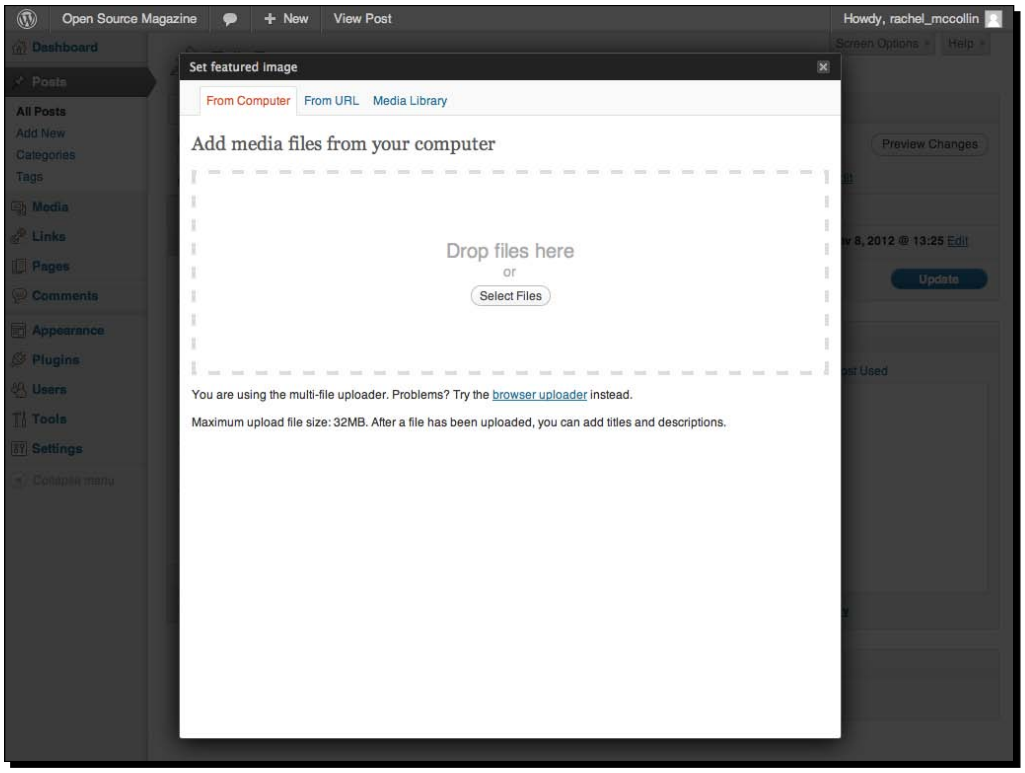
[✓] Resources
[✓] Software
[ ] APIs
[ ] Uncategorized

2. On the right-hand side, below the **Categories** box, is the box for uploading featured images.

**Can't see a featured images box?**

If you can't see the box for uploading featured images, it's because you don't have the functionality in your theme. Your theme's `functions.php` file must have the code we added previously in order for this box to show up.

3. Click on **Set featured image** to open the featured images pop up:



Add media files from your computer

You are using the multi-file uploader. Problems? Try the browser uploader instead.

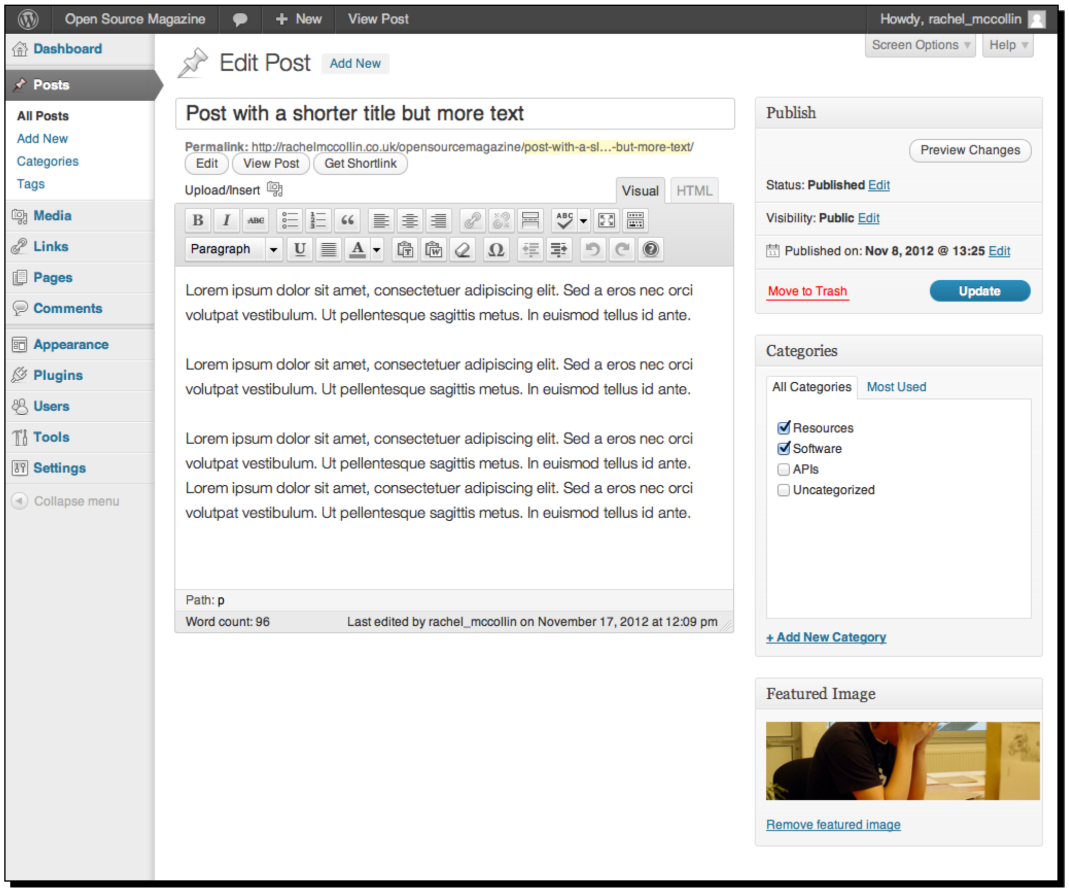
Maximum upload file size: 32MB. After a file has been uploaded, you can add titles and descriptions.

4. Upload your image as you would for any other image.
5. Once you've uploaded the image, *don't* click on the **Insert into Post** button, instead, click on **Use as featured image**.
6. Click on the **Save all changes** button to return to the post editing screen.

***7.*** To close the featured images pop up, click on the small **X** sign in the upper-right corner.

***8.*** Click on the **Update** button to save the changes to your post or page.

***9.*** You will now see your featured image displayed in the editing screen:



Post with a shorter title but more text

Permalink: http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-sl...-but-more-text/

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Path: p

Word count: 96 Last edited by rachel_mccollin on November 17, 2012 at 12:09 pm

Status: **Published** Edit

Visibility: **Public** Edit

Published on: **Nov 8, 2012 @ 13:25** Edit

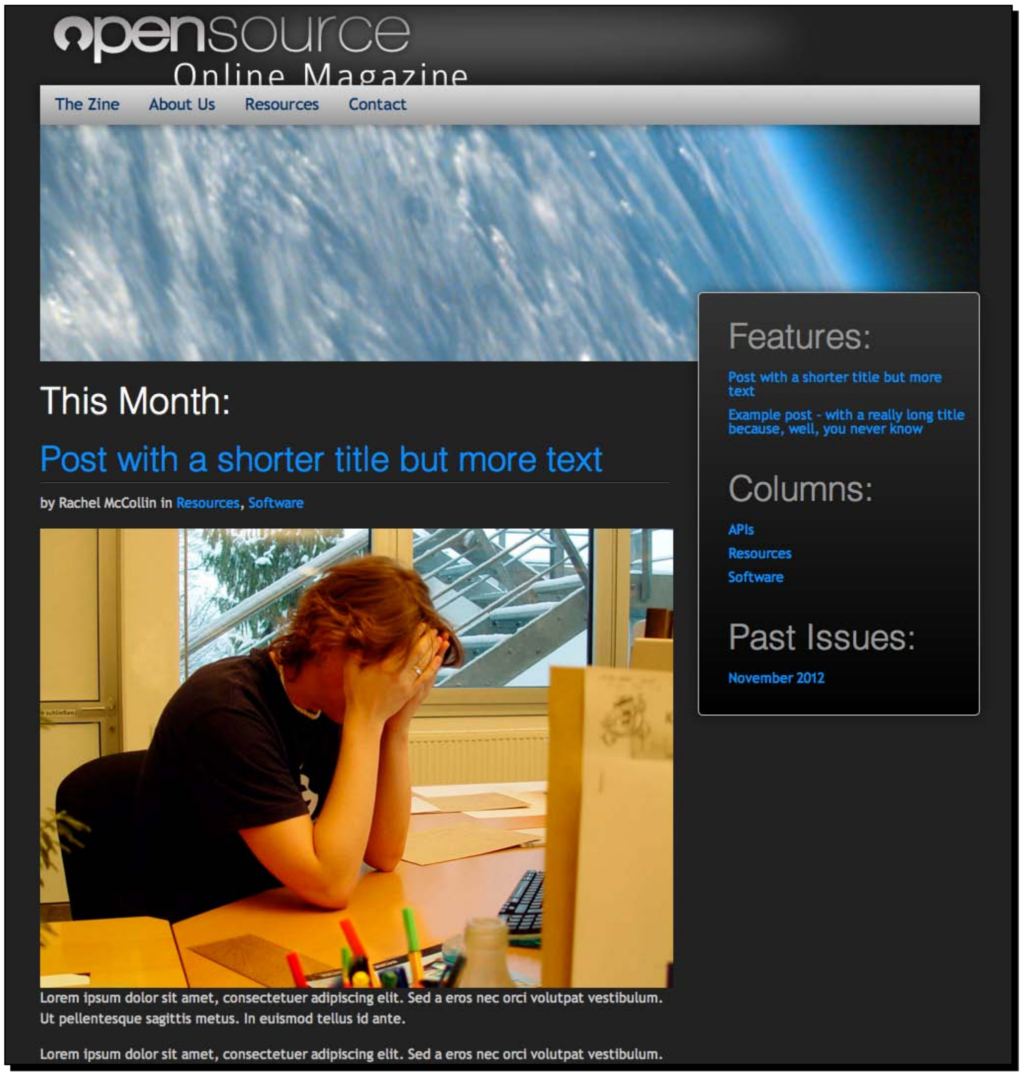
- [✓] Resources
- [✓] Software
- [ ] APIs
- [ ] Uncategorized

***10.*** Repeat steps 3 to step 8 for some more posts and pages.

## What just happened?

We added featured images to some of the pages and posts in our site. Now let's see how they look on the site.

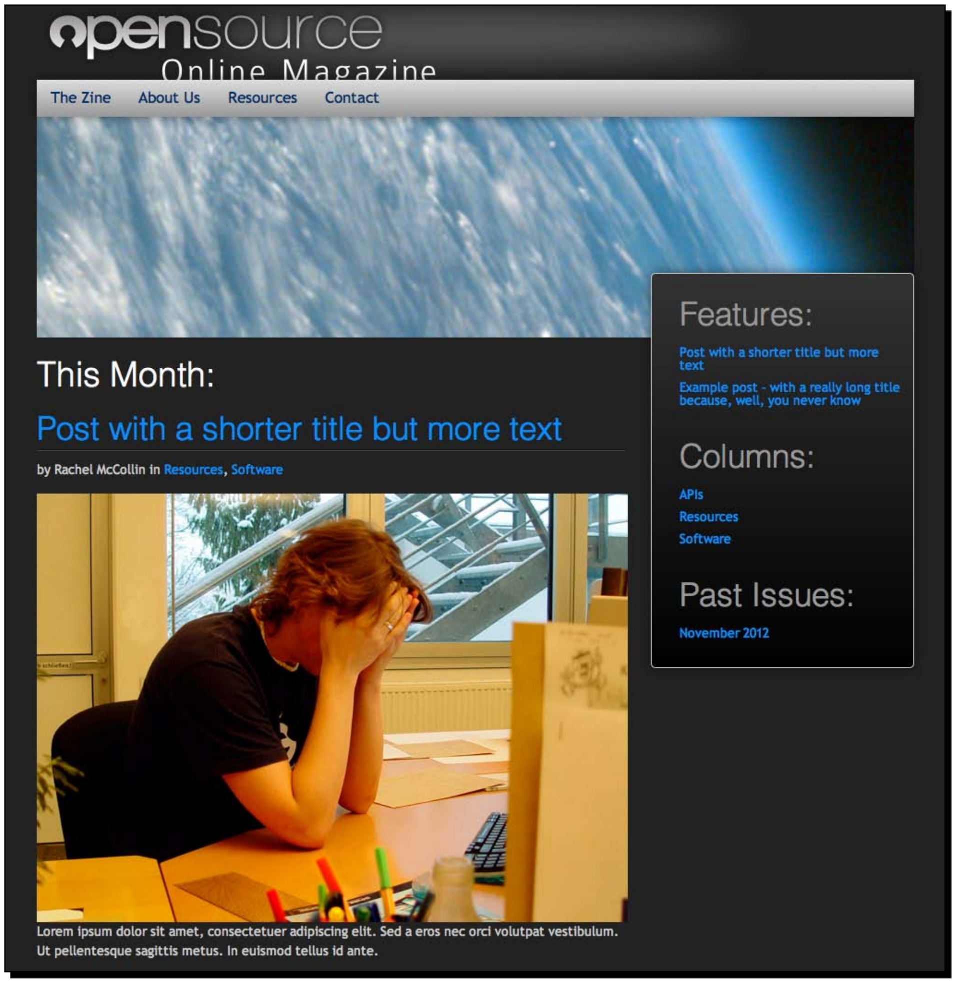
First, in a single post:


opensource
Online Magazine
The Zine
About Us
Resources
Contact
This Month:
Post with a shorter title but more text
by Rachel McCollin in Resources, Software
Features:
Post with a shorter title but more text
Example post - with a really long title because, well, you never know
Columns:
APIs
Resources
Software
Past Issues:
November 2012

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum.

Next, on our home page which lists all of our posts:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

The image on the single post looks great and fits well into our layout. But the images on the home page are a bit large. Luckily, WordPress makes it easy for us to change that. We can set up a new template file just for single posts, and then edit our `index.php` file so it displays smaller featured images. This means when any archive listings are using `index.php`, they will display the smaller image.

There is an alternative way to do this. We could set up an `archive.php` file for displaying all our archive listings, and leave `index.php` as it is. Or we could use both `single.php` and `archive.php`, for even greater control. As you get more advanced with your WordPress theme development, you'll find that there's often more than one way to solve a problem, and that the best one may be simply the one that works best for you.

## Time for action – displaying featured images differently in different template files

To do this, we'll need to create a new file called `single.php`, and edit the `index.php` file as well.

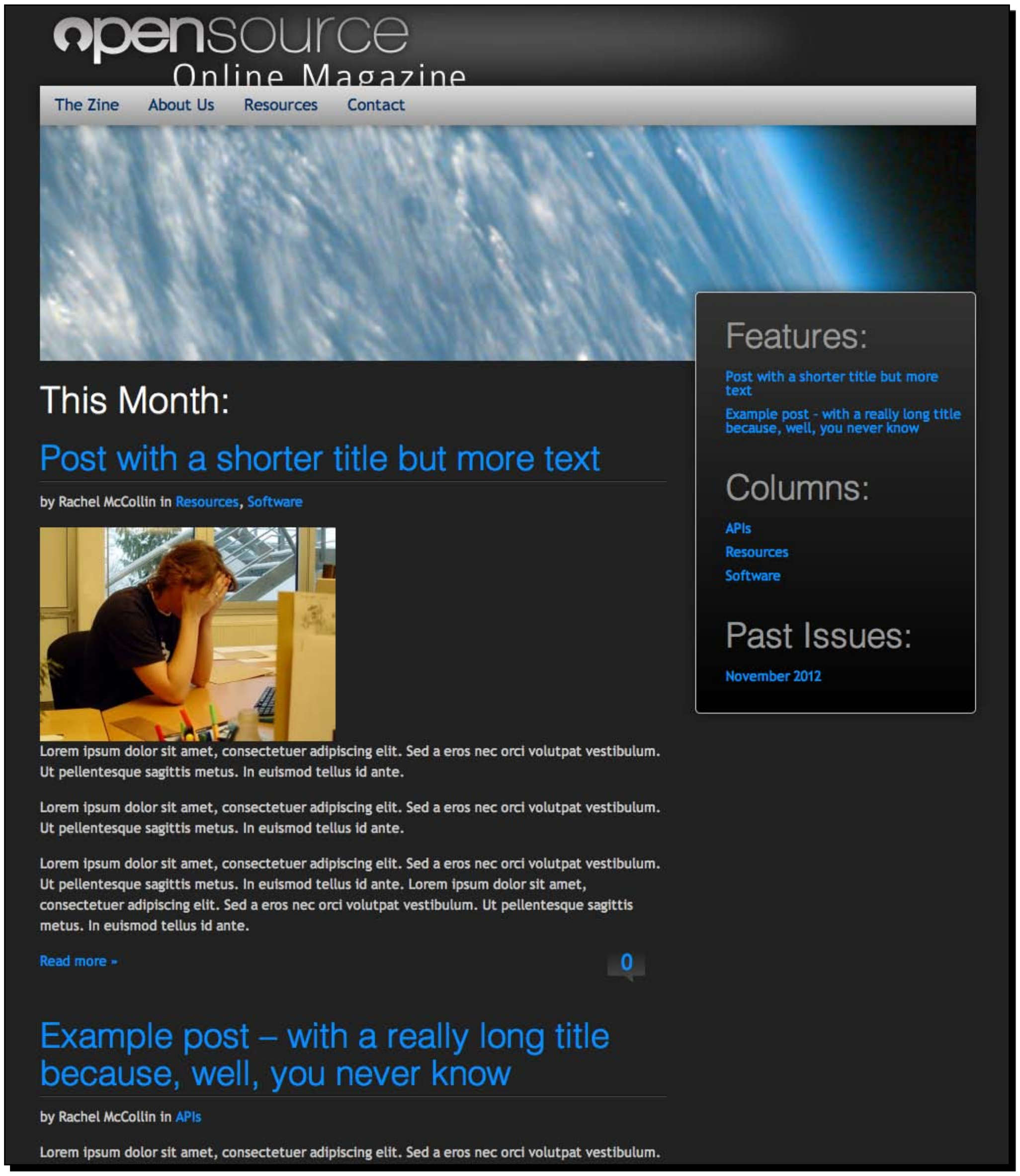
1. Make a copy of your theme's `index.php` file and call it `single.php`. Save it to your theme directory.
2. Open `index.php` and find the code you added for displaying featured images:
   ```
   <?php if ( has_post_thumbnail() ) {
     the_post_thumbnail('large');
   } ?>
   ```
3. Edit that code so it reads:
   ```
   <?php if ( has_post_thumbnail() ) {
     the_post_thumbnail('medium');
   } ?>
   ```
4. Save the `index.php` file.

## What just happened?

We created a new file called `single.php`. The reason we copied `index.php` for this and not `page.php` is that we want single posts to include post metadata. You may remember that in *Chapter 3*, *Coding it Up,* we deleted the code to display that metadata, which was why we set up the `page.php` file in the first place.

We then edited the `index.php` file so that any pages on your site using that file to display content will display a smaller image.

Let's see how our home page looks now:



opensource
Online Magazine

The Zine About Us Resources Contact

Features:

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

Columns:

APIs

Resources

Software

Past Issues:

November 2012

This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

0

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum.

It needs a bit of styling, maybe floating the text to the left of the image for example, but it's already much better—the images aren't so dominant and we can see more content.

**Featured image sizes**

When we upload an image to the media gallery, either directly into the gallery or into a post or page, WordPress saves the uploaded image plus up to three versions of it:

The **thumbnail**, a version of the photo which is cropped to a square, whose default size is 150 px x 150 px.

The **medium** size, with a default maximum size of 300 px x 300 px. This size doesn't involve cropping so if the image isn't square, then one side will be less than 300 px.

The **large** size, with a default maximum of 640 px x 640 px, again not cropped.

WordPress will only save each of these images if the original image is large enough. so if, for example, we load an image 500 px x 400 px, it will save the original image plus the thumbnail and medium sizes but not the large size. It's a good idea to upload images which are the same size as the large size in your theme, to save on server space, but sometimes it may be necessary to upload a wider image and use it in full size, for example for a full width banner.

If the featured image sizes don't fit in your design, you can always change them via the **Settings** | **Media** screen.

## Parent and child themes

This topic doesn't apply to the Open Source Online Magazine but it's worth explaining as it's a really useful feature of WordPress theme development.

Say you've been working with the Open Source Online Magazine theme or another one you've developed yourself or downloaded. You decide you want to build a second theme or site with a similar layout and design, or with the content structured in a similar way, but you don't want to start again from scratch.

You could just edit the theme you've already got to create a brand new one. But if your changes aren't huge, it may be better to build a child theme.

A **child theme** is a theme which is associated with another theme, called the **parent theme**. It takes most of its styling and content from the parent theme but has a few things which are different say, for example the archive listings are displayed differently. To do this, you would set up a child theme with its own stylesheet (all child themes need a stylesheet as we'll see shortly), and an `archive.php` file. It wouldn't need any other files—not even an `index.php` file, as it would take that from the parent theme.

To tell WordPress that a theme is the child of another theme, you have to add some text to the very top of its stylesheet—the `style.css` file:

```
/*
Theme Name:      My child theme
Theme URI:       http://example.com/
Description:     Child theme for the Open Source Magazine theme
Author:          Your name here
Author URI:      http://example.com/about/
Template:        opensourcemagazine
Version:         1.0
*/
```

Some notes on this text:

- It's commented out, browsers won't read it but WordPress will
- The theme must have a name and a template, the other information is optional
- The template is the parent theme – here you need to enter the directory your parent theme is in, in your themes directory (not its name)

Below this commented out code, you add a call to the parent theme's stylesheet:

```
@import url("../opensourcemagazine /style.css");
```

After this, you add any styling that's specific to the child theme. You don't need to repeat any styling that's in the parent theme.

When activating your theme in the WordPress theme's admin screen, you simply activate the child theme—WordPress does the rest for you.

Child themes are a great way to build up your own bank of great WordPress themes with less effort than it takes to develop them all from scratch. For more on child themes see `http://codex.wordpress.org/Child_Themes`.

## Pop Quiz – understanding advanced theme features

Q1. What are pretty permalinks?

1. Images in a theme's design which make the site look pretty.
2. User-friendly URLs which use post titles instead of numerical IDs.
3. URLs which are better for SEO.

Q2. Where might you add a widget area to your themes?

1. In the `sidebar.php` file.
2. In the `footer.php` file.
3. In the `header.php` file.
4. All of the above.

Q3. What steps do you need to take to add a menu to a theme?

1. Register the menu in the `functions.php` file, add it to the correct place in the theme (normally in `header.php`) and set it up in the **Menus** admin screen.
2. Register a widget area and then add that to the `header.php` file.
3. Add the `wp_nav_menu()` code to `header.php` then set up the menu using the **Menus** admin screen.
4. Code the links directly into the `header.php` file.

Q4. I'm building a child theme. My parent theme and child theme both have an `index.php` and a `style.css` file. My parent theme has an `archive.php` file and my child theme has a `page.php` file. When I visit a category listing on my site, which template file will be used to display it?

1. `index.php` from the parent theme.
2. `index.php` from the child theme.
3. `archive.php` from the parent theme.
4. `page.php` from the child theme.

## Summary

In this chapter, we took our theme building skills to the next level, and added some more advanced functionality to our theme.

Specifically, we covered:

- Site settings, including the site title and description, and the code needed to display these in our theme
- Setting up "pretty" permalinks to make your site more user-friendly and improve search engine rankings
- Adding menus to our theme and configuring them in the Menus admin screen
- Registering multiple widget areas and adding widgets to them
- Adding featured image functionality to our theme and customizing where and how images are displayed
- Child themes – understanding how they work and their benefits

We now have a great theme in place, which reflects our original design and incorporates some advanced theme features. The next step is to test that it validates and is free of bugs, which we'll do in the next chapter.

# 5
# Debugging and Validation

*In this chapter, we'll cover the advantages of debugging and validating your theme. We'll learn about validation and the validation services available online, and use them to validate our theme. Then we'll cover browser compatibility—a look at some of the most common reasons why markup and CSS don't always work how you expect them to, especially in* **Internet Explorer (IE)***, and the various ways to remedy the problems.*

As you work further and develop your own WordPress themes, you'll find that things will be much smoother if you debug and validate at each step of your theme development process, using a process we'll cover in detail in this chapter.

Depending on how your theme fares when validated and tested, you may not need to follow all of the steps here, but you may find them useful at a later date.

So let's get on with it.

## Debugging and validation workflow

It's a good idea to adopt a consistent workflow when it comes to testing your code, which could look something like the following:

- Add some code
- Check if the page looks good in a modern browser
- Validate
- Check it in IE and other browsers you're using

- Make any necessary changes
- Validate again, if necessary
- Add the next bit of code
- Repeat, as necessary, until your theme is complete

So, having added your code, the first step is to validate and debug it. Let's look at some browser tools you'll use to help you do this, and then have a look at validation.

## Browser tools for debugging

Before you start debugging your code, it's helpful to get to know the tools that come with your browser to help you with this. Let's look at what's available.

### Firefox

Firefox has traditionally been the web developer's browser of choice because of the great developer tools it offers. However, in the last year or so, more developers are using Chrome as that also has developer tools, as well as the benefit of being slightly more reliable in terms of rendering code.

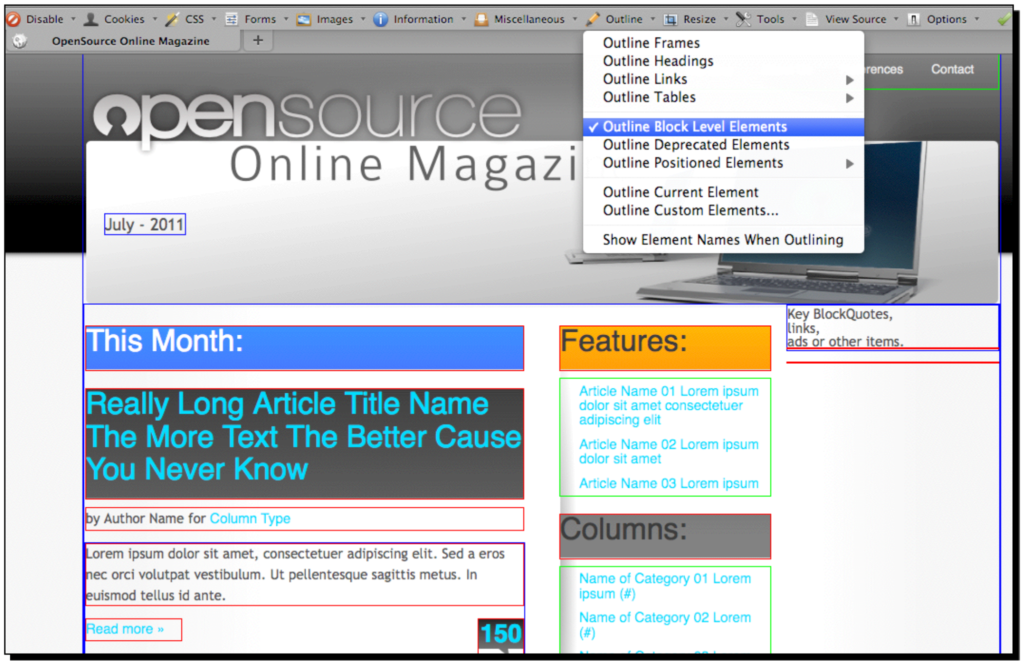
Let's look at some of Firefox's developer tools.

#### The Web Developer toolbar

This extension adds a toolbar to the Firefox browser. You can download it from `http://chrispederick.com/work/web-developer/`.

The toolbar lets you link directly to the W3C's HTML5 and CSS validation tools. It also lets you toggle and view your CSS output in various ways, and lets you view and manipulate a myriad of information your page is outputting on-the-fly.

The following screenshot shows some of the options available with the Web Developer toolbar:


Disable
Cookies
CSS
Forms
Images
Information
Miscellaneous
Outline
Resize
Tools
View Source
Options
OpenSource Online Magazine
Outline Frames
Outline Headings
Outline Links
Outline Tables
✓ Outline Block Level Elements
Outline Deprecated Elements
Outline Positioned Elements
Outline Current Element
Outline Custom Elements...
Show Element Names When Outlining
opensource
Online Magazi
July - 2011
This Month:
Really Long Article Title Name The More Text The Better Cause You Never Know
by Author Name for Column Type
Read more »
150
Features:
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum
Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Key BlockQuotes, links, ads or other items.
Contact

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

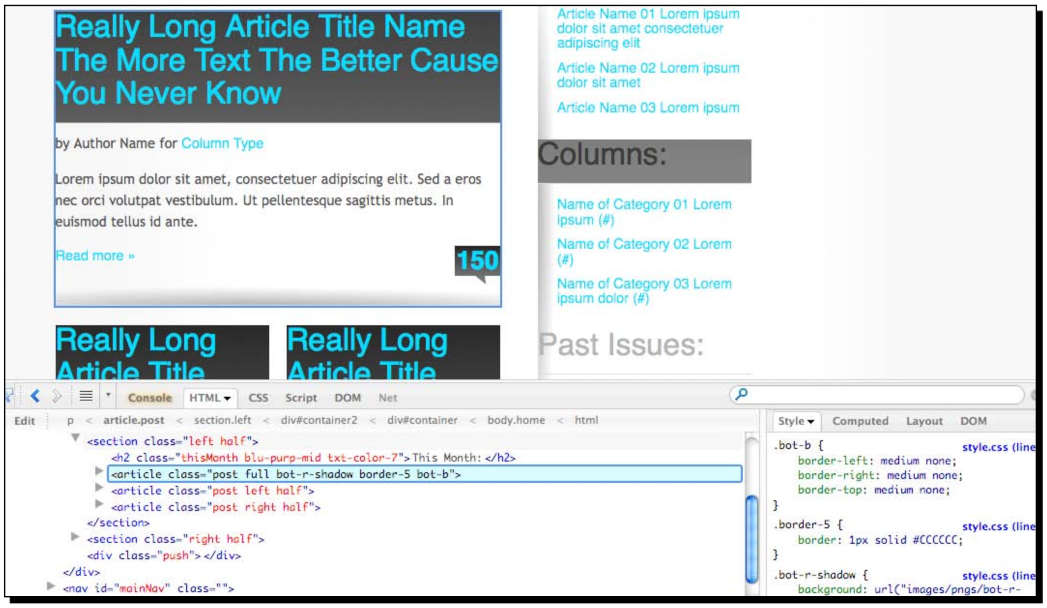
## Firebug

A more robust tool is the Firebug extension for Firefox, available at `http://www.getfirebug.com/`.

Firebug includes features for reviewing HTML, CSS, and the **Document Object Model** (**DOM**). Also, the latest version of Firebug lets you make edits on-the-fly to easily experiment with different fixes before committing them to your actual document.

The Document Object Model, or DOM, defines the structure of the markup in your HTML pages. For more, see `http://www.w3.org/TR/DOM-Level-2-Core/introduction.html`.

The following screenshot shows how Firebug displays source code:



Really Long Article Title Name The More Text The Better Cause You Never Know
by Author Name for Column Type
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.
Read more »
150
Really Long Article Title
Really Long Article Title
Article Name 01 Lorem ipsum dolor sit amet consectetuer adipiscing elit
Article Name 02 Lorem ipsum dolor sit amet
Article Name 03 Lorem ipsum
Columns:
Name of Category 01 Lorem ipsum (#)
Name of Category 02 Lorem (#)
Name of Category 03 Lorem ipsum dolor (#)
Past Issues:
Console HTML CSS Script DOM Net
Edit p < article.post < section.left < div#container2 < div#container < body.home < html
Style Computed Layout DOM

```
<section class="left half">
    <h2 class="thisMonth blu-purp-mid txt-color-7">This Month: </h2>
    <article class="post full bot-r-shadow border-5 bot-b">
    <article class="post left half">
    <article class="post right half">
</section>
<section class="right half">
<div class="push"> </div>
</div>
<nav id="mainNav" class="">
```

```
.bot-b {                              style.css (line
    border-left: medium none;
    border-right: medium none;
    border-top: medium none;
}
.border-5 {                           style.css (line
    border: 1px solid #CCCCCC;
}
.bot-r-shadow {                       style.css (line
    background: url("images/pngs/bot-r-
```

There's also a Firebug Lite version for Internet Explorer, Safari, and Opera available at `http://www.getfirebug.com/`. Once you have Firebug installed in your browser, you can turn it off and on by hitting *F12* or going to **View** | **Firebug**.

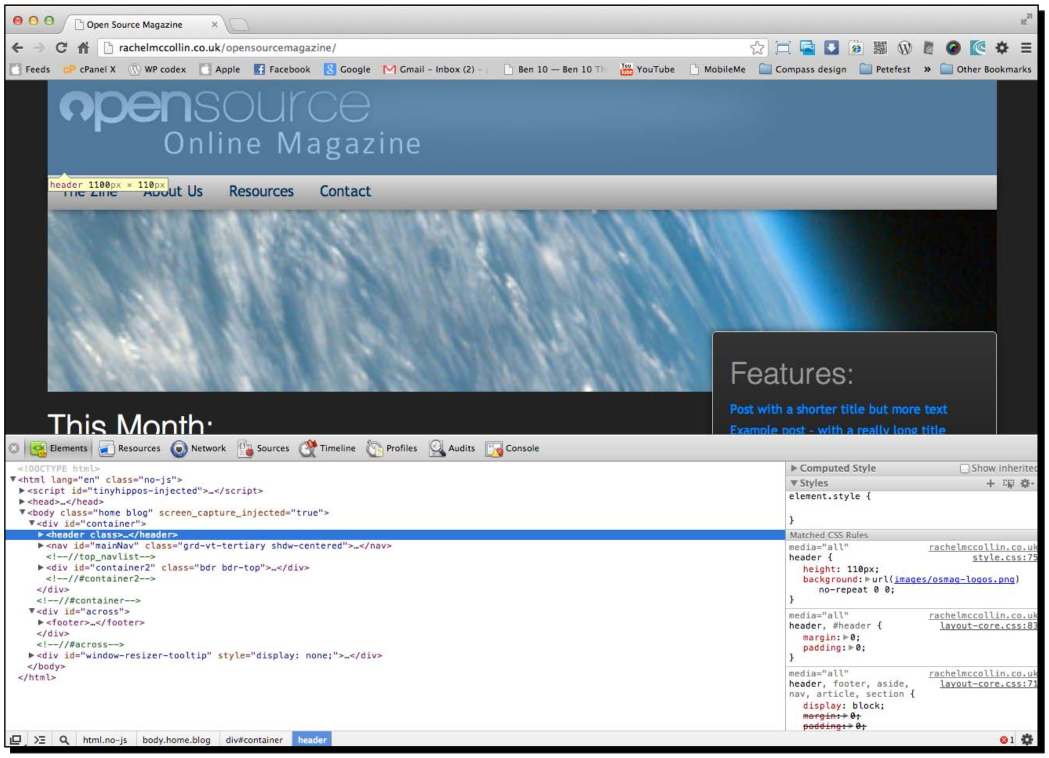
## Google Chrome

Google Chrome also includes developer tools, which come bundled with Chrome—you don't need to download any extensions. You can find out about them at `https://developers.google.com/chrome-developer-tools/docs/overview`.

To access the developer tools, click on **View** | **Developer**. This presents you with a list of three types of tools:

- **View Source**, which gives you a full-screen view of the source code in a new tab
- **Developer Tools**, which displays the source code alongside the open page, using a number of panels to display different items, such as elements, resources, and sources
- **JavaScript Console**, which displays the JavaScript console, enabling you to see how JavaScript is operating and debug it

The screenshot shows the **Elements** pane as seen using the **Developer Tools** option, with the `header` element in the page highlighted.



```
<!DOCTYPE html>
▼<html lang="en" class="no-js">
  ▶<script id="tinyhippos-injected">…</script>
  ▶<head>…</head>
  ▼<body class="home blog" screen_capture_injected="true">
    ▼<div id="container">
      ▶<header class>…</header>
      ▶<nav id="mainNav" class="grd-vt-tertiary shdw-centered">…</nav>
        <!--//top_navlist-->
      ▶<div id="container2" class="bdr bdr-top">…</div>
        <!--//#container2-->
      </div>
      <!--//#container-->
    ▼<div id="across">
      ▶<footer>…</footer>
      </div>
      <!--//#across-->
    ▶<div id="window-resizer-tooltip" style="display: none;">…</div>
    </body>
  </html>
```

```
element.style {

}
media="all"                          rachelmccollin.co.uk
header {                                     style.css:75
   height: 110px;
   background: ▶url(images/osmag-logos.png)
      no-repeat 0 0;
}
media="all"                          rachelmccollin.co.uk
header, #header {                      layout-core.css:83
   margin: ▶0;
   padding: ▶0;
}
media="all"                          rachelmccollin.co.uk
header, footer, aside,                 layout-core.css:71
nav, article, section {
   display: block;
   ~~margin: ▶ 0;~~
   ~~padding: ▶ 0;~~
```

## Safari

The Safari browser also has developer tools, but unfortunately, since the Safari 6 update, these aren't as useful or wide-ranging as those in Chrome. So, I would always recommend developing in Chrome, if you're on a Mac.

What Safari does have, however, is a means to view code being output on an iOS device, if you're developing a theme aimed at mobile users. You can find out more about this at `http://mobile.smas.hingmagazine.com/2012/12/10/ios6-new-features-developers-mobile-safari/`.

## Validation

So, you've got your developer tools set up and have a great process in place for testing. Let's get on with validating the code in our theme.

## Validating HTML

The first step is to validate your markup. You do this using the W3C's validation service at `http://validator.w3.org/`.

## Time for action – validating your HTML

Let's see how validation works. The process for validating your code is different, depending on whether you're working locally or remotely. First, the process for working remotely:

1. Go to `http://validator.w3.org/`.
2. Type in the URL of the site running your theme—in the case of my site, it's `http://rachelmccollin.co.uk/opensourcemagazine/`.
3. Click on the **Check** button.

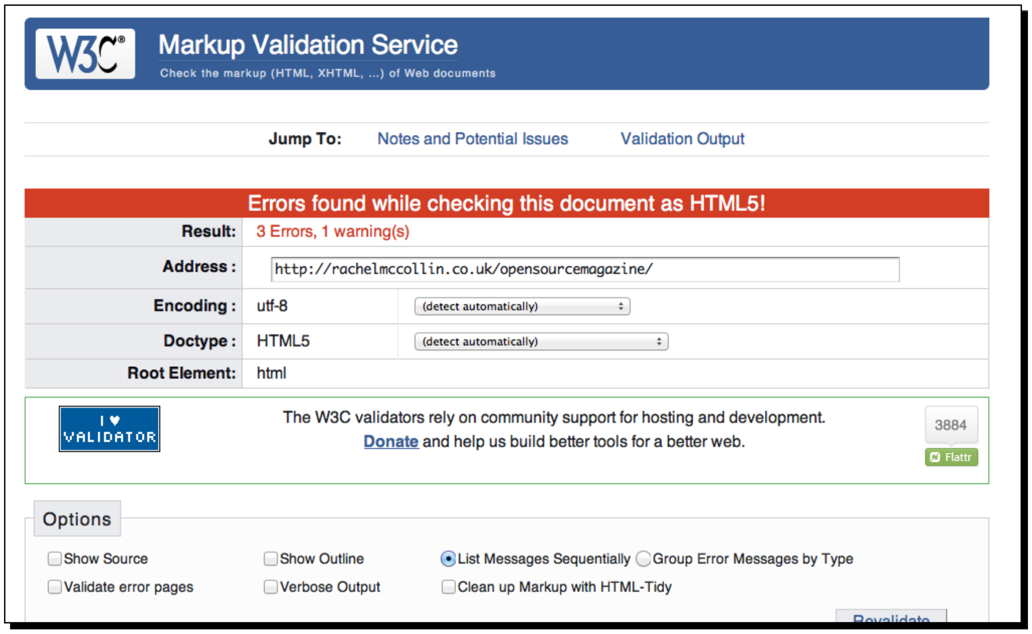
Next, the process if you're working locally:

1. Save a static HTML file with the markup that WordPress outputs from your theme. To do this, in your browser, click on Save Page As and save as an HTML file.
2. Go to `http://validator.w3.org/`.
3. Click on the **Validate by File Upload** tab.
4. Upload your file.
5. Click on the **Check** button.

### *What just happened?*

You used the W3C validation service to check the code in your theme.

Let's see what the results are:



Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Notes and Potential Issues Validation Output

Errors found while checking this document as HTML5!

| | | |
|---|---|---|
| Result: | 3 Errors, 1 warning(s) | |
| Address : | http://rachelmccollin.co.uk/opensourcemagazine/ | |
| Encoding : | utf-8 | (detect automatically) |
| Doctype : | HTML5 | (detect automatically) |
| Root Element: | html | |

I ♥ VALIDATOR

The W3C validators rely on community support for hosting and development.
Donate and help us build better tools for a better web.

3884 Flattr

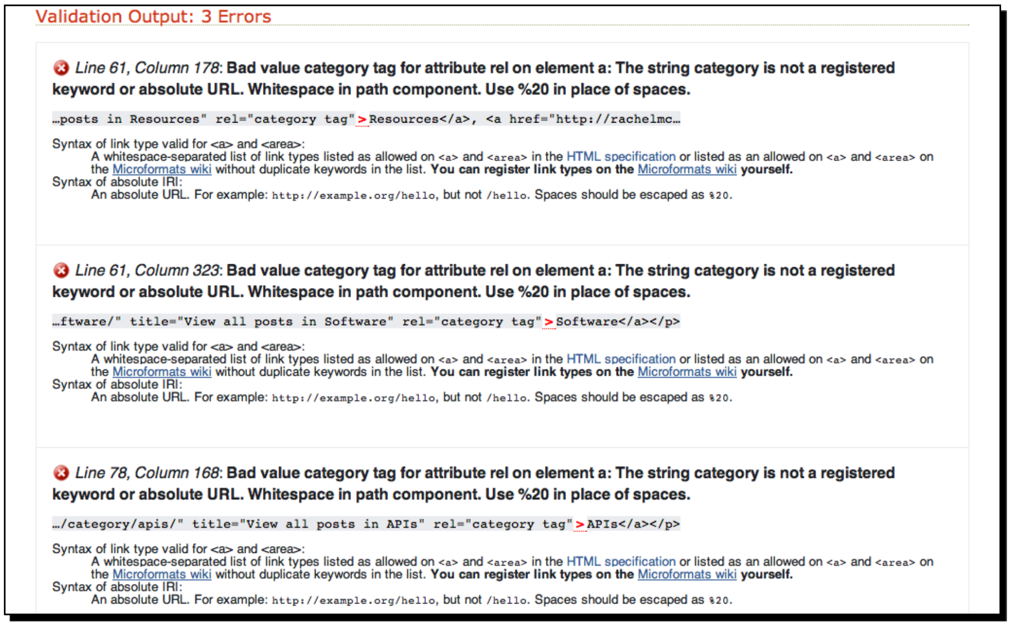
Options

[ ] Show Source [ ] Show Outline [✓ List Messages Sequentially] [ ] Group Error Messages by Type

[ ] Validate error pages [ ] Verbose Output [ ] Clean up Markup with HTML-Tidy

Revalidate

As you can see from the previous screenshot, there are some problems at the moment. To find out what they are, let's scroll down the page:



Validation Output: 3 Errors

*Line 61, Column 178*: **Bad value category tag for attribute rel on element a: The string category is not a registered keyword or absolute URL. Whitespace in path component. Use %20 in place of spaces.**

```
…posts in Resources" rel="category tag">Resources</a>, <a href="http://rachelmc…
```

Syntax of link type valid for <a> and <area>:
A whitespace-separated list of link types listed as allowed on `<a>` and `<area>` in the HTML specification or listed as an allowed on `<a>` and `<area>` on the Microformats wiki without duplicate keywords in the list. **You can register link types on the** Microformats wiki **yourself.**
Syntax of absolute IRI:
An absolute URL. For example: `http://example.org/hello`, but not `/hello`. Spaces should be escaped as `%20`.

*Line 61, Column 323*: **Bad value category tag for attribute rel on element a: The string category is not a registered keyword or absolute URL. Whitespace in path component. Use %20 in place of spaces.**

```
…ftware/" title="View all posts in Software" rel="category tag">Software</a></p>
```

Syntax of link type valid for <a> and <area>:
A whitespace-separated list of link types listed as allowed on `<a>` and `<area>` in the HTML specification or listed as an allowed on `<a>` and `<area>` on the Microformats wiki without duplicate keywords in the list. **You can register link types on the** Microformats wiki **yourself.**
Syntax of absolute IRI:
An absolute URL. For example: `http://example.org/hello`, but not `/hello`. Spaces should be escaped as `%20`.

*Line 78, Column 168*: **Bad value category tag for attribute rel on element a: The string category is not a registered keyword or absolute URL. Whitespace in path component. Use %20 in place of spaces.**

```
…/category/apis/" title="View all posts in APIs" rel="category tag">APIs</a></p>
```

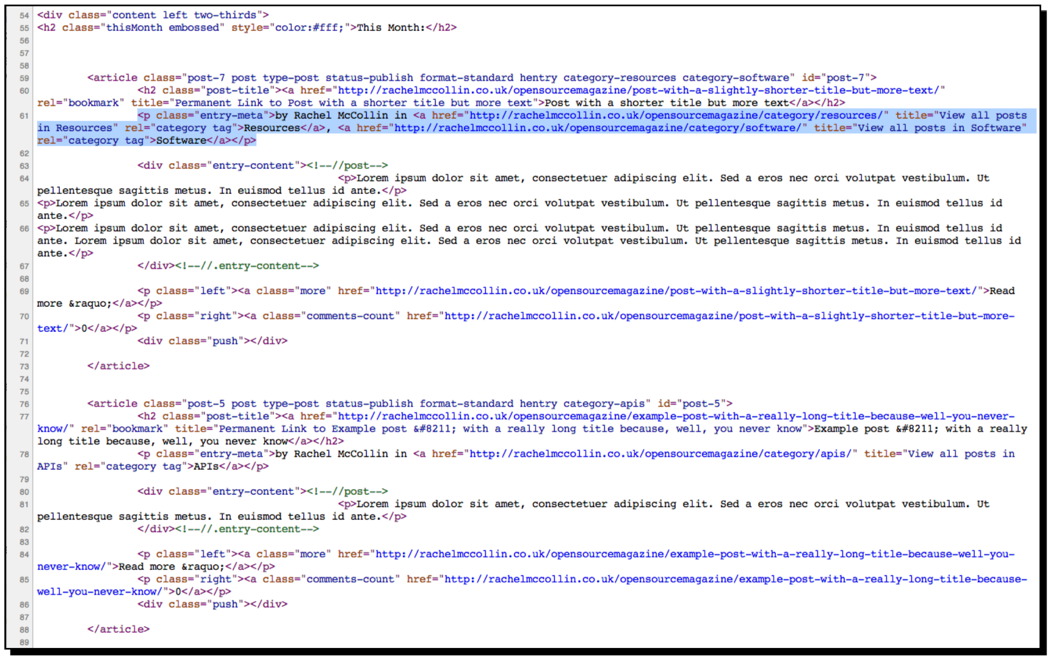
Syntax of link type valid for <a> and <area>:
A whitespace-separated list of link types listed as allowed on `<a>` and `<area>` in the HTML specification or listed as an allowed on `<a>` and `<area>` on the Microformats wiki without duplicate keywords in the list. **You can register link types on the** Microformats wiki **yourself.**
Syntax of absolute IRI:
An absolute URL. For example: `http://example.org/hello`, but not `/hello`. Spaces should be escaped as `%20`.

There are three instances of the same error relating to a `category` tag.

## Time for action – finding and fixing errors

The next step is to find the error, so that we can fix it.

1. Open the page you've just validated in your browser.
2. Using your browser's developer tools, display the page source. I'm working in Chrome, so I'll navigate to **View** | **Developer** | **View Source**.
3. Look for the line numbers where the errors are—lines 61 and 78, as shown in the previous screenshot. Here they are as displayed in Chrome. I've highlighted line number 61 and you can also see line number 78:



```
54 <div class="content left two-thirds">
55 <h2 class="thisMonth embossed" style="color:#fff;">This Month:</h2>
56
57
58
59         <article class="post-7 post type-post status-publish format-standard hentry category-resources category-software" id="post-7">
60                 <h2 class="post-title"><a href="http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-slightly-shorter-title-but-more-text/" rel="bookmark" title="Permanent Link to Post with a shorter title but more text">Post with a shorter title but more text</a></h2>
61                 <p class="entry-meta">by Rachel McCollin in <a href="http://rachelmccollin.co.uk/opensourcemagazine/category/resources/" title="View all posts in Resources" rel="category tag">Resources</a>, <a href="http://rachelmccollin.co.uk/opensourcemagazine/category/software/" title="View all posts in Software" rel="category tag">Software</a></p>
62
63                 <div class="entry-content"><!--//post-->
64                                         <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.</p>
65 <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.</p>
66 <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.</p>
67                 </div><!--//.entry-content-->
68
69                 <p class="left"><a class="more" href="http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-slightly-shorter-title-but-more-text/">Read more &raquo;</a></p>
70                 <p class="right"><a class="comments-count" href="http://rachelmccollin.co.uk/opensourcemagazine/post-with-a-slightly-shorter-title-but-more-text/">0</a></p>
71                 <div class="push"></div>
72
73         </article>
74
75
76         <article class="post-5 post type-post status-publish format-standard hentry category-apis" id="post-5">
77                 <h2 class="post-title"><a href="http://rachelmccollin.co.uk/opensourcemagazine/example-post-with-a-really-long-title-because-well-you-never-know/" rel="bookmark" title="Permanent Link to Example post &#8211; with a really long title because, well, you never know">Example post &#8211; with a really long title because, well, you never know</a></h2>
78                 <p class="entry-meta">by Rachel McCollin in <a href="http://rachelmccollin.co.uk/opensourcemagazine/category/apis/" title="View all posts in APIs" rel="category tag">APIs</a></p>
79
80                 <div class="entry-content"><!--//post-->
81                                         <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.</p>
82                 </div><!--//.entry-content-->
83
84                 <p class="left"><a class="more" href="http://rachelmccollin.co.uk/opensourcemagazine/example-post-with-a-really-long-title-because-well-you-never-know/">Read more &raquo;</a></p>
85                 <p class="right"><a class="comments-count" href="http://rachelmccollin.co.uk/opensourcemagazine/example-post-with-a-really-long-title-because-well-you-never-know/">0</a></p>
86                 <div class="push"></div>
87
88         </article>
89
```

4. The code on line number 61 is as follows (I've taken out the links to save space):

```
<p class="entry-meta">by Rachel McCollin in <a href=""
title="View all posts in Resources" rel="category
tag">Resources</a>, <a href=" " title="View all posts in
Software" rel="category tag">Software</a></p>
```

5. Looking at the code, identify which template file it's being generated by. In this case, the relevant lines are inside `<div class="content">`, so I know they're in the main template file and not in one of the include files, such as `sidebar.php` or `footer.php`. Both lines 61 and 78 are displaying metadata and are enclosed in a `<p class="entry-meta">` tag.

6. Now, open the relevant template file and find the PHP which generates that markup. In the case of this page, the template file is `index.php`. The PHP generating those two lines is inside the loop, which is shown below:

```
<p class="entry-meta">by <?php the_author_meta('first_name');
?> <?php the_author_meta('last_name'); ?> in <?php
the_category(", ") ?></p>
```

## What just happened?

We opened the page we checked with the validator, identified the code causing the problem, and then found the PHP generating that code in the template file.

Sniffing out PHP from the HTML it generates in this way may seem a bit daunting at first, but the trick is to find HTML elements which form major areas of the site, such as `<div class="content">`. Then you can identify the HTML tags immediately surrounding the offending markup and trace that back to the PHP in the template file. If in doubt, always make a backup before you make any changes.

## Time for action – fixing our code

The next step is to fix the code we've identified as the cause for the problem.

1. The code causing the problem is the link which reads:

   ```
   <a href="" title="View all posts in Resources" rel="category
   tag">Resources</a>
   ```

2. This is being generated by the `the_category()` template tag.
3. The best way to find out what this tag does is to check out its Codex page at `http://codex.wordpress.org/Function_Reference/the_category` and its source code in the `category-template.php` file, which is a part of the core WordPress installation (you can see this at `http://core.trac.wordpress.org/browser/tags/3.5.1/wp-includes/category-template.php`—it's daunting, so be warned!).
4. Through my investigations I've discovered that this markup is generated by WordPress and not by my theme. I, therefore, have two options, either I can live with it, or I can delete that template tag.
5. In this case, let's delete the tag to get the theme to validate. Select the following code in your `index.php` file and delete it:

   ```
   in <?php the_category(", ") ?>
   ```

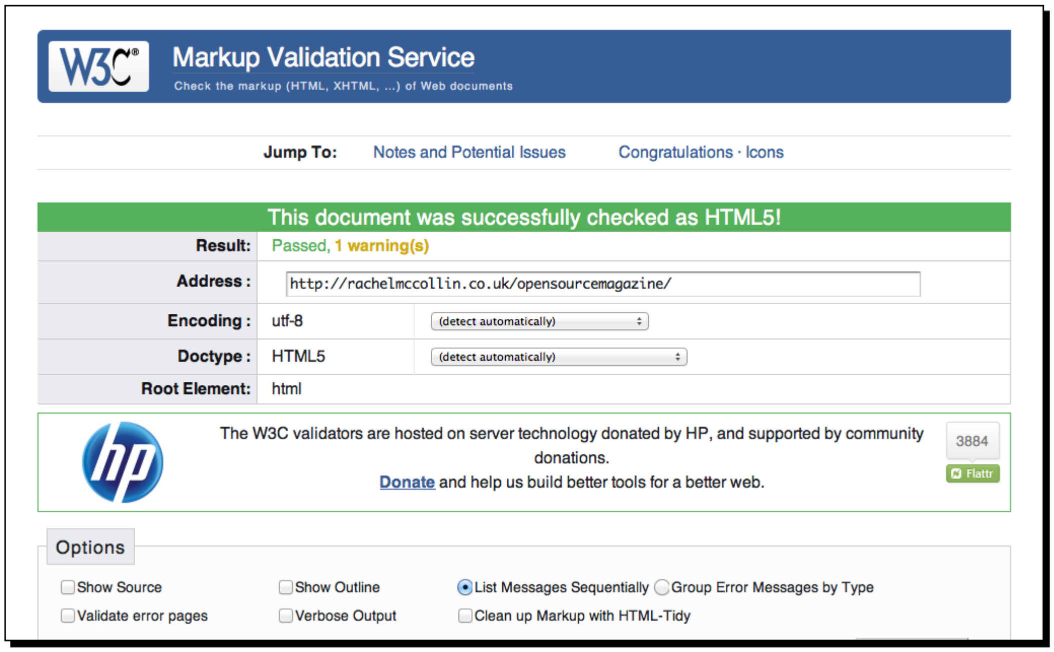
6. Save your `index.php` file and repeat the validation process at `http://validator.w3.org/`.

## What just happened?

Having identified the offending code, we found out how it was being generated and removed it. If the code is generated by your theme's markup rather than by WordPress, you may find that you can change it instead of deleting it.

> If you ever come across problems like this which are thrown up by WordPress, you can always go to the WordPress trac site at `http://core.trac.wordpress.org` to see if a ticket has been raised about it, or you can submit one yourself. In this case, there is a ticket at `http://core.trac.wordpress.org/ticket/17632`.

Now let's see what the validator makes of our page:



Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Notes and Potential Issues · Congratulations · Icons

This document was successfully checked as HTML5!

| | | |
|---|---|---|
| Result: | Passed, 1 warning(s) | |
| Address : | http://rachelmccollin.co.uk/opensourcemagazine/ | |
| Encoding : | utf-8 | (detect automatically) |
| Doctype : | HTML5 | (detect automatically) |
| Root Element: | html | |

The W3C validators are hosted on server technology donated by HP, and supported by community donations.
Donate and help us build better tools for a better web.

Options

[ ] Show Source [ ] Show Outline [✓ List Messages Sequentially] [ ] Group Error Messages by Type
[ ] Validate error pages [ ] Verbose Output [ ] Clean up Markup with HTML-Tidy

## Validating CSS

Now that we have valid HTML5 markup, we can move on to checking the CSS.

## Time for action – using the W3C's CSS validator

Let's use the W3C's CSS validator service to check that. Again, the process for validating our code is different, depending on whether you're working locally or remotely. First, the process for working remotely:

1. Go to `http://jigsaw.w3.org/css-validator/`.
2. Type in the URL of the site running your theme—in the case of my site, it's `http://rachelmccollin.co.uk/opensourcemagazine/`.
3. Click on the **Check** button.

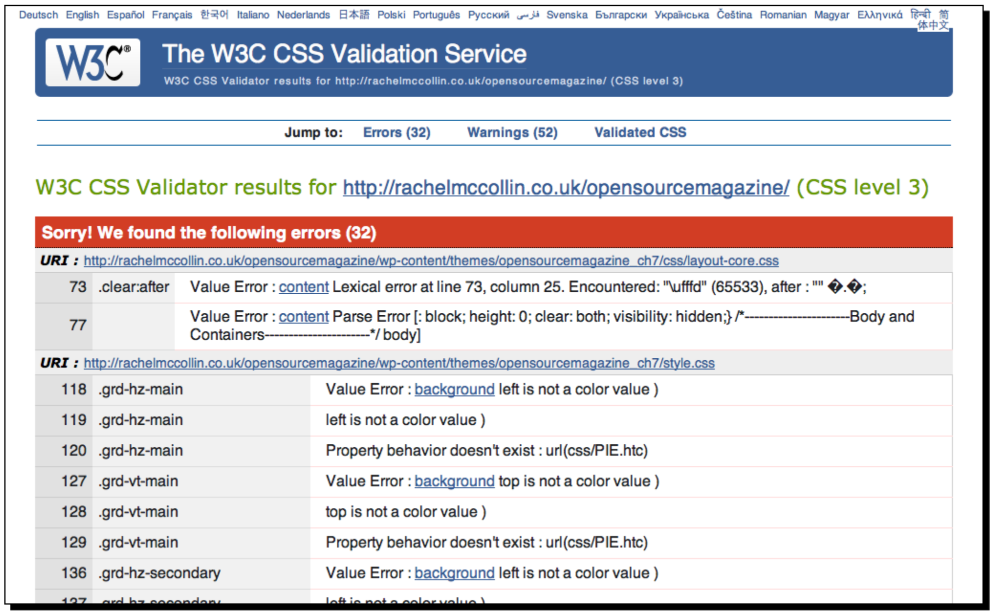
Next, the process if you're working locally:

1. Save a static HTML file with the markup that WordPress outputs from your theme. To do this, in your browser, click on **Save Page As** and save as an HTML file.
2. Go to `http://jigsaw.w3.org/css-validator/`.
3. Click on the **Validate by File Upload** tab.
4. Upload your file.
5. Click on the **Check** button.

## What just happened?

Here you'll want to see another screen with a green bar that says Congratulations! No Error Found.

However, for our theme, we won't get this screen! We're using several new CSS3 properties, that haven't made it officially into the specification, yet browsers are implementing them by adding their own, specific browser prefixes. This means our rounded corner and gradient properties fail, as shown in the following screenshot:


Deutsch English Español Français 한국어 Italiano Nederlands 日本語 Polski Português Русский فارسی Svenska Български Українська Čeština Romanian Magyar Ελληνικά हिन्दी 简体中文
W3C®
The W3C CSS Validation Service
W3C CSS Validator results for http://rachelmccollin.co.uk/opensourcemagazine/ (CSS level 3)
Jump to: Errors (32) Warnings (52) Validated CSS

W3C CSS Validator results for http://rachelmccollin.co.uk/opensourcemagazine/ (CSS level 3)

**Sorry! We found the following errors (32)**

***URI :*** http://rachelmccollin.co.uk/opensourcemagazine/wp-content/themes/opensourcemagazine_ch7/css/layout-core.css

| | | |
|---|---|---|
| 73 | .clear:after | Value Error : content Lexical error at line 73, column 25. Encountered: "\ufffd" (65533), after : "" �.�; |
| 77 | | Value Error : content Parse Error [: block; height: 0; clear: both; visibility: hidden;} /*---------------------Body and Containers---------------------*/ body] |

***URI :*** http://rachelmccollin.co.uk/opensourcemagazine/wp-content/themes/opensourcemagazine_ch7/style.css

| | | |
|---|---|---|
| 118 | .grd-hz-main | Value Error : background left is not a color value ) |
| 119 | .grd-hz-main | left is not a color value ) |
| 120 | .grd-hz-main | Property behavior doesn't exist : url(css/PIE.htc) |
| 127 | .grd-vt-main | Value Error : background top is not a color value ) |
| 128 | .grd-vt-main | top is not a color value ) |
| 129 | .grd-vt-main | Property behavior doesn't exist : url(css/PIE.htc) |
| 136 | .grd-hz-secondary | Value Error : background left is not a color value ) |
| 137 | .grd-hz-secondary | left is not a color value ) |

You'll simply need to be aware of which CSS3 properties you're using, and if you don't get the green bar, the validator will display the offending error and again offer suggestions on how to fix it. The CSS validator will also show you the line the offending code is on. This is handy, as your stylesheet is not affected by WordPress output, so you can go directly to the line in your stylesheet file and make the suggested fix.

## Testing on multiple browsers and platforms

No doubt you'll have a browser that you prefer to develop in, which is likely to be a modern, standards-compliant browser, such as Chrome, Firefox, or perhaps Safari. But you'll need to ensure that your themes work just as well in other browsers too. By debugging throughout your development process, you'll reduce the number of browser compatibility problems and spend less time at the end hacking your code, or putting in place fixes aimed at one browser (normally IE).

### Which browsers to support

You'll need to decide which browsers your theme will support and which versions of them. This will depend on what you're developing your theme for—is it for a client or for release to the public? The browsers supported by most developers at the time of writing are:

- Google Chrome
- Firefox
- Safari for Mac
- Opera
- Internet Explorer version 7 onwards (or sometimes 8 onwards).

Very few themes now support IE6, and this is the right approach. Microsoft themselves want us to stop supporting IE6, as you can discover at `http://www.ie6countdown.com`.

### Approaches to browser support

There are two approaches to ensuring cross-browser compatibility—progressive enhancement and graceful degradation. Let's take a quick look at the difference between these.

#### Graceful degradation

Graceful degradation is the process web developers have traditionally used. It involves developing in a modern browser and then putting in place fixes for anything that doesn't work in older browsers, such as IE6 and IE7.

This approach feels easier to start with, as it makes the initial development more straightforward, but can mean a lot of extra work at the end of the process, and a lot of extra code to get things working in older browsers.

### Progressive enhancement

Progressive enhancement is the opposite of graceful degradation. It involves developing in a way which is cross-browser compatible, so that your layout and basic styling works across all of the browsers you're supporting, and then adding extras for those browsers that support it, such as CSS3 styling. The extras you add aren't essential to the site, so it won't matter if users on older browsers can't see them.

This method can be much more efficient and result in tidier code, but for many developers, it entails a shift in thinking.

Whichever approach you adopt, I would recommend one very important thing—don't save your browser testing till the end of your development process. Keep checking as you go along, and then you can make small adjustments or fixes instead of having to do a lot of extra work at the end.

## Troubleshooting basics

Suffice to say, it will usually be obvious when something is wrong with your WordPress theme. The most common reasons for things being off are:

- CSS rules that use incorrect syntax or conflict with other rules
- Mis-named, mis-targeted, or inappropriately-sized images
- Markup text or PHP code that affects or breaks the Document Object Model (DOM) due to being inappropriately placed or having syntax errors in it
- WordPress PHP code or template tags and hooks that are copied over incorrectly, producing PHP error displays in your template rather than content

The second point is pretty obvious when it happens. You see no images, or worse, you might get those little ugly "x'd" boxes in IE if they're called directly from the WordPress posts or pages. Fortunately, the solution is also obvious: you have to go in and make sure your images are named and referenced correctly inside any `img` tags in your markup or `background-image` declarations in your stylesheet.

For images that are not appearing correctly because they were mis-sized, you can go back to your image editor, fix them, and then re-export them, or you might be able to make adjustments in your stylesheet to display a height and/or width that is more appropriate to the image you designed.

For the latter two points, one of the best ways to debug syntax errors that cause visual "wonks" is not to have syntax errors in the first place.

This is why, in your workflow, you should be constantly checking for validation.

Let's have a look at some of the most common causes of problems with code.

## PHP template tags

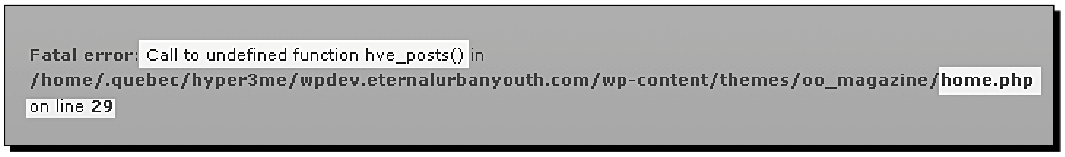
The next issue you'll most commonly run into is mistakes and typos that are created by copying and pasting your WordPress template tags and other PHP code incorrectly. The most common result you'll get from invalid PHP syntax is a **Fatal Error**. Fortunately, PHP does a decent job of trying to let you know in which file and line of code in the file the offending syntax lives.

If you get a Fatal Error in your template, your best bet is to open the filename that is listed and go to the line in your editor. Once there, search for missing `<?php ?>` tags. Your template tags should also be followed with parentheses, followed by a semicolon, such as `();`. If the template tag has parameters passed in it, make sure each parameter is surrounded by single quote marks, for example, `template_tag_name( 'parameter name', 'next_parameter' );`.

**Be aware of proper PHP notation**

The proper way to notate PHP is as mentioned earlier, with a `<?php` at the beginning and a `?>` at the end. The server will look for the beginning `<?php` tag and start processing the PHP. Some developers use PHP shorthand—starting with just a `<?` (no php added). This is risky as not all servers support it, so stick with `<?php` in your opening tags.

The following screenshot shows the results of a PHP error, with reference to the line number in the file generating the problem:



```
Fatal error: Call to undefined function hve_posts() in
/home/.quebec/hyper3me/wpdev.eternalurbanyouth.com/wp-content/themes/oo_magazine/home.php
on line 29
```

As you can see, this is a simple typo - the `have_posts()` template tag has been mis-typed. This tag appears at the beginning of the loop, so it should be easy to find and fix.

## CSS quick fixes

Finally, your CSS file might get fairly big, fairly quickly. It's easy to forget you already made a rule and/or just accidentally created another rule with the same name. It's all about cascading, so whatever comes last overwrites what came first.

The biggest cause of problems is duplicating selectors with different properties set. Beware of duplicating in this way, and if you do need to, ensure that the rule you want to be used by the browser is after any rule with duplicated selectors in your stylesheet.

For example, you may have the following rule for all of your headings:

```
h1, h2, h3, h4, h5, h6 {
  color: #333;
}
```

And then, elsewhere in your stylesheet, you have a separate rule for h3 headings, which you want to be a different color:

```
h3 {
  color: #000;
}
```

For the second rule to be implemented by the browser, you must put it lower down in the stylesheet than the first, so that it can override it.

Again, validating your markup and CSS as you're developing will alert you to syntax errors, deprecated properties, and duplicate rules that could compound and cause issues in your stylesheet down the line.

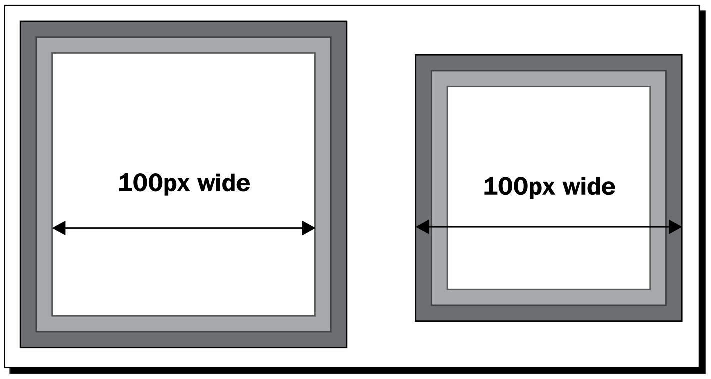
## Fixing CSS across browsers

If you've been following our debug and validate method described in the chapter, then for all intents and purposes, your layout should look pretty spot-on between both the browsers.

### Common browser problems

In the vast majority of cases, it will be IE that doesn't render your CSS correctly. Common issues include:

- **Box model problems**: IE can calculate the size of block elements differently from other browsers. In most browsers, the total space taken up by an element is the sum of its width and height plus the width and height of its margins and padding. However, IE6, 7, and 8 will sometimes calculate the space taken up by an element differently, including its padding in the width defined by the width property, and so deducting this from the total space taken up by the element, as you can see in the following diagram:



- **The hasLayout model**: In IE6 and 7, `hasLayout` is a property that must be assigned to elements for them to be rendered correctly. In some cases, you'll need to add extra styling to trigger `hasLayout` in IE.
- **Float problems**: IE6 and 7 sometimes drop elements which should be floated next to each other, due to the way their width is calculated.
- **List spacing problems**: IE6 will sometimes add white space between list items—a pain if you're styling lists as boxes next to each other for navigation.
- **The peekaboo bug**: In IE6 and 7, this bug causes floated elements to disappear seemingly at random.
- **The guillotine bug**: This bug makes elements, floated next to each other, change height when the user hovers their mouse over one of them.

Fortunately, there is a fix (or often more than one fix) for each of these bugs. For a comprehensive guide to the bugs and how to fix them, refer to *The CSS Detective by Denise R. Jacobs, published by New Riders* (`http://cssdetectiveguide.com`).

## Adding an IE-specific stylesheet

If IE is causing you problems which you can't fix by making tweaks to your main stylesheet, then it's time for some hacks.

The neatest way to do this is to create two stylesheets for your theme—one for general browser use and one for IE browsers, and let each browser call them in.

This isn't as bad as it seems. The bulk of your CSS can stay in your main CSS file; you'll then call in the following specific IE stylesheet code, which will load additionally only if the browser is IE.

In the IE stylesheet, you'll duplicate the rules and correct the properties that were not looking correct in IE. Because this stylesheet will load in underneath your main stylesheet, any duplicated rules will overwrite the original rules in your first stylesheet.

## Time for action – setting up an alternative IE stylesheet

Let's set up an IE stylesheet.

1. In your `header.php` template file, add the following code after your full stylesheet call:

   ```
   <!--[if IE]>
   <link rel='stylesheet" type='text/css" href="ie-fix.css"
   media='screen, projection" />
   <![endif]-->
   ```

2. Save the `header.php` file.
3. Now create a new stylesheet called `ie-fix.css` and save it to your theme's directory (that is, the same folder your stylesheet is in). This is where any IE-specific CSS will go.

### *What just happened?*

We created a new IE-only stylesheet, and added a conditional tag in the `header.php` file to call it only when the theme is being run in IE.

The `<!--[if IE]>` and `<![endif]-->` tags are essential. The first one checks if the page is being viewed in IE, and the second ends the conditional tag, ensuring that all code after it is run by all browsers.

## Checking your work in Internet Explorer

If you're not running Windows, or you are but aren't running all of the versions of IE you need to test for, you have a couple of options for testing your theme in IE:

- On a Mac, use Boot Camp (`http://support.apple.com/kb/HT1461?viewlocale=en_US&locale=en_US`) or Parallels (`http://www.parallels.com/products/desktop/`) to run Windows alongside OS X.
- On any machine, use a browser emulator, such as Adobe BrowserLab (`https://browserlab.adobe.com`) to emulate browsers which you aren't running, including IE.

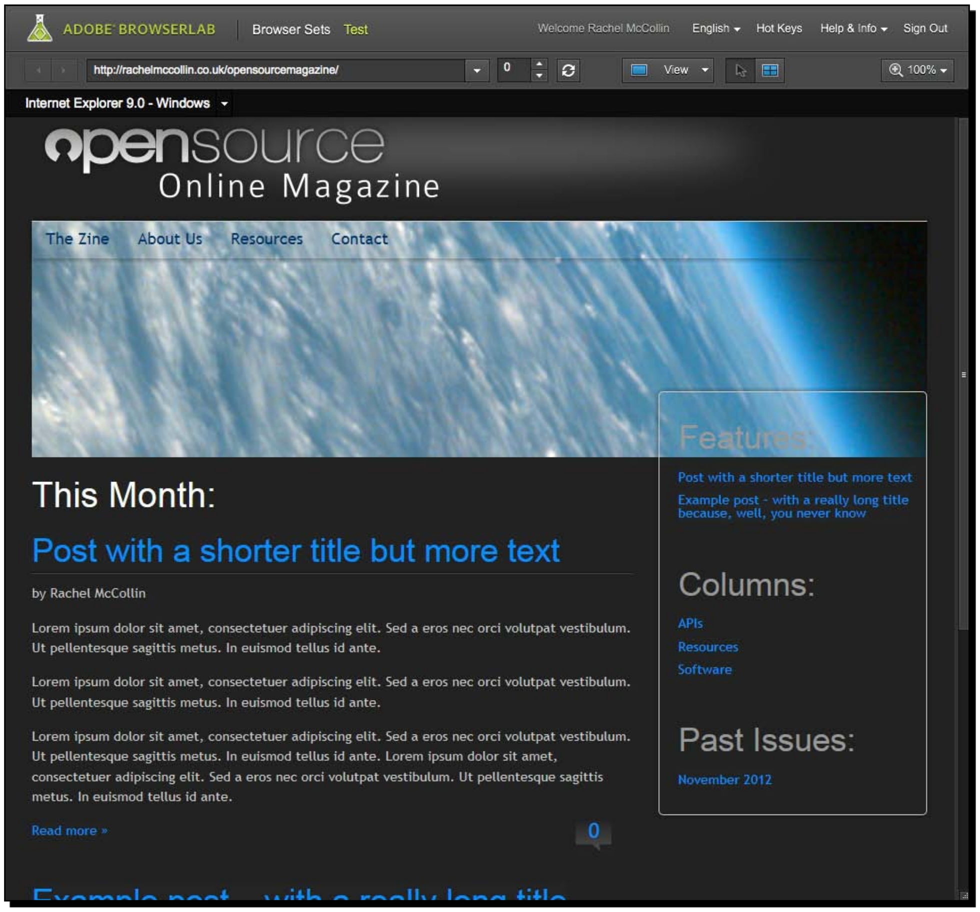
## Time for action – testing our theme with BrowserLab

Let's test our site in IE using Adobe BrowserLab.

1. Go to `https://browserlab.adobe.com`.
2. You'll need to sign in with an Adobe user ID, so if you don't have one, create one and then sign in.
3. Select the browsers you want to test for in the dropdown list.
4. Type in the URL of the page you want to test and hit **Return**.
5. Your page will be displayed as it renders in the browser you've selected.

### *What just happened?*

We tested our theme using BrowserLab. Here's how it looks in IE9:



This Month:

Post with a shorter title but more text

by Rachel McCollin

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

0

Features:

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

Columns:

APIs

Resources

Software

Past Issues:

November 2012

As you can see, there are some issues with the sidebar, as it uses a gradient for its background—IE isn't picking that up. This means that we need to adjust the `background-color` property for that element (or the relevant class) in our IE-only stylesheet to fix the problem.

## Testing on mobile devices

Testing your themes on small screens and different devices brings a new set of challenges. Again, you have a few options:

- Test on the devices themselves. This is an expensive option given the range of devices out there, but it can be helpful to test on one iOS and one Android device if possible.
- Resize your browser window to see how your layout appears when the screen is resized. This will give you a good indication of how your responsive layout behaves across screen widths.
- Use a mobile browser emulator, such as the excellent versions for Opera Mobile at `http://www.opera.com/developer/tools/mobile/` and Opera Mini at `http://www.opera.com/developer/tools/mini/`.

The book, *WordPress Mobile Development Beginner's Guide by Rachel McCollin, published by Packt Publishing*, gives you a full guide to making your theme mobile and testing across a variety of mobile browsers and devices. Find out more at `http://www.packtpub.com/wordpress-mobile-web-development-beginners-guide/book`.

## Summary

In this chapter, we reviewed the basic process of debugging and validating your theme. We learnt about:

- Using a thorough validation and debugging process during development
- Using browser tools to help with debugging
- Using the W3C validator to validate HTML and CSS
- Ensuring our PHP has the correct syntax
- Testing across browsers and fixing problems in Internet Explorer

Next, it's time to package up the theme and send it to our client!

# 6
# Your Theme in Action

*Now that we've got our theme designed, styled, and looking great, we just have one last thing to do. It's time to share your theme with your client, friends, and/or the rest of the WordPress community. This is the whole point of creating a theme in WordPress; your designs are separate from the WordPress CMS content and therefore easily shareable. This means that anyone can create a WordPress theme, and anybody else can install that theme in their WordPress installation.*

In this chapter, you'll learn how to check your theme against the WordPress Theme Review guidelines, set it up so its stylesheet and license are correct, compress your theme as a ZIP file, and run some test installations before uploading it.

## The WordPress Theme Review guidelines

Before any theme can be published to the WordPress theme repository at `http://wordpress.org/extend/themes/`, it has to conform to the WordPress Theme Review guidelines. These include the following:

- **Code quality**: Make sure your code is up to date.
- **Presentation versus functionality**: Themes are for presentation, not functionality.
- **Theme features**: Your theme should support implementation of core WordPress features.
- **Template tags and hooks**: Make sure your theme implements template tags and hooks properly.
- **WordPress-generated CSS classes**: Make sure you use WordPress-generated CSS classes.

- **Theme template files**: Theme template files should be used properly.
- **Security and privacy**: The theme shouldn't present any issues with security and privacy.
- **Licensing**: A GPL-compatible license is required.
- **Theme name**: The theme name must be appropriate.
- **Credit links**: Credit links should be used and should be appropriate.
- **Theme unit tests**: Your theme must pass these tests.
- **Theme obsolescence**: Your theme should be kept current on an ongoing basis, keeping up-to-date with WordPress updates.

There are a lot of hoops you have to jump through, as you can see, but none of them are too tough. For more details, see the codex page on Theme Review at `http://codex.wordpress.org/Theme_Review`, and the Theme Review team site at `http://make.wordpress.org/themes/`.

In this chapter, you'll learn about the specifics of some of these criteria so you can share your theme.

You can find a copy of these at `http://codex.wordpress.org/Theme_Review`.

In this chapter, we'll take a look at WordPress' licensing requirements. We'll also spend some time properly naming our theme and crediting it, as well as creating a screenshot for our theme, and giving it a run through WordPress' Theme Unit Test criteria using the following:

`http://codex.wordpress.org/Theme_Unit_Test`

Let's get started packaging our theme up.

## The theme preview screenshot

Before we begin wrapping up our theme package, we'll need one more asset—the theme's preview thumbnail.

## Time for action – snagging a thumbnail of your theme

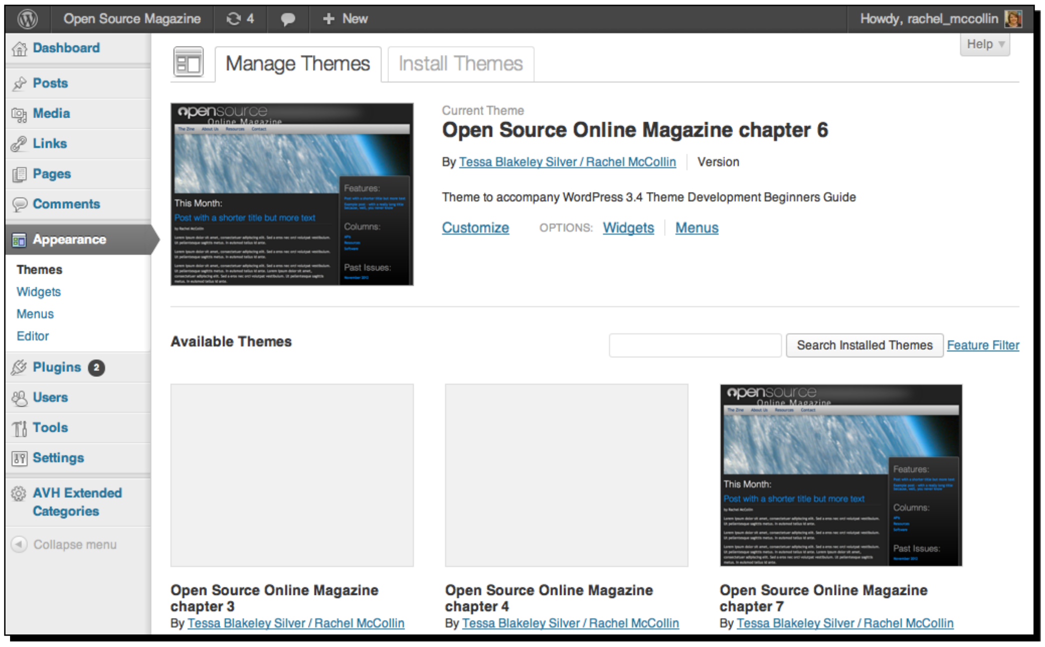
Let's create a screenshot for our theme.

1. Using whatever screen capture software you have on your system, take a screenshot of a site running your theme.
2. Save the file and open it in an image editor.
3. Crop the image and resize it so that it's 600px wide x 450px high.
4. Save the image as `screenshot.png`—it must have this name or it won't work.
5. Copy the new `screenshot.png` file to your theme directory.

## What just happened?

We created a screenshot of our theme and saved it in the format used by WordPress.

Now, when I view the theme in the **Themes** admin screen, the following screenshot is displayed:



Current Theme
Open Source Online Magazine chapter 6
By Tessa Blakeley Silver / Rachel McCollin | Version
Theme to accompany WordPress 3.4 Theme Development Beginners Guide

Open Source Online Magazine chapter 3
By Tessa Blakeley Silver / Rachel McCollin

Open Source Online Magazine chapter 4
By Tessa Blakeley Silver / Rachel McCollin

Open Source Online Magazine chapter 7
By Tessa Blakeley Silver / Rachel McCollin

For more on theme screenshots, see `http://codex.wordpress.org/Theme_Development#Screenshot`.

## Packaging your theme up

To make sure your template is ready to go public, you'll need to run through the following steps before packaging it up:

- Removing any unnecessary files and code
- Checking the stylesheet to ensure its information text is accurate
- Creating a `README.TXT` file to package with the theme
- Zipping the theme into a ZIP file and testing it using the Unit Test specs

Let's work through each of these steps in turn.

### Tidying up your theme

Before you can do anything else, you need to ensure your theme is tidy.

## Time for action – tidying up your theme

Let's tidy up the theme directory and code files. Perform the following steps for the same:

1. Open the theme directory in your file manager. Make a backup of your theme just in case.
2. Check there aren't any files in your theme folder that aren't used by the theme. If so, remove them.
3. Open your code files in turn and check them. If you've commented out any code, remove that. Check that you haven't unnecessarily duplicated code, such as stylesheet declarations.
4. Review your code. Is it clear and easy to work with? Is it laid out well so other users could see what's happening and how your files are structured? See the WordPress coding standards at `http://codex.wordpress.org/WordPress_Coding_Standards`.
5. Now save all of the files you've edited.

### *What just happened?*

You tidied up your files and your code. You should now have a theme which is well coded and meets the WordPress coding standards. Well done!

## Describing your theme in the stylesheet

The next step is to ensure that your stylesheet has all of the information users of your theme will need. In *Chapter 3*, *Coding It Up*, we added text at the top of the stylesheet inside comments to tell WordPress the name of the theme and provide more information. Now let's add to that.

The opening lines of the stylesheet are commented out and contain the following information about your theme:

- `Theme Name:` The full name of your theme.
- `Theme URI:` Where the theme can be downloaded from.
- `Description:` A quick description of what the theme looks like, any specific purpose it's best suited for, and/or any other theme it's based on or inspired by.
- `Author:` Your name as the theme's author goes here.
- `Author URI:` A URL to a page, where people can find out more about you.
- `Version:` The version number—1.0 if it's a new theme. Each time you edit the theme, change this by adding a `0.1` increment for small changes or going up to the next whole number for major changes.
- `Tags:` A list of tags applying to your theme, which will help people searching for themes with certain characteristics.

You can also add license information—this won't be displayed on the **Themes** admin page, but will be visible to anyone who opens your stylesheet. This can take the form of the full license information or a short description of the license (for example, GPL).

## Time for action – describing your theme

Now it's time to describe our theme.

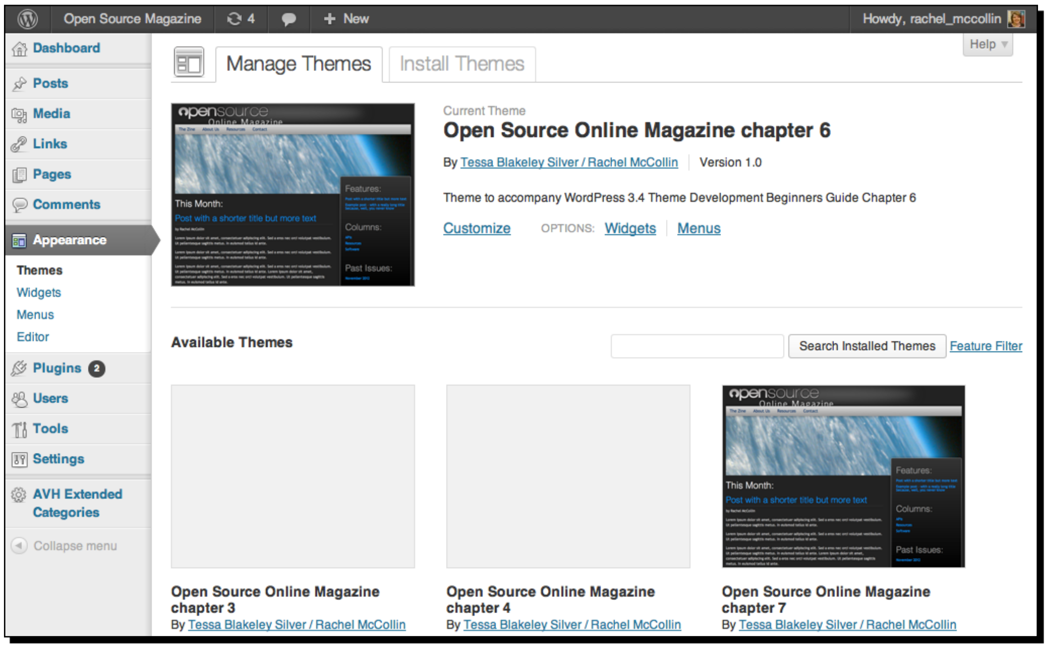
1. Open the `style.css` file.
2. At the top of the file, edit the existing information so that it reads something like the following:

```
/*
Theme Name: Open Source Online Magazine chapter 6
Theme URI: http://rachelmccollin.co.uk/opensourcemagazine
Description: Theme to accompany WordPress 3.4 Theme Development
Beginners Guide Chapter 6
Author: Tessa Blakeley Silver / Rachel McCollin
Author URI: http://rachelmccollin.co.uk/
Version: 1.0
Tags: Black, blue, dark, responsive, magazine
*/
```

3. Save your `style.css` file.

## What just happened?

You added the information users need to understand what your theme is, who developed it, and what attributes it has (using the tags). Now, when you refresh the Themes admin screen, the new information is displayed:



Current Theme

Open Source Online Magazine chapter 6

By Tessa Blakeley Silver / Rachel McCollin | Version 1.0

Theme to accompany WordPress 3.4 Theme Development Beginners Guide Chapter 6

Customize OPTIONS: Widgets | Menus

Available Themes

Search Installed Themes Feature Filter

Open Source Online Magazine chapter 3
By Tessa Blakeley Silver / Rachel McCollin

Open Source Online Magazine chapter 4
By Tessa Blakeley Silver / Rachel McCollin

Open Source Online Magazine chapter 7
By Tessa Blakeley Silver / Rachel McCollin

## Your theme's license

The requirement for the theme repository is that themes are derivative works of the WordPress code base and, therefore, should be released with a standard GPL license that does not conflict with the WordPress GPL license. If you're not familiar with the GNU/GPL license, you can learn more about it here: `http://www.gnu.org/copyleft/gpl.html`

Again, if you're hoping to get into the WordPress theme repository, this is the license that you must use for your theme. You'll want to refer to the WordPress theme review guidelines for more information. The link for the same is `http://codex.wordpress.org/Theme_Review#Licensing`.

## Time for action – adding license information to our theme

Let's add some licensing information to our theme.

1. Open your theme's stylesheet.

2. Under the information you just added, and again inside comments, add the following:

   ```
   License: GNU General Public License v2.0
   License URI: http://www.gnu.org/licenses/gpl-2.0.html
   ```

3. Save the file.

### What just happened?

We added license information to our theme. This makes it clear that the theme is released under the GPL so it will meet the WordPress theme repository criteria.

## Zipping up your theme

Now the theme is ready to go, we just need to compress it for upload to `wordpress.org`. To do this, we'll need to create a `.zip` file, but the way you do this will be different depending on what platform you're using—Windows or Mac.

### Time for action – zipping up your theme

Let's zip our theme up. First, the process for doing this on a Mac:

1. In Finder, select your theme's folder.
2. Right-click or *command* + click on it and select **Compress** from the shortcut menu.
3. A zip file will automatically be created for you.

The method for doing this will vary on Windows depending on what version of Windows you're using. Firstly, for Windows Vista:

1. In File Manager, select your theme's folder.
2. Right-click or *Ctrl* + click on it and select **Send to** from the shortcut menu.
3. Select **Compressed (zipped) folder**.
4. A zip file will automatically be created for you.

If you're using an earlier version of Windows, you'll have to use compression software on your PC to do this. For details of free compression software for Windows, see `http://www.top5freeware.com/top-5-free-file-compression-software`. The most popular compression software is WinZip, which isn't free, but you can download a free trial at `http://www.winzip.com/index.htm`.

## *What just happened?*

We made a `.zip` file with a compressed version of our theme contained in it. This file can now be sent to other users or developers or uploaded to the WordPress theme directory at `http://wordpress.org/extend/themes/upload/`.

## One last test

You're now ready to test the package. This involves unzipping and uploading the theme to a WordPress installation, which mirrors a live environment where it will be used.

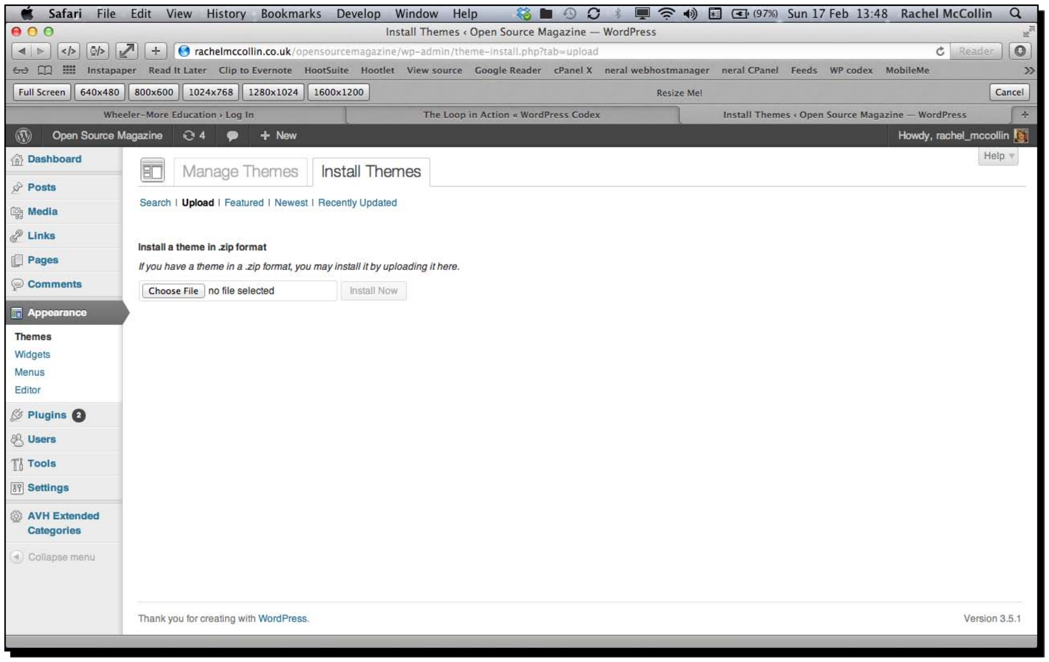
Ideally, you'll want to install your theme on a web server installation, preferably the one where the theme is going to be used (if it's a custom design for a single client), or under the circumstances you feel your theme's users are most likely to use (for example, if you're going to post your theme for download on the WordPress theme repository, then test your theme on an installation of WordPress on a shared hosting environment which most people use).

Don't assume that the ZIP file you made is going to unzip or unpack properly (files have been known to be corrupt).

## Time for action – testing the theme

Let's install our theme in a site and test it. Perform the following steps:

1. Open a clean WordPress installation.
2. Go to the **Themes** screen by clicking on **Appearance**.
3. Click on the **Install Themes** tab.
4. At the top of the screen, click on Upload as shown in the following screenshot:



Install a theme in .zip format

*If you have a theme in a .zip format, you may install it by uploading it here.*

Thank you for creating with WordPress.

5. Click on the **Choose File** button and select your ZIP file.
6. Your file will upload to WordPress. Click on **Activate**.
7. Now test the theme, checking that it displays properly in the site and that all of the functions you expect are available. You may have to amend the **Permalinks** and **Reading** settings to do this—for a recap on how to do this, see *Chapter 4*, *Advanced Theme Features*.

## What just happened?

You uploaded your theme to a fresh WordPress installation and tested it. Hopefully, it's all working ok—well done!

## Have a go hero – using the WordPress Theme Unit Test

You've already learned about the Theme Review guidelines earlier in this chapter, but if you want to submit your theme to the theme repository, you'll also need to make sure it passes the **Theme Unit Test**.

As part of the theme review, the Theme Review Team will run tests on your theme, known as the Theme Unit Test (`http://codex.wordpress.org/Theme_Unit_Test`). You can do this yourself for your own theme to test it. To do so, you follow a few steps:

1. Download an XML file from `https://wpcom-themes.svn.automattic.com/demo/theme-unit-test-data.xml to your theme`.
2. Import some text data by navigating to **Tools** | **Import**.
3. In the `wp-config.php` file in your WordPress installation, set `WP_DEBUG` to `true`, using the instructions at `http://codex.wordpress.org/WP_DEBUG`.
4. Install some specific plugins and follow the testing process. You can find the full instructions at `http://make.wordpress.org/themes/about/how-to-join-wptrt/`.

Try doing this for your theme—it helps to know if your theme will pass before you submit it, and is a useful way to learn about the standards required for themes listed on the WordPress website.

## Pop Quiz - questions on packaging up your theme

Q1. What license should a WordPress theme have to be accepted to the theme repository?

1. GPL
2. Creative Commons
3. Split license

Q2. Where do you place information that will be displayed in your theme's listing on the **Themes** admin screen?

1. In `functions.php`
2. In the `<head>` tag of `header.php`
3. In a separate file of its own
4. In `style.css`

Q3. What type of file should you upload to the WordPress theme submission page?

1. A PHP file
2. A ZIP file
3. A `README.TXT` file

Q4. What is the Theme Unit Test?

1. Specifications for the files your theme should include
2. A list of template tags your theme has to use
3. Guidelines on theme templates
4. A process for testing if your theme meets the Theme Review guidelines

## Summary

In this chapter, you've learned how to package your theme up, so that other WordPress users and developers can make use of it. You've also learned the following:

- How to check your theme against the WordPress Theme Review guidelines
- How to create a `screenshot.png` file for your theme
- How to provide appropriate information in your stylesheet for users of the theme
- How to compress your theme so that it can be uploaded to the WordPress theme repository or sent to other users
- How to run some final tests on your theme

Congratulations, you now know about getting a WordPress theme design off that coffee shop napkin and into the real world! In the next chapter, we'll get down into the real-world nitty-gritty of getting things done quickly with some slick tips and tricks for your WordPress theme development.

# 7
# Tips and tricks

*You now have a great working WordPress theme, which uses valid, standards-compliant code and is fit for release to the public. Congratulations!*

*In this chapter we'll look at some added extras, some additional bells and whistles you can use to make your theme just that bit better.*

*You'll learn how to create and make use of additional template files to add extra flexibility and functionality to your theme, as well as how to use conditional tags to display different content in different parts of your site. You'll also learn how to make use of the Theme Customizer and optimize your site for SEO.*

*You can create perfectly good, workable WordPress themes without any of these extras, but you'll find that you can take your WordPress themes much further with these techniques.*

So let's get going!

## Adding more template files to your theme

In *Chapter 3*, *Coding it Up,* we looked at the template files you need for a basic WordPress theme, and we spent some time creating them. We also learned about includes, files which you call from your main template files, such as `header.php`.

So far we've created the following template files for our theme:

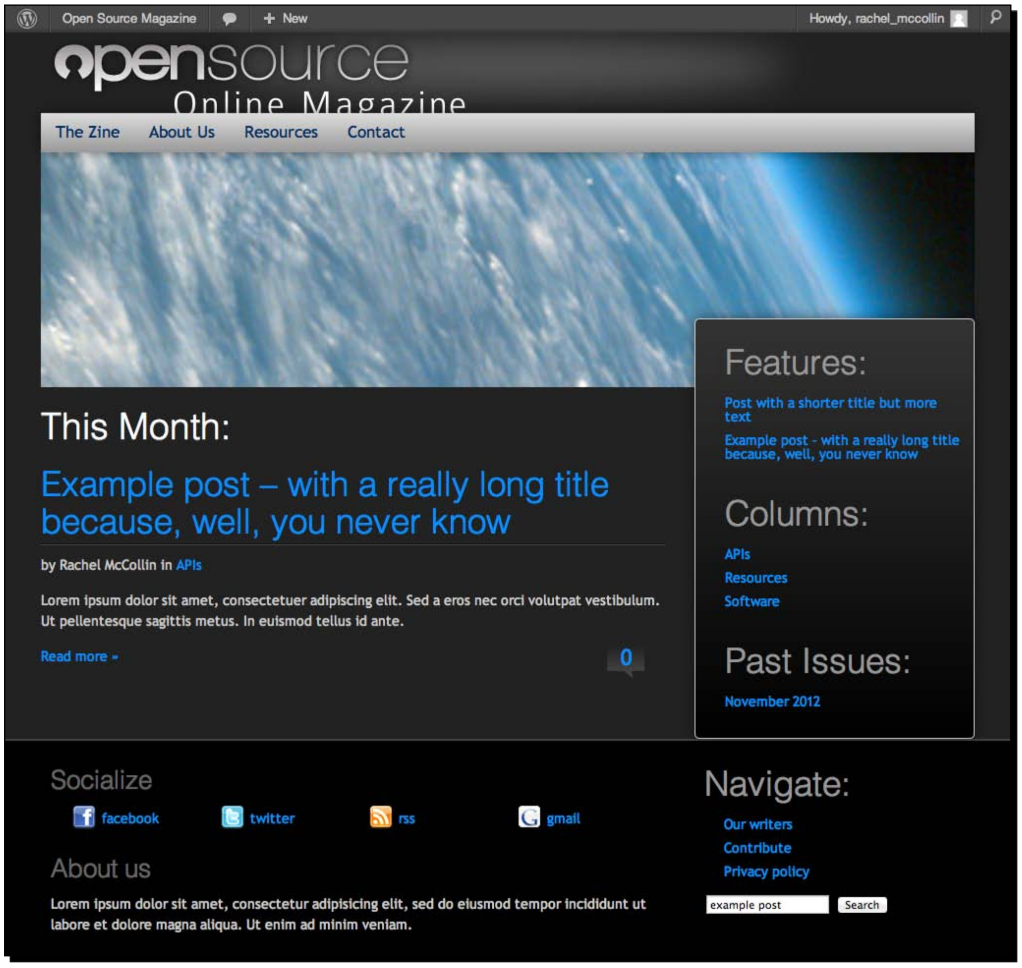
- Template files:
  - `index.php`
  - `page.php`
- Includes:
  - `header.php`
  - `sidebar.php`
  - `footer.php`
- The functions file:
  - `functions.php`
- The stylesheet:
  - `style.css`

But let's say our site needed to display posts from a specific category differently from the rest of the site, or we needed the home page to work differently, or maybe we wanted to have more control over how search results or 404 pages were displayed.

With template files, we can do all that.

## A search.php file for search results

WordPress handles search results pretty well already. Let's see what's displayed in our theme if we try to search for **example post** (Note that we've now added a **Search** widget to the right-hand side footer widget area to make this possible):



This Month:

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »

0

Post with a shorter title but more text

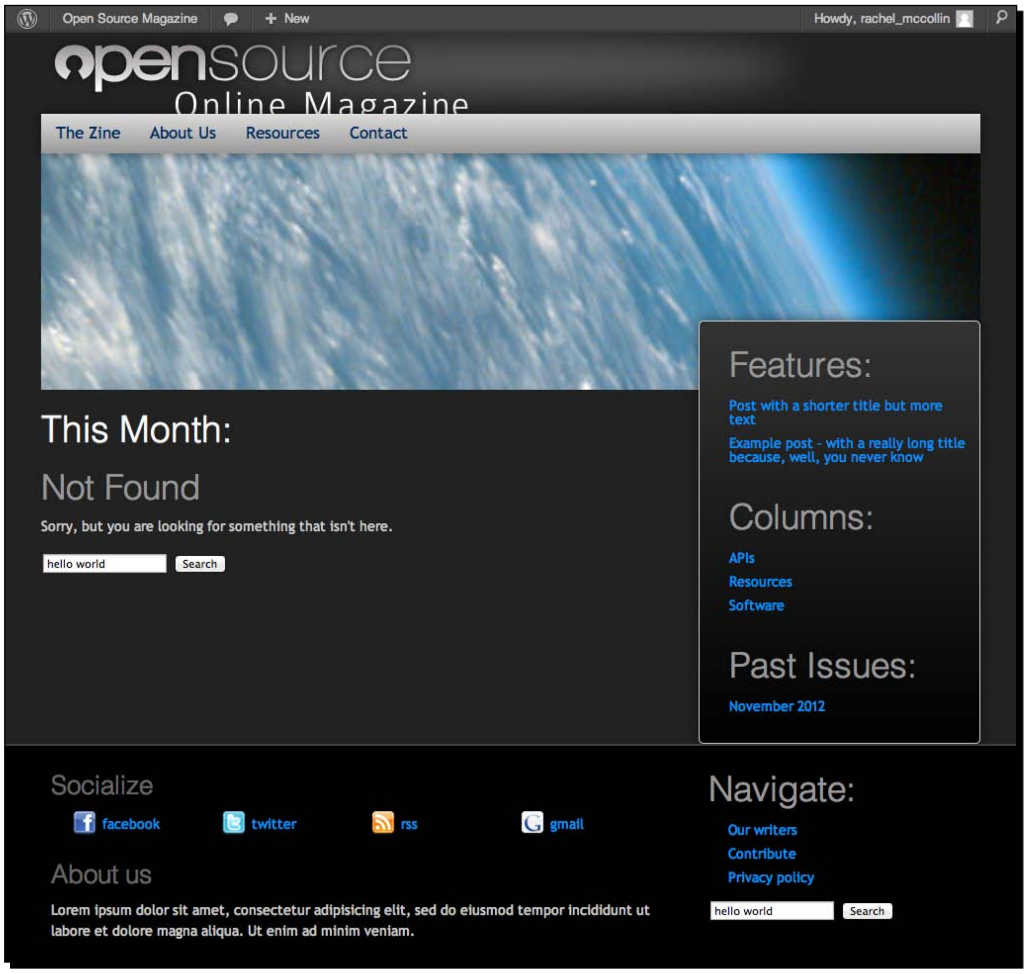
Example post - with a really long title because, well, you never know

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

As you can see, it' s using our `index.php` template file, so the heading reads **This Month:**. We'd rather make it more obvious that these are search results.

Now let's see what happens if we search for something that can't be found:



Sorry, but you are looking for something that isn't here.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

Again, the heading isn't great. Our theme gives the user a message telling them what's happened (which is coded into `index.php` as we'll see), but we could beef that up a bit, for example by adding a list of the most recent posts.

## Time for action – creating a search.php template file

Let's create our `search.php` file and add some code to get it working in the way we'd like it to:

1. In your theme folder, make a copy of `index.php` and call it `search.php`.

2. Find the following code near the top of the file:

```
<h2 class="thisMonth embossed" style="color:#fff;">This Month:</
h2>
```

3. Edit the contents of the `h2` element so the line of code now reads:

```
<h2 class="thisMonth embossed" style="color:#fff;">Search
results:</h2>
```

4. Find the loop. This will begin with:

```
<?php if (have_posts()) :?>
  <?php while (have_posts()) : the_post();?>
```

5. The first section of the loop displays any posts found by the search, leave this as it is. The second section of the loop specifies what happens if no search results are found. It's in the following lines of code:

```
<?php else : ?>
       <h2 class="center">Not Found</h2>
       <p class="center">Sorry, but you are looking for something
that isn't here.</p>
       <?php get_search_form(); ?>
<?php endif; ?>
```

6. Underneath the line that reads `<?php get_search_form(); ?>` and before `<?php endif; ?>`, add the following lines of code:

```
<h3>Latest articles:</h3>
<?php $query = new WP_Query( array ( 'post_type' => 'post', 'post_
count' => '5' ) );
  while ( $query->have_posts() ) : $query->the_post(); ?>
    <ul>
      <li>
        <a href="<?php the_permalink(); ?>">
          <?php the_title(); ?>
        </a>
      </li>
    </ul>
<?php endwhile;   ?>
```

7. Save your `search.php` file and try searching for something which isn't included in the site.

## What just happened?

We created a new template file called `search.php`, which will be used to display the results of a site search. We then edited the heading to make it clearer, and added some code to display the latest posts if the search had no results.

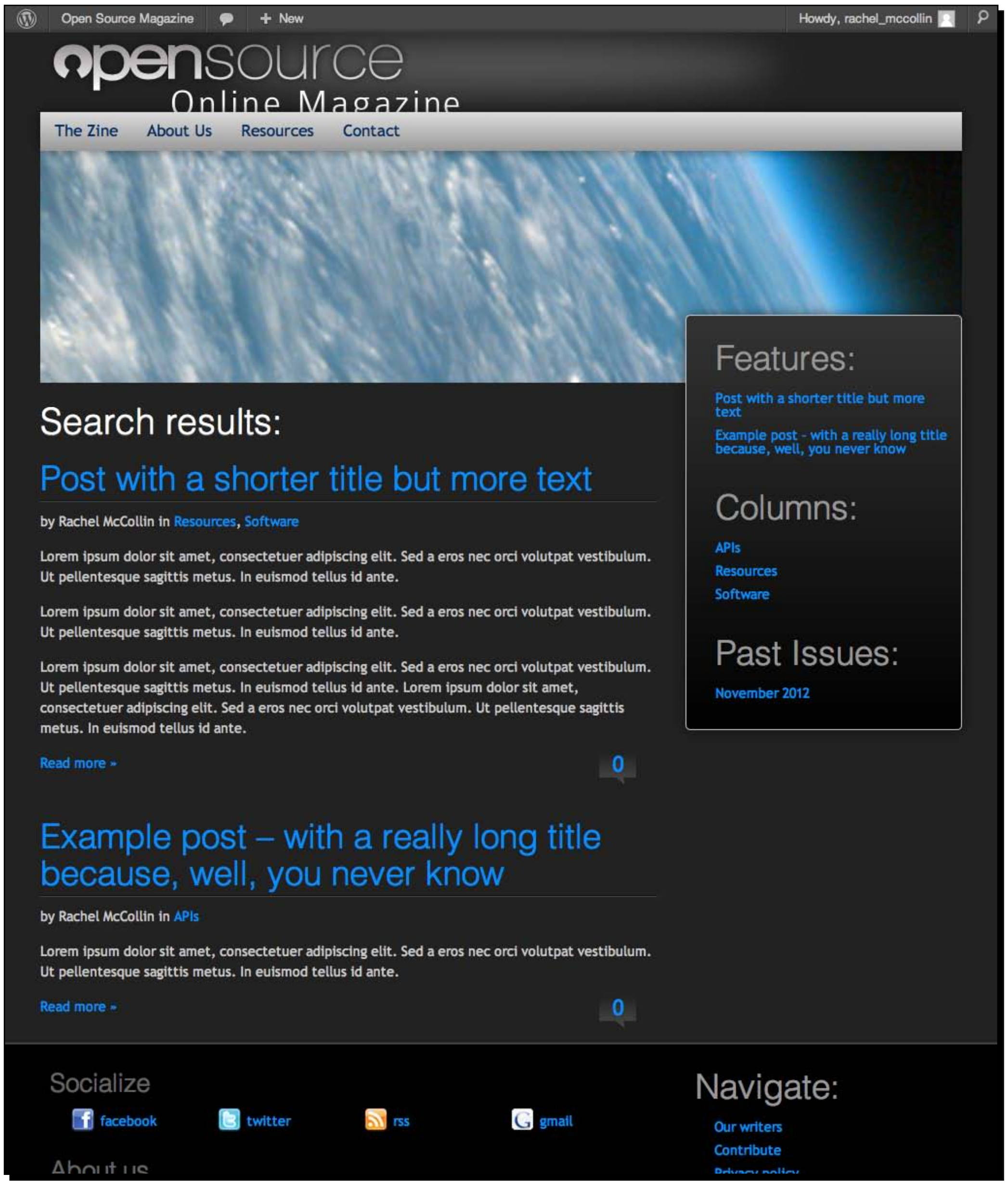
We actually did something pretty advanced, we added a second loop inside our original loop.

Let's have a look at the code we added after the search form:

- The function `$query = new WP_Query()` runs a new query on the database, based on the WordPress `WP_Query` function, which is the function you should use when running a loop inside the main loop.
- We gave `WP_Query` the following parameters:
  - `'post_type' => 'post'` – this ensures that the query will only look for posts, not for any other kind of content.
  - `'post_count' => '5'` – this tells WordPress how many posts to show. Five, in this case.
- We then output the title of each post with the `php the_title()` tag which we've already used higher up in the loop to display post titles. We wrapped this in a link inside a list item. The link uses `the_permalink()` to link to the blog post whose title is displayed. This is very similar to the main loop.
- Finally, we added `endwhile()` to stop this loop. This doesn't replace the `endwhile()` at the end of our main loop, which is higher up in the file.

For more on WP_Query and how to use it to create multiple loops, see `http://codex.wordpress.org/Class_Reference/WP_Query`.

Let's have a look at what our users will see when they do a search now. First, a successful search:



Search results:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »  0

Example post – with a really long title because, well, you never know

by Rachel McCollin in APIs

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Read more »  0

Features:

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

Columns:

APIs

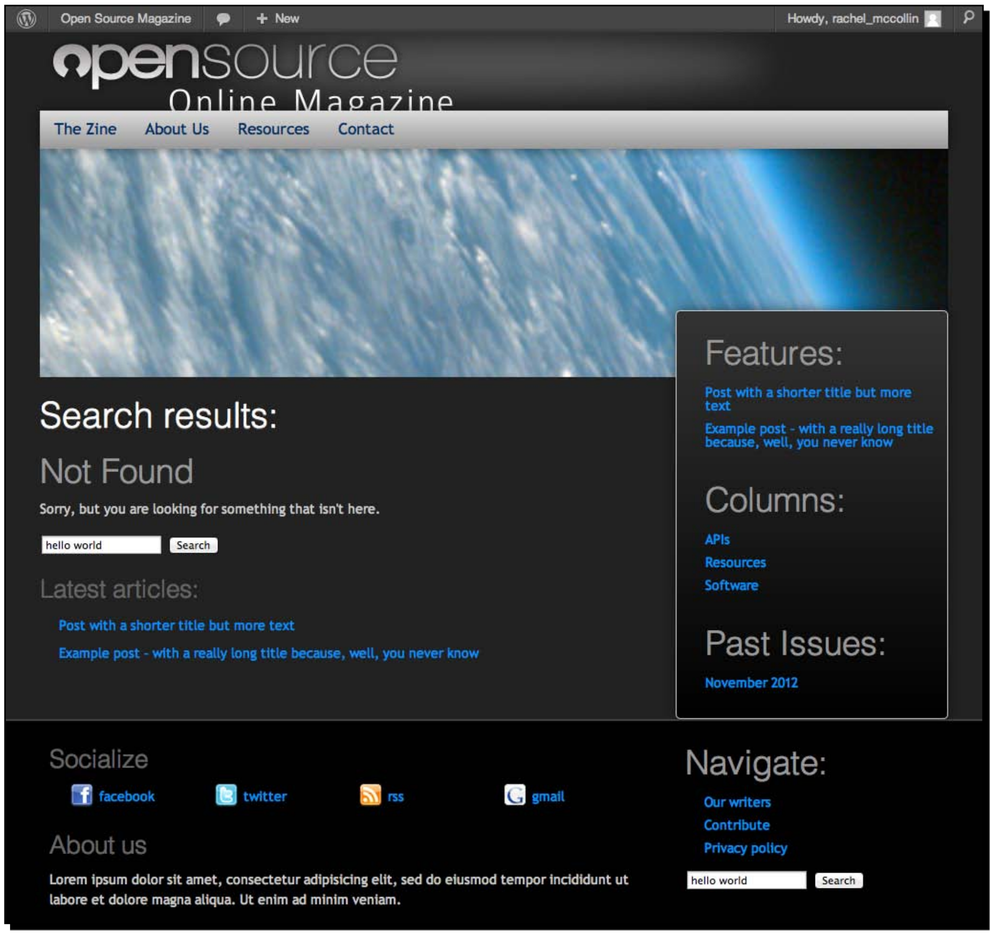
Resources

Software

Past Issues:

November 2012

Next, an unsuccessful search:



Search results:

Not Found

Sorry, but you are looking for something that isn't here.

hello world

Latest articles:

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

So that's how we set up a template file for search results. Our search page is only displaying two posts because that's all we have on our site. If there were more than five, it would just display the five most recent.

Now let's set one up to display some pages differently.

## Creating a custom page template

In many themes, all pages will need the same basic layout and content, with the same sidebars and footer and the same styling. But sometimes you may need some pages to look different.

For example, you might want to use different sidebars in different pages, or you might want a different layout. Here we'll look at the second of those two options.

## Time for action – creating a custom page template

Imagine that you have some pages containing a lot of content which you want to display across the full width of the page, without the sidebar getting in the way. The way to handle this is to create a page template which doesn't include the sidebar, and then select that page template when you're creating or editing those pages. Let's try it out.

1. In the same folder as your other theme files, make a copy of your `page.php` file and call it `page-no-sidebar.php`.
2. At the very top of the file, above the line reading `<?php get_header(); ?>`, insert the following code:

```
<?php
/*
Template Name: Full width page without sidebar
*/
?>
```

3. Find the following line of code:

```
<div class="content left two-thirds">
```

4. Edit it so it reads:

```
<div class="content left full">
```

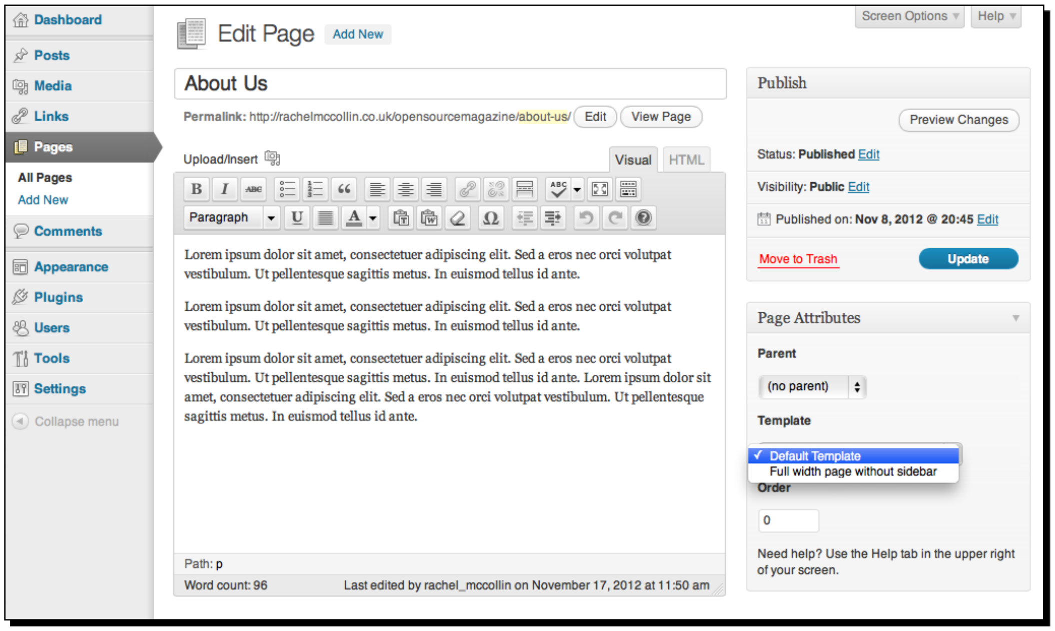
5. Now find the line that reads `<?php get_sidebar(); ?>` and delete it.
6. Save your file.

### What just happened?

We created a new template file called `page-no-sidebar.php`, and edited it to display content differently from our default page template:

- We edited the classes for our `.content` div, using the object-oriented approach to styling used by the `layout-core.css` file. This will apply styling for the `.full` class to this div, so that it displays a full width instead of two-thirds of its containing element.
- We removed the line calling the `get_sidebar` include, so that it won't be displayed on any pages using this template.

The lines we added at the top are essential for WordPress to pick up on our page template and make it available in the WordPress admin. Page editors will see a drop-down list of page templates available, and the name we defined in the template is what they'll see in that list, as shown in the following screenshot:



About Us

Permalink: http://rachelmccollin.co.uk/opensourcemagazine/about-us/

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Path: p

Word count: 96 Last edited by rachel_mccollin on November 17, 2012 at 11:50 am

Status: Published Edit

Visibility: Public Edit

Published on: Nov 8, 2012 @ 20:45 Edit

Parent: (no parent)

Template: ✓ Default Template / Full width page without sidebar

Order: 0

Need help? Use the Help tab in the upper right of your screen.

As you can see, in the **Page Attributes** box to the right-hand side, a new select box has appeared called **Template**. Our new page template is listed in that select box, along with **Default Template**, which is `page.php`.

Now we can try it out by assigning this template to a page and seeing how it looks.

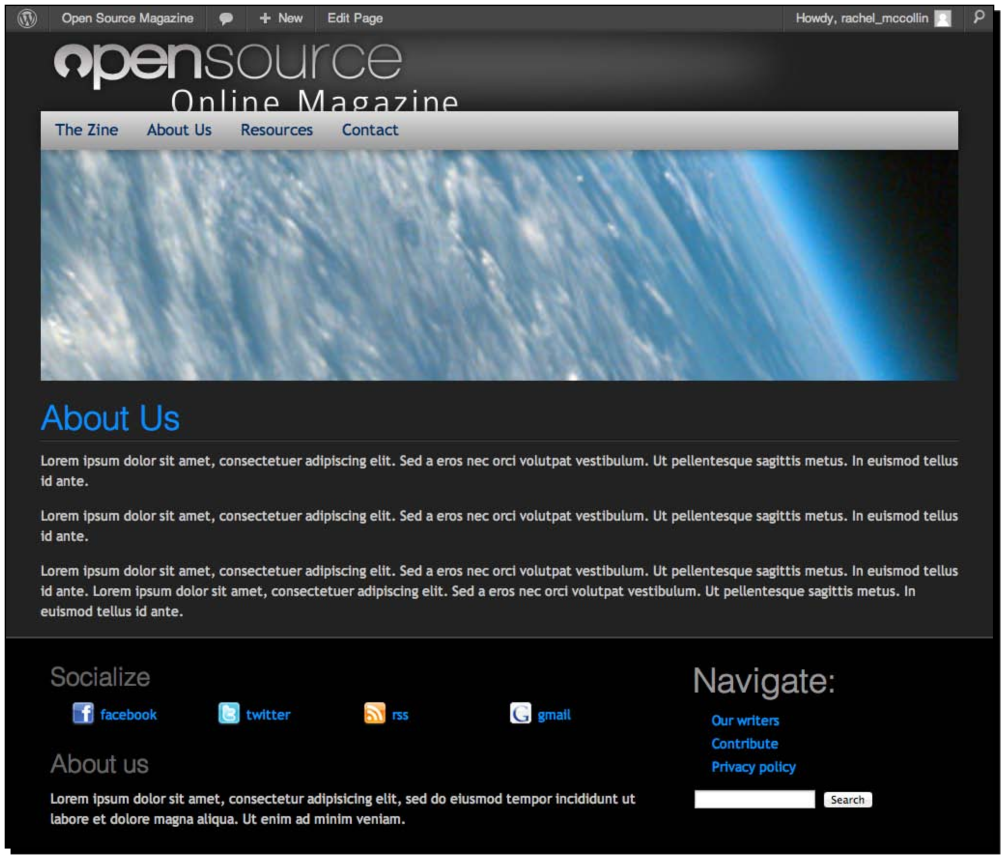
## Time for action – assigning a custom page template to a page in our site

It's very simple to make a page in our site use our new page template.

1. In the WordPress admin, open the editing screen for one of your pages. Here we'll use the **About Us** page.
2. In the **Page Attributes** box, select the template called **Full width page without sidebar**.
3. Click on the **Update** button to save changes to the page.
4. Now visit the page to see how it looks.

## What just happened?

We edited one of our pages so it uses the page template we just set up. This is how it now looks in the browser:



Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

The page is displayed without a sidebar, and the content stretches to the full width of the page. Good job!

## Have a go hero – styling the custom page template

You may remember that in *Chapter 3*, *Coding it Up*, we added the `body_class()` template tag to the `<body>` tag in our theme's `header.php` file, using the following code:

```
<body <?php body_class($class); ?>>
```

This tag automatically assigns classes to the `<body>` tag depending on what type of content is being displayed and the template file being used. The great news is that you can use it to target our new page template.

Try doing this with your theme, using the `.page-template-page-no-sidebar-php` class, which will be assigned to the `<body>` tag for any pages using this template.

For example, you could try:

- Changing the color or size of the page title, using the `.page-template-page-no-sidebar-php h2.page-title` selector
- Hiding some content on this page only, using the `display:none` declaration (although it's much better to delete the content from the template file as then the content won't be output in the first place)
- Moving the sidebar to the left-hand side instead of removing it altogether— using layout styling for the sidebar and the content
- Adding an additional background image (or a different one) to those pages

There are plenty of possibilities!

For more on creating custom page templates, see `http://codex.wordpress.org/Pages#Creating_Your_Own_Page_Templates`.

## Working with conditional tags

Along with using page templates to display different content in different parts of your site, you can also use conditional tags. These are bits of PHP that tell WordPress to check if something is the case and, if so, run some code or, if not, to either run a different piece of code or to do nothing at all.

We'll scrape the surface of conditional tags here as it's a huge subject that you can do a great deal with, but it can get very complicated.

First, let's have a quick look at what conditional tags should look like.

### Conditional tags' syntax

The basic syntax for conditional tags is as follows:

```
<?php
if ( [condition] )
{
  // code to output when condition is met
}
?>
```

If the condition isn't met, WordPress would just skip the contents of the conditional tag and go straight on to the next bit of code. We'll create an example of this shortly.

You can also check when a condition is *not* true, using an exclamation mark:

```
<?php
if ( ![condition] )
{
  // code to output when condition is not met
}
?>
```

Or you can use `else` to add an alternative action if the condition is not met:

```
<?php
if ( [condition] )
{
  // code to output when condition is met
}
else
{
  // code to output when condition is not met
}
?>
```

These are the three basic ways of using conditional tags.

## Incorporating conditional tags in our theme

Can you think of any examples where we've already used conditional tags in this book? For a start, there's our loop, which we've used in all of our template files. When looking for posts to output, WordPress checks if there are any posts to display, and displays them if this is the case; if not, it does nothing.

The code in the loop which does this is shown as follows:

```
<?php if ( have_posts() ) : ?>
  // code to display our post titles and content
<?php else : ?>
  /// code to output if there are no posts
<?php endif; ?>
```

You may have noticed that this code is slightly different from what you've already seen in the loop, which uses `while (have_posts)`. An `if` statement checks if there are posts, but a `while` statement just tells WordPress to do something while there are posts to display, and isn't used for checking conditions.

The `else` statement and its contents are optional, but it helps to have something there just in case WordPress can't find anything to display. In our `search.php` template, as you'll remember, we added some code to output a list of recent posts inside that `else` statement, so that it's only displayed if the search finds no results:

```
<?php if ( have_posts() ) : ?>
  // code to output posts if the search is successful
<?php else : ?>
    <h2 class="center">Not Found</h2>
    <p class="center">Sorry, but you are looking for something that
isn't here.</p>
      <?php get_search_form(); ?>
      <h3>Latest articles:</h3>
      <?php $query = new WP_Query( array ( 'post_type' => 'post',
'post_count' => '5' ) );
      while ( $query->have_posts() ) : $query->the_post(); ?>
        <ul>
          <li><a href="<?php the_permalink() ?>"><?php the_title();
?></a></li>
        </ul>
      <?php endwhile;   ?>
<?php endif; ?>
```

This means you've already been working with conditional tags and you didn't even know it! Now let's work on another example of using conditional tags – hiding the page title on the home page.

## Using conditional tags to hide the home page's title

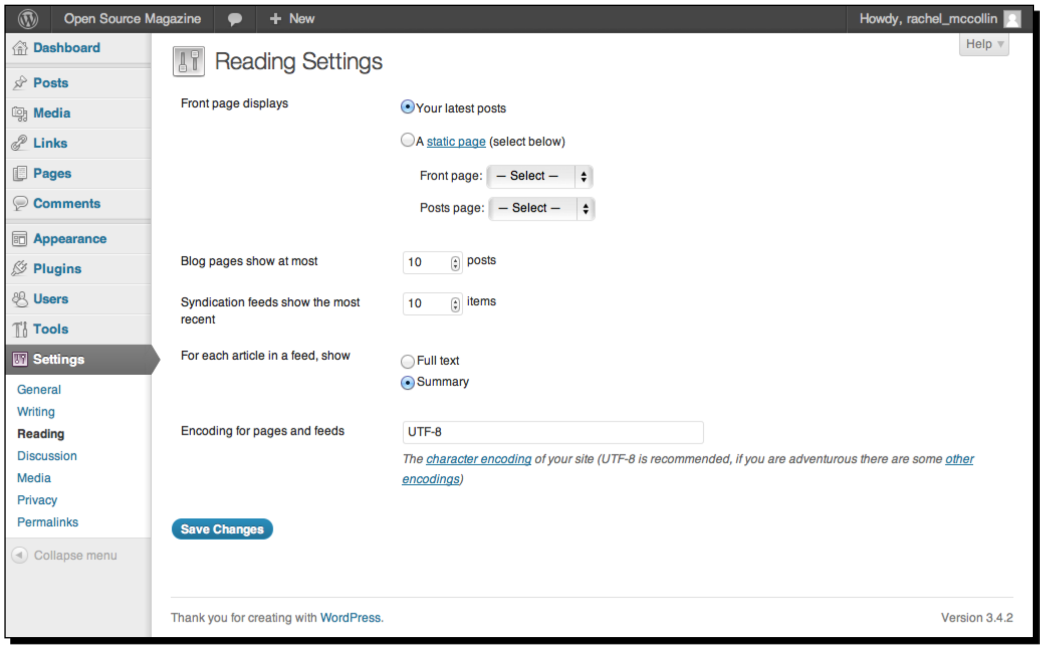
Let's imagine that we're working on a site which needs a static page as the home page instead of the blog listing we're using for Open Source Magazine. If we created a site like this we'd probably want to call our home page **Home**. But would users need to see that **Home** title on the home page? Not really, as they know it's the home page.

Let's try a really easy way to do this using CSS first, before moving on to using a conditional tag.

## Time for action – using CSS to hide our home page's title

Before we can hide our home page title, we'll need to change the settings on our site so it displays a static page as the home page.

1. In the WordPress admin, go to the **Reading** screen via the **Settings** menu:



Reading Settings

Front page displays: [✓ Your latest posts] / A static page (select below)
Front page: — Select —
Posts page: — Select —

Blog pages show at most: 10 posts

Syndication feeds show the most recent: 10 items

For each article in a feed, show: Full text / [✓ Summary]

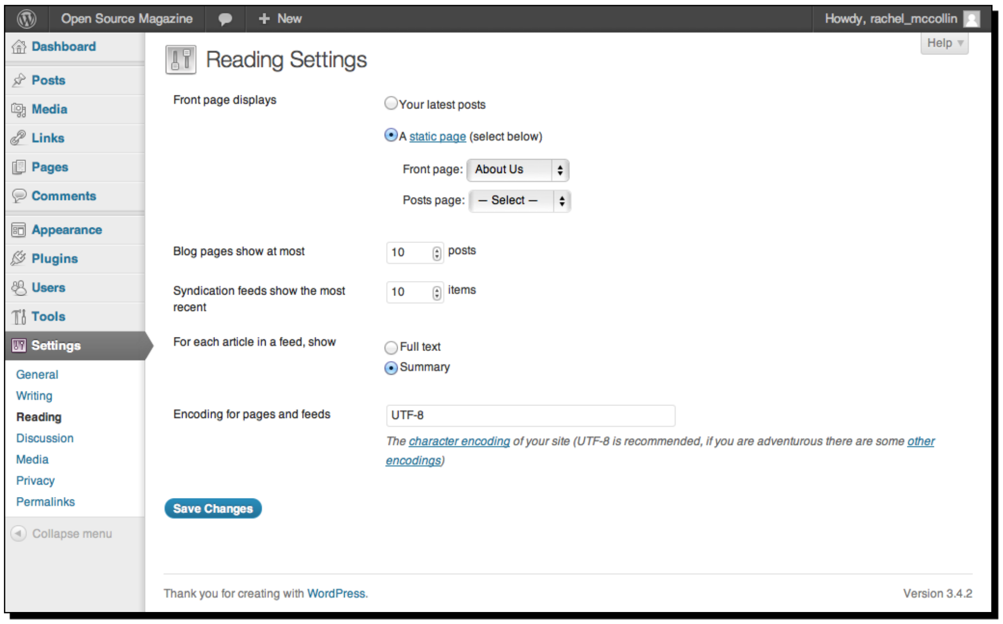
Encoding for pages and feeds: UTF-8

*The character encoding of your site (UTF-8 is recommended, if you are adventurous there are some other encodings)*

Thank you for creating with WordPress.

Version 3.4.2

**2.** Change the **Front page displays** settings so that your site displays the **About us** page as the home page:



Reading Settings

Front page displays: Your latest posts [✓ A static page (select below)]

Front page: About Us

Posts page: — Select —

Blog pages show at most: 10 posts

Syndication feeds show the most recent: 10 items

For each article in a feed, show: Full text [✓ Summary]

Encoding for pages and feeds: UTF-8

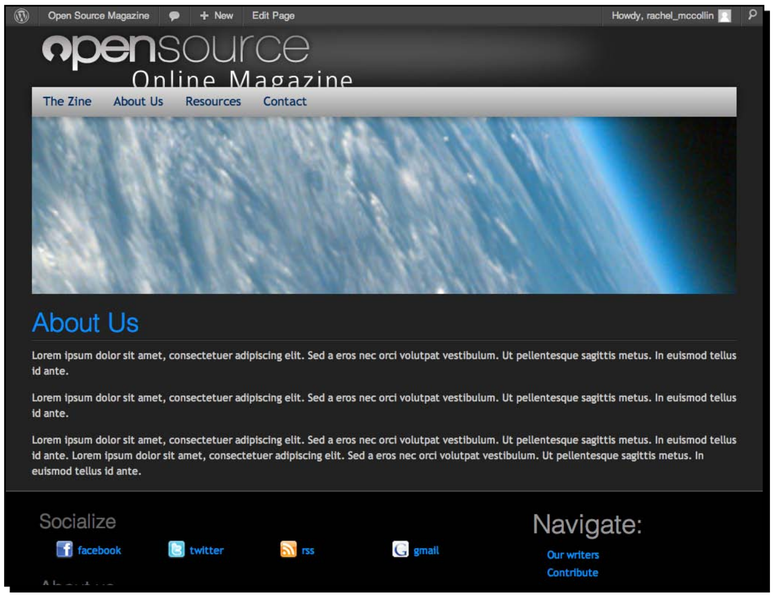
*The character encoding of your site (UTF-8 is recommended, if you are adventurous there are some other encodings)*

Thank you for creating with WordPress.

Version 3.4.2

**3.** Click on **Save Changes** to save your settings.

**4.** Switch to your browser and visit the home page of your site. It's now changed:



About Us

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

5. Now open your theme's `style.css` stylesheet.
6. Above the media queries in your stylesheet add the following:

```
/* hide home page title */
.home h2.post-title {
  display: none;
}
```

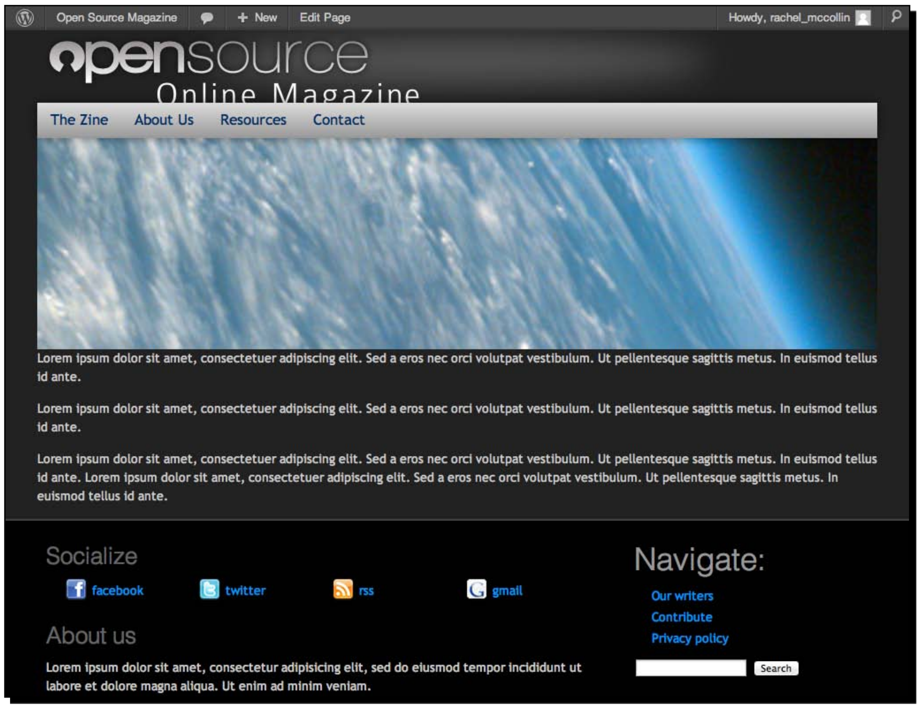
7. Save `style.css` and switch to your browser. Refresh the home page screen.

## What just happened?

We changed our **Reading** settings to display a static home page, and then we added some CSS to hide the home page title on that page:

- `.home` targets the home page only, the `.home` class is generated by `body_class()` which we used earlier
- `h2.post-title` targets the `h2` element in the loop, which displays the post title of any posts found (in this case actually a page, but that's not important)
- `display: none` tells the browser not to display the content we've targeted

So now what does our home page look like?



Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

About us

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam.

The title isn't there anymore! What's left would need some styling as the margin between our image and our content is a bit small, but the CSS has done what we set out to achieve.

Now let's look at the HTML that WordPress generates on the home page. This is just a snippet of the full page HTML showing the elements affected by what we've just done:

```
<div class="content left full">
  <article class="post-16 page type-page status-publish hentry"
id="post-16">
    <h2 class="post-title"><a href="http://rachelmccollin.co.uk/
opensourcemagazine/" rel="bookmark" title="Permanent Link to About
Us">About Us</a></h2>
    <div class="entry-content"><!--//post-->
      <p>Lorem ipsum...
```

The title is still output in the markup—it's the line beginning `<h2 class="post-title">`. This means that anyone viewing our site without CSS, either because they've turned it off or they're using assistive technology such as a screen reader will still see or hear that title.

We want to remove the title altogether, so we use a conditional tag instead.

## Time for action – using a conditional tag to hide our home page's title

Now we'll use a conditional tag to completely remove the home page title.

1. Open your `style.css` file and remove the styling you just added to hide the home page title. Check your home page in the browser, it should be displaying the title again.
2. Open the `page-no-sidebar.php` file, which is the template file our **About Us** page uses.
3. Find the following code:

   ```
   <h2 class="post-title"><a href="<?php the_permalink() ?>"
   rel="bookmark" title="Permanent Link to <?php the_title_
   attribute(); ?>"><?php the_title();?></a></h2>
   ```

4. Add a conditional tag around it so it reads:

   ```
   <?php if ( !is_front_page () ) { ?>
     <h2 class="post-title"><a href="<?php the_permalink() ?>"
   rel="bookmark" title="Permanent Link to <?php the_title_
   attribute(); ?>"><?php the_title();?></a></h2>
     <?php } ?>
   ```

5. Save your template file.
6. Now repeat this process for the `page.php` template file and save that.
7. Switch to your browser and refresh the home page.

## What just happened?

We added a conditional tag to tell WordPress to not output the post title on the site's front page. Let's have a look at that code:

- `<?php if ( !is_front_page () ) { ?>` checks if the user is not on the front page (by inserting an exclamation mark). The `} ?>` at the end is important as the braces will contain the code to output if the condition is met, and `?>` closes PHP so that the next line of HTML can be read by the browser.
- The next line is unchanged, it's the output of our `h2` element and its contents.
- Finally, `<?php } ?>` tells the browser we're using PHP again. We use the closing brace (`}`) to end the code that's output if the condition in our conditional tag is met, and then uses `?>` to close PHP again.

When you refresh your home page again you'll see that the title isn't displayed. It looks exactly the same as the previous screenshot which was the result of using CSS to hide the title.

But the difference is in the code. Let's see the HTML that WordPress outputs for our home page now:

```
<article class="post-16 page type-page status-publish hentry"
id="post-16">
  <div class="entry-content"><!--//post-->
    <p>Lorem ipsum...
```

The `h2` element and its contents have gone completely. Much better!

Before moving on to the next section, we'll just take a moment to restore our **Reading** settings to the way they were, so that the blog page is shown as the home page instead of a static page. Don't undo the changes you've made to your template files though. If you should ever change the **Reading** settings back in the future, or someone else who needs a static home page should use your theme, this conditional tag will be useful.

## Have a go hero – other ways of showing conditional content

Can you think of any other ways of hiding the title in our home page?

Yes, you could use a template file. You could either set up a custom page template for use on the home page, or (even better) create a `front-page.php` file which WordPress will automatically use to display home page content. In your new template file, you'd remove the `h2` element and its contents altogether. We've used the conditional tag to create a whole new template file just to remove one line of code seems a bit disproportionate.

Can you think of any other uses for conditional tags? Try to identify how you might use them in other places in your theme, and give it a go.

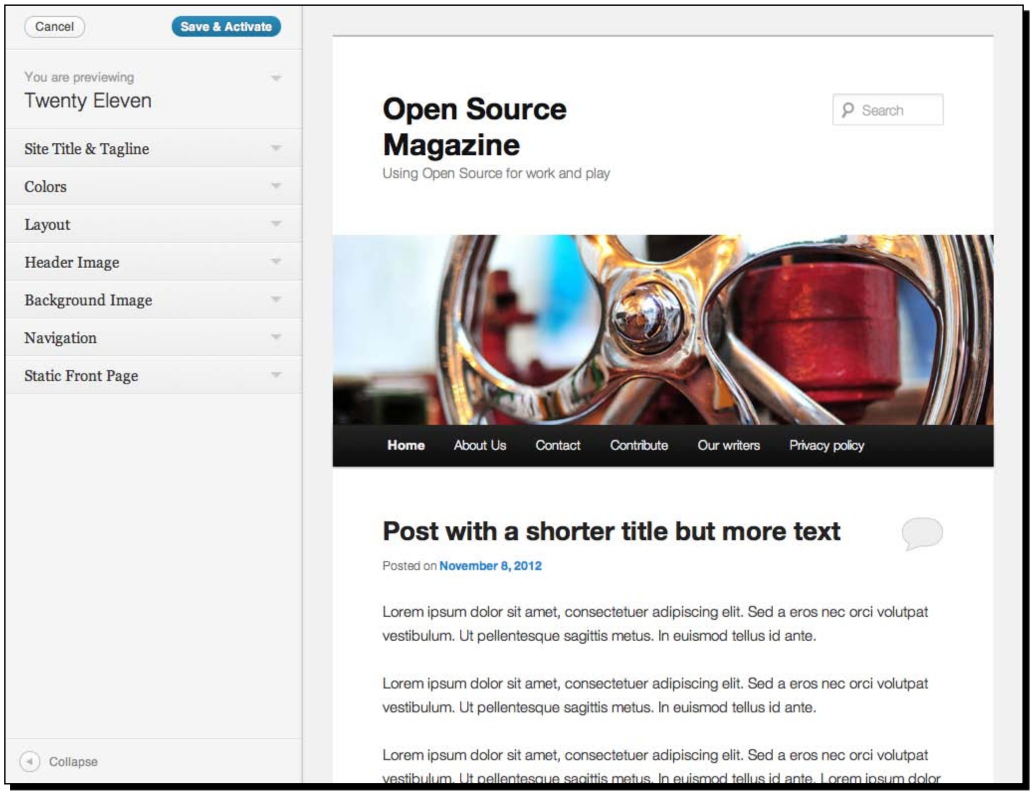
> For a full list of the conditional tags available and how to use them, see `http://codex.wordpress.org/Conditional_Tags`.

## The Theme Customizer

You could quite happily stop where you are and you'd have a great theme. It's structured well, it makes use of the `bloginfo` tag to display site information, it has a menu and some cool widgets, as well as using template files and conditional tags to display the right content in the right place.

But if your theme is going to be used by other people, you can add more options to help make their lives easier. By activating the **Theme Customizer**, you can let users tweak settings such as colors and fonts or add content to be displayed in the theme. These are great features if you're going to release your theme to the public, but can also be useful for client sites.

The Theme Customizer was introduced with WordPress 3.4. The Theme Customizer for the default **Twenty Eleven** theme looks like the following screenshot:



Open Source Magazine

Using Open Source for work and play

Post with a shorter title but more text

Posted on November 8, 2012

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor

To give your theme users access to the Theme Customizer you need to add some code to your `functions.php` file, and then you need to add the relevant code for each option you want to provide them with. We'll start by adding Theme Customizer functionality to our theme.

## Time for action - adding the Theme Customizer to our theme

To do this, we need to add some code to our `functions.php` file.

1. Open your theme's `functions.php` file.
2. Before the closing `?>` tag, add the following:

   ```
   function add_theme_customizer( $wp_customize )
       {

       }
     add_action( 'customize_register', ' add_theme_customizer');
   ```

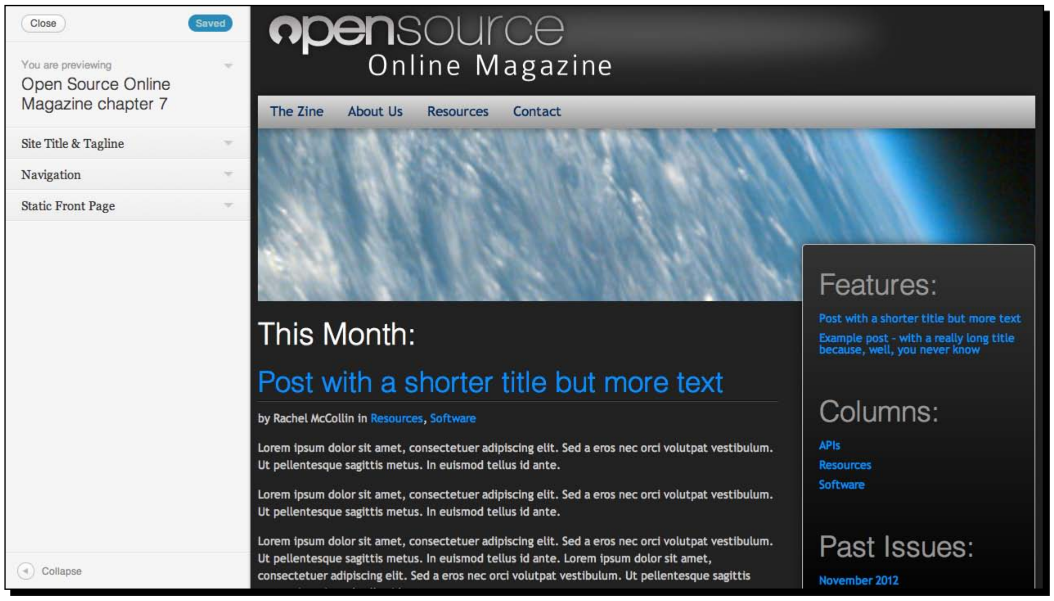
3. Save the `functions.php` file.
4. To view the Theme Customizer, go to **Appearance** | **Themes**, and then in the links below your theme, click on **Customize**.

## *What just happened?*

We added a new function to add Theme Customizer capability to our theme. Let's have a look at that function:

- First we define our function, `add_theme_customizer`. You can give this any name you want, the name we've used makes it easy to see what the function does.
- The space between the braces is where all the code will go to add specific options to our Theme Customizer.
- After closing the braces, we add an action. This will run the code inside our `add_theme_customizer` function when WordPress runs the `customize_register` function, which is a default function.

Now we can view the Theme Customizer for our theme. As we haven't defined any additional functions, it currently includes the default options provided by WordPress:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis

We can see the default customizations added by WordPress:

- **Site Title & Tagline**: Here we can change the site's name and description
- **Navigation**: Change the menu used in the main navigation area
- **Static Front Page**: Change the **Reading** settings if you want the front page to display a static page instead of the latest posts

We can add more options to the Theme Customizer, so let's do it.

## Time for action – adding some more options to the Theme Customizer

WordPress provides some default options in the Theme Customizer, and we can also add our own. Let's add the option for users to tweak the color of links.

1. In `functions.php`, add the following code between the curly braces in the function you just defined:

```
// SETTINGS
  $wp_customize->add_setting( 'content_link_color', array(
    'default' => '#088fff',
    'transport' => 'refresh',
    ) );
// CONTROLS
  $wp_customize->add_control( new WP_Customize_Color_Control( $wp_
customize, 'content_link_color', array(
    'label' => 'Content Link Color',
    'section' => 'colors',
    ) ) );
```

2. Save your `functions.php` file.

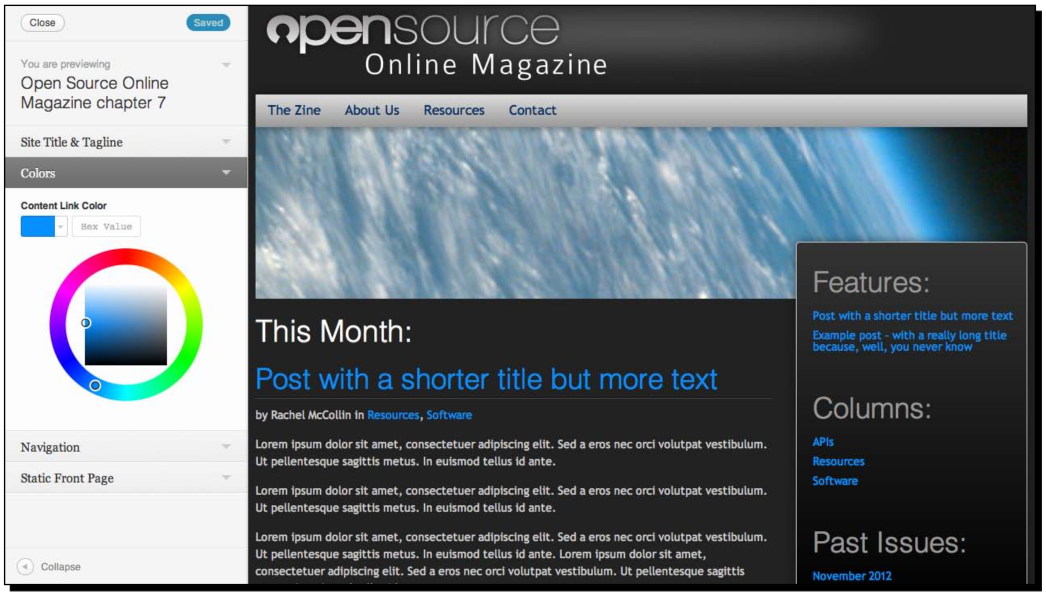
## *What just happened?*

We added a function to enable users to change the link colors in their site using the Theme Customizer. This is the most complex piece of PHP code we've added yet so let's have a look at how it works:

- Firstly, it defines the settings which are available in our Theme Customizer, using the WordPress `$wp_customize->add_setting` function:
  - `content_link_color` is the ID of our setting
  - the `default` value is `#088fff`, which is the link color coded into our theme's stylesheet
  - `'transport' => 'refresh'` tells WordPress to display any changes users may make in the Theme Customizer as they are making them

- Next, it specifies the control which users will use to edit the setting, using the `new WP_Customize_Color_Control` function:
    - `content_link_color` is the ID for our setting that tells WordPress that this control will amend that setting
    - The `label` value is what WordPress will display in the **Theme Customizer** screen
    - `section` is the section within that screen in which WordPress will place our control, in this case, `colors`

Let's see what our Theme Customizer looks like now:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis

Any changes the user makes won't actually have any effect yet, because we haven't told WordPress to alter the CSS based on their modifications.

## Time for action – ensuring Theme Customizer changes are carried through to the CSS

To ensure any changes made by users actually take effect, we need to add another function telling WordPress to alter the CSS.

1. In your `functions.php` file, below the functions you've just added, add the following lines:

```
function theme_customize_css()
  {
    ?>
         <style type="text/css">
             a { color:<?php echo get_theme_mod( 'content_link_
color' ); ?>; }
         </style>
    <?php
  }
add_action( 'wp_head', 'theme_customize_css');
```

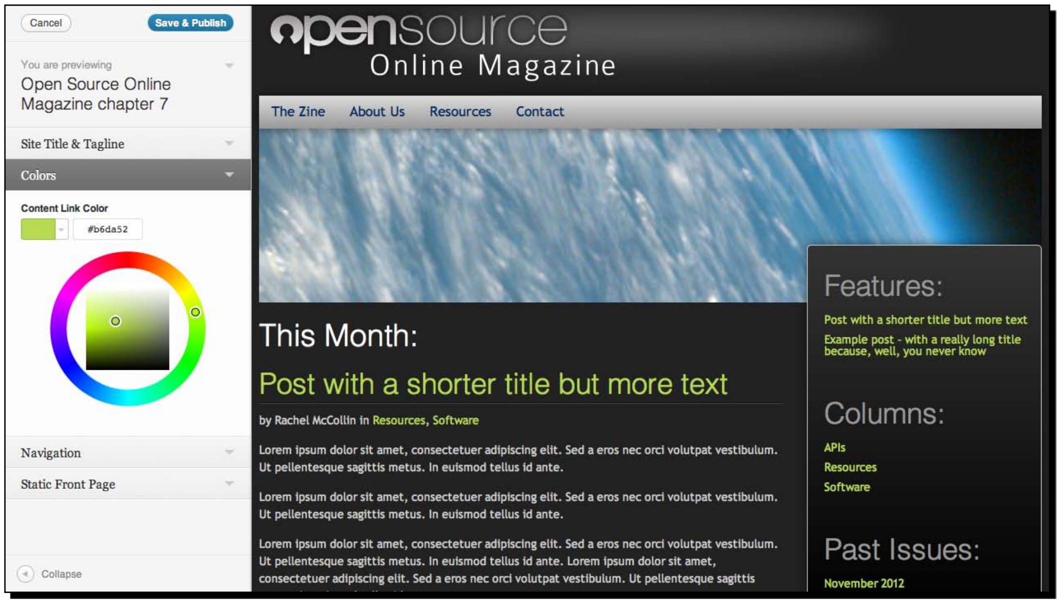
2. Save your `functions.php` file.

### What just happened?

We added a final function which tells WordPress to amend CSS based on any changes the user makes in the Theme Customizer screen. In detail, the code is as follows:

- We start with the `theme_customize_css()` function which defines our function's name.
- Inside the function's settings, we set styling using `<style type="text/css">` which is inline CSS to be inserted in our page's `<head>` section:
- The styling uses `echo get_theme_mod( 'content_link_color' )`. What this does is fetch the value of `content_link_color` (the setting we defined earlier) and echoes it, which means it outputs it.
- Finally, after closing the HTML tags and PHP braces, we define an action: `add_action( 'wp_head', 'theme_customize_css')`. This defines an action to be run with the `wp_head` hook, which means WordPress will use it whenever it encounters `wp_head` in our page's `<head>` section. You may remember we added that to our theme in the *Finishing off with the footer* section in *Chapter 3*, *Coding It Up*. The action runs our function `theme_customize_css`, at this point. What this will then do is output the HTML into the `<head>` section of each page, generating inline CSS.

Now when our users amend the link color, it will show up on the Theme Customizer screen:



Content Link Color
#b6da52

This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

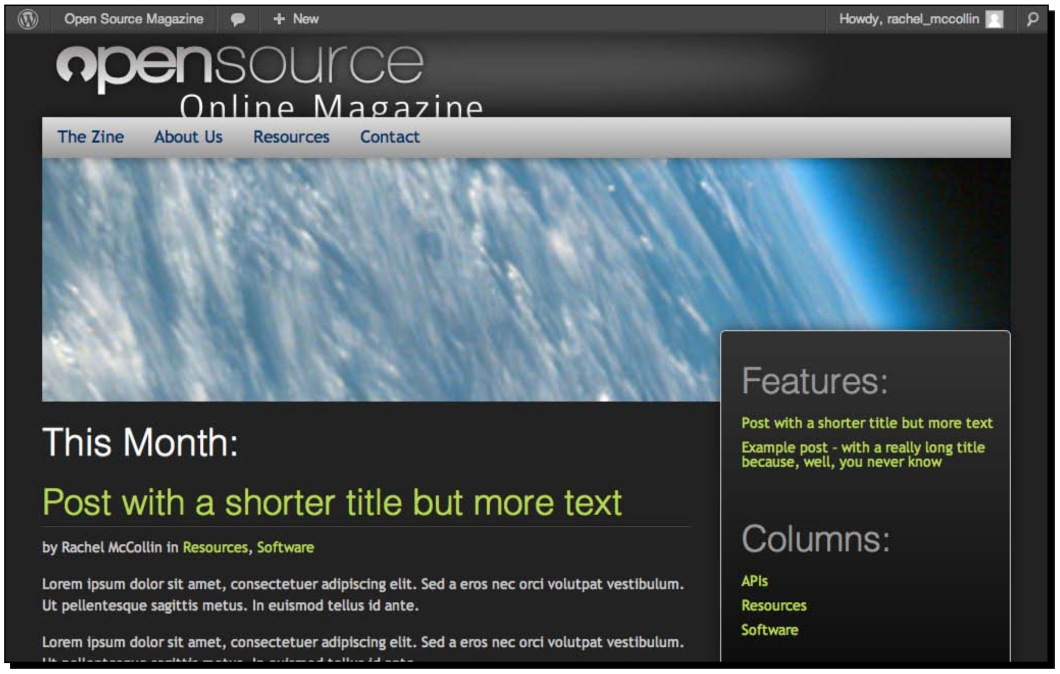
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

If they then save changes by clicking on the **Save** button, the changes will be reflected in the live site, as shown in the following screenshot:



This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum.

Post with a shorter title but more text

Example post - with a really long title because, well, you never know

[ Before continuing, we'll use the Theme Customizer to change the color back to the default CSS as it fits with our design. ]

### Theme Customizer – the possibilities

We've just added one option to the Theme Customizer—of course you could add more. Possibilities include:

- changing any of the colors
- tweaking the layout
- adding content in specific areas of the site
- uploading images

The great thing about using the Theme Customizer is that users can see the effect of their changes before saving, which means they'll be less likely to break the site than if they tried to hack your theme files.

[ For more on the Theme Customizer, see `http://codex.wordpress.org/Theme_Customization_API`. ]

### Have a go hero – adding a theme options screen

Along with activating the Theme Customizer, you could also create a theme options screen which lets users configure a wider range of options in your theme. This involves using functions to create admin screens and menu items, as well as getting to grips with the WordPress Settings API.

Try creating a theme options screen for your theme. You can find out how to do it at `http://codex.wordpress.org/Creating_Options_Pages`.

## Search engine optimization

WordPress is great for SEO. It lets you add meta tags to your pages which will help search engines to index them properly, it makes it easy for you to add information to your images to help search engines to find them, and with the use of plugins, you can do even more.

As SEO is so important to most site owners, we're going to spend some time looking at SEO and how you can develop themes that enhance SEO for the owners of any sites using them.

## SEO checklist

There are a few basic checks you can make to ensure your theme is SEO-friendly. Many of them have other benefits too, such as making the site more accessible or faster.

The main things you should be doing in your themes include:

- Using clean, valid, standards-compliant code
- Using semantic elements which will help search engines (and browsers) understand how the content is organized
- Ensuring your theme isn't sluggish
- Configuring pretty permalinks which make use of search keywords
- Optimizing images with `alt` and `title` attributes
- Using optimized meta tags: `title` and `description`

Of course, in addition to these it's important for a site's content to be SEO-friendly but we won't deal with that here as it's not related to the theme itself.

Let's have a look at each of those in turn.

## Clean, valid, standards-compliant code

A theme which is well coded will have immediate SEO benefits, as well and speed and usability benefits too. Search engines will find it easier to index well-coded sites and will be less likely to blacklist them. In addition, by using semantic elements you can give search engines some pointers as to how your theme's content is structured, for example by using elements such as `header`, `article`, `aside`, and `footer` correctly.

We covered validation in detail in *Chapter 5*, *Debugging and Validation*, and ran our site through the W3C validator. If you haven't gone through that process, it's a good idea to do so, especially if you're going to be releasing your theme to the public.

## Semantic HTML5

You'll remember from *Chapter 3*, *Coding it Up,* that we coded our theme using HTML5. This latest version of HTML gives us some new semantic elements to work with that make more sense of our files. The elements we used included:

- `header` – the site header, which you may have coded in the past as `<div ID="header">`.
- `article` – the element containing each of our posts.

- `aside` – it contains sidebars. An `aside` is anything that is separate from the main content and sits outside the flow of the page.
- `footer` – the site footer. You can also use this for a footer within any other element, for example an article's footer might contain some metadata about the article.

These elements tell search engines more about the structure of a page than the `div` tags we may have used in the past, which have no semantic meaning at all.

For more information on HTML5 and how to implement it, see the excellent HTML5 Doctor website at `http://html5doctor.com`. For an overview of how HTML5 and WordPress fit together, see `http://rachelmccollin.co.uk/blog/wordpress-and-html5/`.

## Making your theme run faster

This isn't really so much about themes as it is about the sites they're used on, but there are some tips for faster sites that can also be applied to themes.

Some tips for making your theme lean and fast, so it doesn't slow down the sites it's installed in include:

- Keep your code tidy – only use what's necessary and delete anything that's not being used.
- Avoid duplication in your code – for example, when using CSS for styling. A lot of themes will include the same styling for multiple elements or classes, repeating the same declarations over and over. Our object-oriented approach means we only have to add each bit of styling once and then use classes to apply it to our theme.
- Avoid inline JavaScript and CSS – store them in external files such as `style.css` and then call them from your template files.

Occasionally inline CSS and scripts may be unavoidable, such as when we added styling earlier using the Theme Customizer. This was because we needed to attach it to the `get_option()` function, which we can't run in a stylesheet.

- Call stylesheets at the top of each page (in `header.php`) and scripts at the bottom (in `footer.php`) where possible.
- Minimize HTTP requests by using only the images you need. For example, by using CSS3 for gradients and rounded corners we avoided a large number of HTTP requests for images that older themes would have made to achieve these effects.

Once you have your theme installed on a site, there's more you can do to make the site itself faster, for example:

- Use a caching plugin such as WP Supercache (available at `http://wordpress.org/extend/plugins/wp-super-cache/`) to cache your site. The way this works is by generating static HTML from the PHP generated by WordPress. This HTML is then stored on the server with your site and displayed when a user accesses the site. This is much faster than running all the PHP every time.
- Minify your code with a plugin such as WP Minify (`http://wordpress.org/extend/plugins/wp-minify/`), which compresses the code in your site to make it run faster.

## Search-engine optimized permalinks

In *Chapter 4, Advanced Theme Features* we looked at how to configure so-called "pretty" permalinks, and how to edit the slug for each page and post to give us more control over those permalinks. A slug is a unique identifier for a page or post which appears at the end of its URL, so the page `http://rachelmccollin.co.uk/opensourcemagazine/contact/` has the slug `contact`. When editing your slugs, you will help search engine rankings if you ensure those slugs include some of your search keywords, in other words, the words or phrases people are likely to use when looking for sites like yours.

Identifying the best search engine keywords to target can be a mammoth task, especially for sites where being found by search engines is crucial and there's a lot of competition. To learn how to do this, check out *WordPress 3 Search Engine Optimization*, *Michael David*, *Packt Publishing*, and the article on the subject at `http://www.packtpub.com/article/customizing-wordpress-settings-seo`.

## Optimizing images and links with alt and title attributes

This is a topic more for site owners than for theme builders, as they will be uploading more images and adding more links to their site. However, it does have its place in theme building.

Our theme includes images as background images which can't have alt or title attributes assigned to them. But let's imagine your theme included a logo as part of the HTML markup. How would you optimize that image for SEO?

## Time for action – optimizing a logo for SEO

Here we'll add a linked image to our site header and optimize it for SEO. We don't need to check the visual impact on the theme, as it will break the design—after all, this is just an example.

1. Open your theme's `header.php` file.
2. Inside the `<header>` element, and above the `<hgroup>` element, insert the following code:

```
<a href="<?php bloginfo('url'); ?>" title="<?php bloginfo('name');
?>">
  <img src="<?php bloginfo('stylesheet_directory')?>/images/osmag-
logos.png" alt="<?php bloginfo('name')?> - logo" title="Logo -
click for home page"/>
</a>
```

3. Save your `header.php` file.
4. Switch to the browser and check the code generated by WordPress.

### *What just happened?*

We added an image inside a link, and optimized both for SEO. Let's look at each.

First the link, which has the following attributes:

- `href="<?php bloginfo('url'); ?>"` – this ensures that the link is directed to the site's home page, using the `bloginfo` template tag we first encountered in *Chapter 3*, *Coding it Up*.
- `title="<?php bloginfo('name'); ?>"` – the link has a title which corresponds to the site name, again using `bloginfo`. This tells browsers, search engines, and screen readers more about the link.

Now the image. Its attributes are:

- `src="<?php bloginfo('stylesheet_directory')?>/images/osmag-logos.png"` – the image is contained in the images directory within our theme directory.
- `alt="<?php bloginfo('name')?> - logo"` – the `alt` attribute is what a screen reader would read out to a user, so it needs to be descriptive. As well as adding the name of the site we've added a note that it's the logo.
- `title="Logo - click for home page"` – the title gives users some helpful information about how to use this link.

Using `bloginfo` like this means you can code these attributes into your theme without worrying about what will be generated by different sites using the theme—WordPress will fetch the correct information for you.

[ When managing images and links in a site, you don't have to worry about writing the code. WordPress handles attributes via its links and media upload interfaces. That's a relief! ]

Let's see the code generated by WordPress for that image and its link:

```
<a href="http://rachelmccollin.co.uk/opensourcemagazine" title="Open
Source Magazine">
  <img src="http://rachelmccollin.co.uk/opensourcemagazine/wp-content/
themes/opensourcemagazine_ch7/images/osmag-logos.png" alt="Open Source
Magazine - logo" title="Logo - click for home page"/>
</a>
```

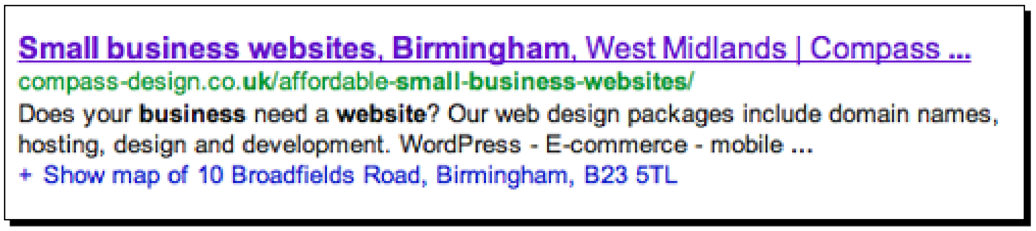
As you can see, the HTML which WordPress generates includes useful information for search engines and screen readers.

[ Before moving on, we'll quickly delete the code we added here, as it breaks our site's design. You might want to keep it in your theme if you're including a logo in your markup instead of as a background image. If you wanted to, you could make this an image your theme's users could upload via the Theme Customizer. ]

## Using optimized meta tags – page titles and descriptions

Along with using `alt` and `title` attributes for our images and links, we can also use meta tags for each page to tell search engines what the page is about. These are very important for SEO, as they are the text that's displayed when Google (for example) displays your site on a search results page. Along with influencing the likelihood that your site will be found, they also influence the chances of a user clicking that link in the search results page and visiting your site.

For example, here's the listing Google displays when it finds the small business websites page in my agency site, `http:compass-design.co.uk` in a search:



Small business websites, Birmingham, West Midlands | Compass ...
compass-design.co.uk/affordable-small-business-websites/
Does your **business** need a **website**? Our web design packages include domain names, hosting, design and development. WordPress - E-commerce - mobile ...
+ Show map of 10 Broadfields Road, Birmingham, B23 5TL

The underlined text in purple is the title of this page, while the black text below the link is its description. In this case it's been optimized using a plugin called **SEO by Yoast** (`http://wordpress.org/extend/plugins/wordpress-seo/`). We won't go into that here as it's a task for site owners, not theme builders. The blue text at the bottom is the business address—something which Google has in its database because Compass Design is registered with Google Places.

As a theme builder you can optimize these meta tags for your theme users—great if users don't want to use a plugin or don't know how.

## Time for action – optimizing our theme's page meta tags

The meta tags go in the `<head>` section of each page, which in a WordPress theme is in `header.php`.

1. Open your theme's `header.php` file.
2. Find the following code and delete it:

```
<meta name="description" content="Description of content that
contains top keyword phrases"/>
<meta name="keywords" content="Key words and phrases, comma
separated, not directly used in content - google ignores this tag
but used in other engines as a fall back"/>
<title>Open Source Online Magazine</title>
```

3. Add an optimized `title` meta tag. In the space where you've just deleted the existing code, add the following:

```
<title><?php wp_title('|','true','right'); ?><?php
bloginfo('name'); ?></title>
```

4. Now, below that, add the code for the description:

```
<meta name="description" content="<?php bloginfo('description');
?>" >
```

5. Save your `header.php` file and switch to your browser. Visit the page for one of your blog posts and take a look at the title displayed.

## What just happened?

We added some meta tags to our theme, specifically the `title` tag and a `description` meta tag. Let's check the code we used:

Our `title` tag includes two elements:

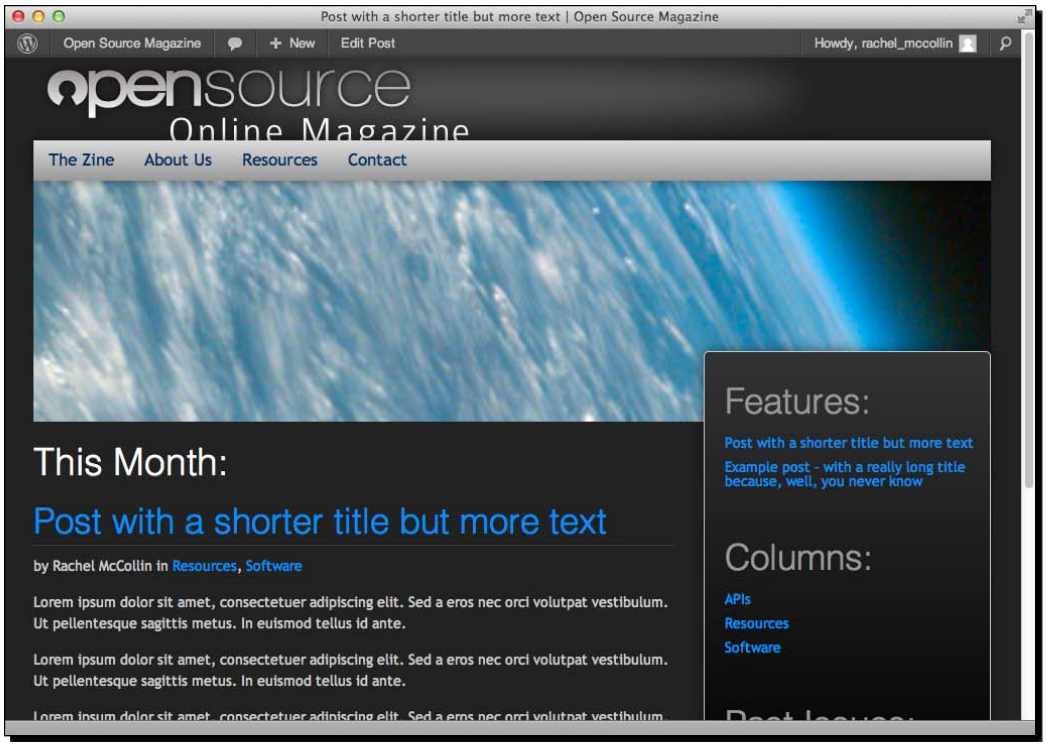
- Firstly, the name of the current post or page that is output using `wp_title('|','true','right')`:
    - `wp_title` is the WordPress template tag which displays the title of the current post or page
    - The first parameter `'|'` displays a separator
    - The second parameter, `'true'` tells WordPress to display (or `echo`, in PHP terms) the page title, rather than just fetching it for later use
    - The third parameter tells WordPress where to display the separator—to the `right` of the page title
- Next, we use `bloginfo('name')` to display the site name—it's that handy `bloginfo` tag again.

Our description meta tag uses the content attribute to display the site description using `bloginfo('description')`.

**Why no meta tag for keywords?**

We haven't included a meta tag for keywords as Google no longer uses keywords when generating search results. This is because keywords were so widely abused in the past that they became unreliable. If you wanted to use keywords (for example, if you're optimizing for a search engine that does still use keywords), the best approach is to use a plugin.

So let's have a look at our post, as viewed in the Safari browser:


Post with a shorter title but more text | Open Source Magazine
Open Source Magazine
+ New
Edit Post
Howdy, rachel_mccollin
opensource
Online Magazine
The Zine
About Us
Resources
Contact
Features:
Post with a shorter title but more text
Example post - with a really long title because, well, you never know
Columns:
APIs
Resources
Software

This Month:

Post with a shorter title but more text

by Rachel McCollin in Resources, Software

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Sed a eros nec orci volutpat vestibulum. Ut pellentesque sagittis metus. In euismod tellus id ante.

You can see our title displayed by the browser. However, you can't see the description. To check that, let's look at the code generated for this page:

```
<title>Post with a shorter title but more text | Open Source
Magazine</title>
<meta name="description" content="Using Open Source for work and play"
>
```

As you can see, our description is there too. Well done!

## Summary

In this chapter, we learned some extra tips and tricks to make your themes even better. We learned about:

- **Template files** – creating them and using them to display different content in different parts of your site. We created a custom page template for pages needing full width content and no sidebar.
- **Conditional tags** – we looked at how to use them to display different content or hide content when certain conditions are met. We used a conditional tag to hide the page title on the home page.
- **Theme Customizer** – we added this functionality to our theme and gave users the option of tweaking some colors.
- **SEO** – we worked through an SEO checklist for theme building and optimized our theme's images, links, and meta tags for SEO.

You're now at the end of this book and have worked through the process of creating your first WordPress theme from scratch, congratulations! You've learned how to:

- Design a theme and prepare wireframes and mockups
- Write the HTML and CSS for your theme
- Convert your HTML to PHP and split that into template files
- Add template tags, menus, widgets, and more
- Debug and validate your theme
- Package your theme up for users
- Enhance your theme with advanced features

You now have an all-singing, all-dancing theme which goes beyond the basics and will enable you (and other users) to create great websites.

Being able to build WordPress themes is a core skill without which you can't really achieve very much with the platform. You now have the skills you need to design and develop great themes for your own or your client sites or for release to other WordPress users.

Now all that's left is for you to put what you've learned into practice on some more themes and enjoy being a theme developer. Good luck!

# Pop Quiz Answers

## Chapter 2, Preparing a Design for Our WordPress Theme

### Pop quiz – questions about theme design

| | |
|---|---|
| Q1 | 4. All of the above. |
| Q2 | 4. It helps you see your design quickly and start considering usability and content. |
| Q3 | 1. Lots—it helps you see what your design will look like when lots of content is added. |

## Chapter 3, Coding it Up

### Pop quiz – questions about WordPress theme structure

| | |
|---|---|
| Q1 | 1. Only the first statement is true—`page.php` trumps `index.php` when viewing a static page. When viewing a category archive, it's `category.php` that trumps `archive.php` (not the other way round). `single.php` trumps `index.php` when viewing an individual post or attachment—it isn't used for viewing static pages. |
| Q2 | 3. The `header.php` file contains everything from the opening the `DOCTYPE` declaration to the end of the header in the design, which is generally the end of the `<header>` tag (or the end of the main `<nav>` tag). |

| | |
|---|---|
| Q3 | All three. The files which most commonly contain widgets are `sidebar.php` and `footer.php`. However, there is no reason you couldn't add widgets to `header.php`—they can be useful if you want a widget area in your header or above your content. |

# Chapter 4, Advanced Theme Features

## Pop quiz – understanding advanced theme features

| | |
|---|---|
| Q1 | 2 and 3. Pretty permalinks are user-friendly and will benefit SEO |
| Q2 | 4. The sidebar is the most common place for widget areas and the footer is the second most common. But there's nothing to stop you adding them anywhere you like. They can be very useful above and below the content, for example. |
| Q3 | 1. To add a menu, you need to follow three steps: register it in `functions.php`, add it to `header.php` (or whichever template file you want it in), and then set it up in the **Menus** admin screen. |
| Q4 | 3. `archive.php` from the parent theme, as a category listing is an archive page. If the child theme had an `archive.php` or `category.php` file, they would override the file in the parent theme. |

# Chapter 6, Your Theme in Action

## Pop quiz – questions on packaging up your theme

| | |
|---|---|
| Q1 | 1. |
| Q2 | 4. |
| Q3 | 2. |
| Q4 | 4. |

# Index