JON DUCKETT

HTML & CSS

Design and Build Websites

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JOHN WILEY & SONS, INC.

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The text stock is SFI certified

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Try out and download all of the code for this book online at:
http://www.htmlandcssbook.com/code/

CONTENTS

INTRODUCTION

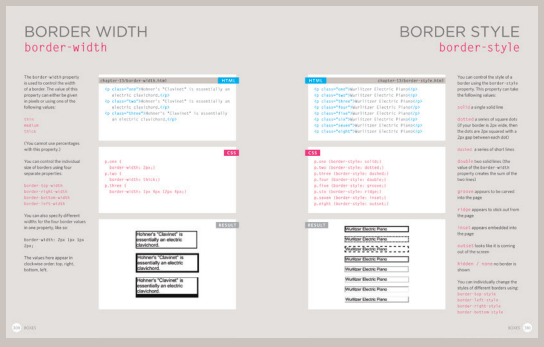
- About this book
- How the web works
- Learning from other pages

Firstly, thank you for picking up this book. It has been written with two very different types of people in mind:

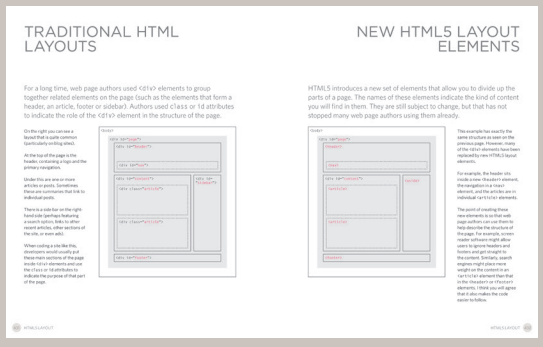
- Those who want to learn how to design and build websites from scratch
- Anyone who has a website (that may be built using a content management system, blogging software, or an e-commerce platform) and wants more control over the appearance of their pages

The only things you need in order to use this book are a computer with a web browser and a text editor (such as Notepad, which comes with Windows, or TextEdit, which comes with Macs).

Introduction pages come at the beginning of each chapter. They introduce the key topics you will learn about.



Reference pages introduce key pieces of HTML & CSS code. The HTML code is shown in blue and CSS code is shown in pink.



Background pages appear on white; they explain the context of the topics covered that are discussed in each chapter.

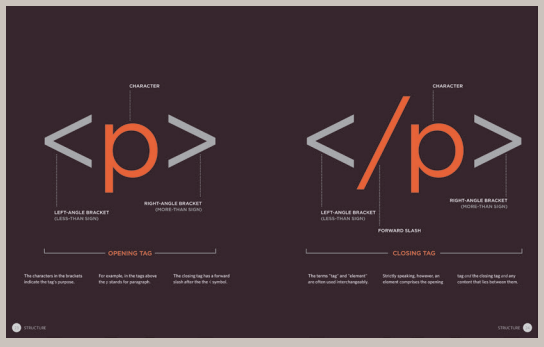
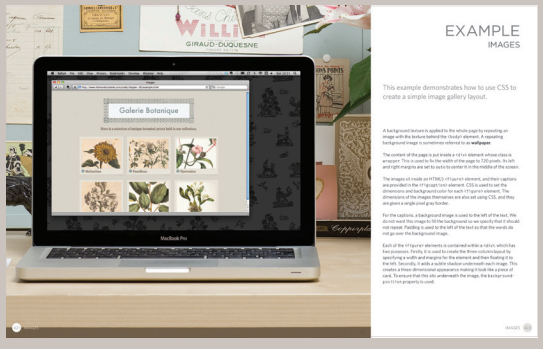
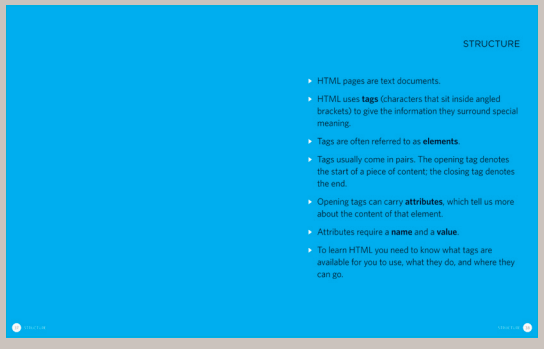


Diagram and infographics pages are shown on a dark background. They provide a simple, visual reference to topics discussed.



Example pages put together the topics you have learned and demonstrate how they can be applied in each.



Summary pages come at the end of each chapter. They remind you of the key topics that were covered in each chapter.

IS IT HARD TO LEARN?

Many books that teach HTML and CSS resemble dull manuals. To make it easier for you to learn, we threw away the traditional template used by publishers and redesigned this book from scratch.

At work, when people look at my screen and see it full of code, it's not unusual to get a comment about it looking very complicated or how clever I must be to understand it. The truth is, it's not that hard to learn how to write web pages and read the code used to create them; you certainly don't have to be a "programmer."

Understanding HTML and CSS can help anyone who works with the web; designers can create more attractive and usable sites, website editors can create better content, marketers can communicate with their audience more effectively, and managers can commission better sites and get the best out of their teams.

I've focussed on the code you need to use 90% of the time and omitted the code that you would rarely see even if writing websites is your full time job. By the end of the book, if you come across the other 10% you will be able to Google it to find out what it means quickly and easily.

I have also added practical information on topics I am commonly asked about, such as how to prepare images, audio and video for the web, how to approach the design and build of a new site, how to improve your rankings in search engines (SEO), and how to use Google Analytics to learn about visitors to your site.

THE STRUCTURE OF THIS BOOK

In order to teach you about creating web pages, this book is divided into three sections:

1: HTML

We will spend the first chapter looking at how HTML is used to create web pages. You will see that you start by writing down the words you want to appear on your page. You then add tags or elements to the words so that the browser knows what is a heading, where a paragraph begins and ends, and so on.

The rest of this section introduces the tags you have at your disposal to create web pages, grouped into chapters on: text, lists, links, images, tables, forms, video audio and flash, and miscellaneous elements.

I should warn you that the examples in the first nine chapters are not exciting to look at, yet they are the foundation of every web page. The following chapters on CSS will show you how to make your pages look a lot more interesting.

2: CSS

We start this section with a chapter that explains how CSS uses rules to enable you to control the styling and layout of web pages. We then go on to look at the wide variety of CSS properties you can use in your CSS rules. These properties generally fall into one of two categories:

Presentation: How to control things like the color of text, the fonts you want to use and the size of those fonts, how to add background colors to pages (or parts of a page), and how to add background images.

Layout: How to control where the different elements are positioned on the screen. You will also learn several techniques that professionals use to make their pages more attractive.

3: PRACTICAL

We end up with some helpful information that will assist you in building better websites.

We look at some new tags that will be introduced in HTML5 to help describe the structure of your pages. HTML5 is the latest version of HTML (still under development at the time of writing). Before learning about these elements, you need a good grasp of how CSS is used to control the design of web pages. There is a chapter that talks you through a design process that you might like to follow when creating a new website.

Finally, we end up looking at topics that will help you once you have built your site, such as putting it on the web, search engine optimisation (SEO) and using analytics software to track who comes to your site and what they are looking at.

HOW PEOPLE ACCESS THE WEB

Before we look at the code used to build websites it is important to consider the different ways in which people access the web and clarify some terminology.

BROWSERS

People access websites using software called a **web browser**. Popular examples include Firefox, Internet Explorer, Safari, Chrome, and Opera.

In order to view a web page, users might type a web address into their browser, follow a link from another site, or use a bookmark.

Software manufacturers regularly release new versions of browsers with new features and supporting new additions to languages. It is important, however, to remember that many computer owners will not be running the latest versions of these browsers. Therefore you cannot rely on all visitors to your site being able to use the latest functionality offered in all browsers.

You will learn how to tell which browsers visitors use to access your website in Chapter 19.

WEB SERVERS

When you ask your browser for a web page, the request is sent across the Internet to a special computer known as a **web server** which hosts the website.

Web servers are special computers that are constantly connected to the Internet, and are optimized to send web pages out to people who request them.

Some big companies run their own web servers, but it is more common to use the services of a **web hosting** company who charge a fee to host your site.

DEVICES

People are accessing websites on an increasing range of devices including desktop computers, laptops, tablets, and mobile phones. It is important to remember that various devices have different screen sizes and some have faster connections to the web than others.

SCREEN READERS

Screen readers are programs that read out the contents of a computer screen to a user. They are commonly used by people with visual impairments.

In the same way that many countries have legislations that require public buildings to be accessible to those with disabilities, many laws have also been passed that require websites be accessible to those with disabilities.

Throughout this book you will see several references to screen readers. These notes will help ensure that the sites you create are accessible to people who use such software.

It is interesting to note that technologies similar to those employed by screen readers are also being used in other areas where people are unable read a screen, such as when they are driving or jogging.

HOW WEBSITES ARE CREATED

All websites use HTML and CSS, but content management systems, blogging software, and e-commerce platforms often add a few more technologies into the mix.

WHAT YOU SEE

When you are looking at a website, it is most likely that your browser will be receiving HTML and CSS from the web server that hosts the site. The web browser interprets the HTML and CSS code to create the page that you see.

Most web pages also include extra content such as images, audio, video, or animations and this book will teach you how to prepare them for use on the web and then how to insert them into your web pages.

Some sites also send JavaScript or Flash to your browser, and you will see how to add JavaScript and Flash in your web pages. Both of these technologies are advanced topics that you can go on to learn more about once you have mastered HTML and CSS, if you want to.

HOW IT IS CREATED

Small websites are often written just using HTML and CSS.

Larger websites — in particular those that are updated regularly and use a content management system (CMS), blogging tools, or e-commerce software — often make use of more complex technologies on the web server, but these technologies are actually used to produce HTML and CSS that is then sent to the browser. So, if your site uses these technologies, you will be able to use your new HTML and CSS knowledge to take more control over how your site looks.

Larger, more complex sites like these may use a database to store data, and programming languages such as PHP, ASP.Net, Java, or Ruby on the web server, but you do not need to know these technologies to improve what the user sees. The skills you'll learn in this book should be enough to help you on that road.

HTML5 & CSS3

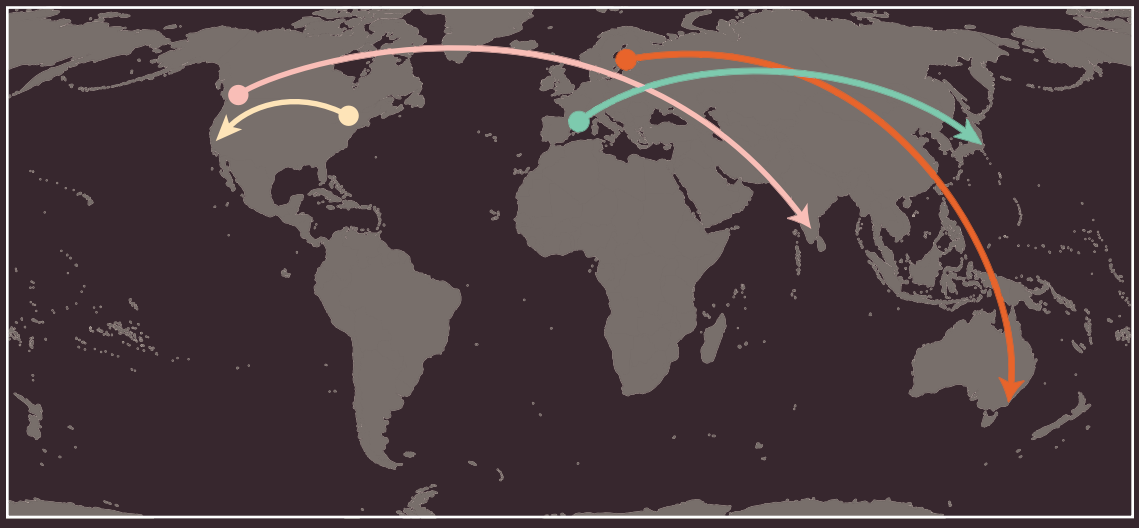
Since the web was first created there have been several versions of HTML and CSS — each intended to be an improvement on the previous version.

At the time of writing this book, HTML5 & CSS3 were still being developed. Although they had not been finalized, many browsers were already supporting some features of these languages and a lot of people were using the latest code on their websites. I have therefore chosen to teach you these latest versions.

Because HTML5 and CSS3 build on previous versions of these languages, learning these means you will also be able to understand the earlier versions of them. I have added clear notes when the code is new and also when it might not work in older browsers.

HOW THE WEB WORKS

When you visit a website, the web server hosting that site could be anywhere in the world. In order for you to find the location of the web server, your browser will first connect to a Domain Name System (DNS) server.



On this page you can see examples that demonstrate how the web server that hosts the website you are visiting can be anywhere in the world. It is the DNS servers that tell your browser how to find the website.

- A user in Barcelona visits `sony.jp` in Tokyo
- A user in New York visits `google.com` in San Francisco
- A user in Stockholm visits `qantas.com.au` in Sydney
- A user in Vancouver visits `airindia.in` in Bangalore

On the right you can see what happens when a web user in England wants to view the website of the Louvre art gallery in France which is located at `www.louvre.fr`. Firstly, the browser in Cambridge contacts a DNS server in London. The DNS server then tells the browser the location of the web server hosting the site in Paris.

1

When you connect to the web, you do so via an Internet Service Provider (ISP). You type a domain name or web address into your browser to visit a site; for example: `google.com`, `bbc.co.uk`, `microsoft.com`.

2

Your computer contacts a network of servers called Domain Name System (DNS) servers. These act like phone books; they tell your computer the IP address associated with the requested domain name. Every device on the web has a unique IP address; it is like the telephone number for that computer. Traditionally these were numbers of up to 12 digits separated by periods/full stops but they are now being updated to sets of up to 32 characters.

3

The unique number that the DNS server returns to your computer allows your browser to contact the web server that hosts the website you requested. A web server is a computer that is constantly connected to the web, and is set up especially to send web pages to users.

4

The web server then sends the page you requested back to your web browser.

1

STRUCTURE

- Understanding structure
- Learning about markup
- Tags and elements

We come across all kinds of documents every day of our lives. Newspapers, insurance forms, shop catalogues... the list goes on.

Many web pages act like electronic versions of these documents. For example, newspapers show the same stories in print as they do on websites; you can apply for insurance over the web; and stores have online catalogs and e-commerce facilities.

In all kinds of documents, structure is very important in helping readers to understand the messages you are trying to convey and to navigate around the document. So, in order to learn how to write web pages, it is very important to understand how to structure documents. In this chapter you will:

- See how HTML describes the structure of a web page
- Learn how tags or elements are added to your document
- Write your first web page


Safari File Edit View History Bookmarks Develop Window Help
Sun 12:17
http://www.htmlandcssbook.com/code/chapter-01/example.html
http://www.htmlandcssbook.com/code/chapter-01/example.html
Google
This is the Main Heading
This text might be an introduction to the rest of the page. And if the page is a long one it might be split up into several sub-headings.
This is a Sub-Heading
Many long articles have sub-headings to help you follow the structure of what is being written. There may even be sub-sub-headings (or lower-level headings).
Another Sub-Heading
Here you can see another sub-heading.
MacBook Pro

HOW PAGES USE STRUCTURE

Think about the stories you read in a newspaper: for each story, there will be a headline, some text, and possibly some images. If the article is a long piece, there may be subheadings that split the story into separate sections or quotes from those involved. Structure helps readers understand the stories in the newspaper.

The structure is very similar when a news story is viewed online (although it may also feature audio or video). This is illustrated on the right with a copy of a newspaper alongside the corresponding article on its website.

Now think about a very different type of document — an insurance form. Insurance forms often have headings for different sections, and each section contains a list of questions with areas for you to fill in details or checkboxes to tick. Again, the structure is very similar online.

Read more on MediaGuardian.co.uk

Digital economy or bust
Part 33: In which the team turn up the volume with inside track on The X Factor – and get a glimpse of the future

Coming up this week
Monday: Shortlists for Student Media Awards announced
Wednesday to Friday: Coverage of the RTS Cambridge Convention

Interview Rio Caraeff

Vevo revolutionary

Universal's former mobile chief is leading the music industry's fight to shake up online video. He reveals his frustration with MTV, and says why no one need own music if his site succeeds. Interview by **Mark Sweney**

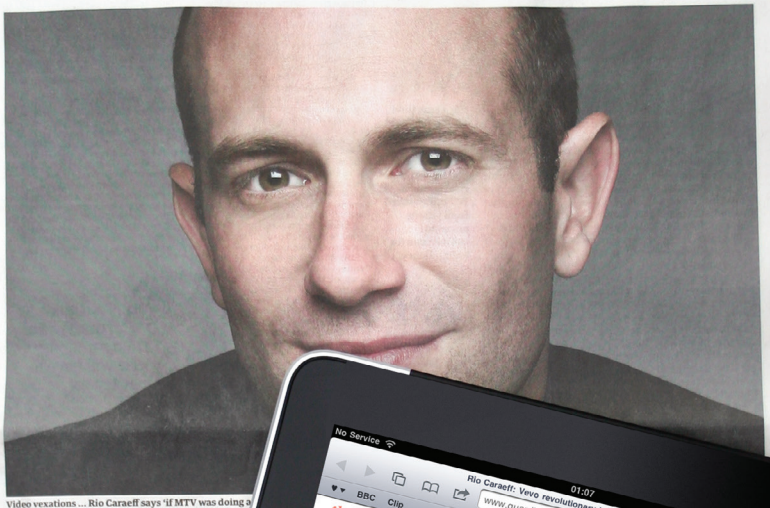
If Rio Caraeff succeeds, perhaps only diehard fans will need to own music. His online music video site, part-owned by the two largest record companies, also hopes to have the same impact as MTV and to be an answer to YouTube. Chuck those goals in with that of making the industry less dependent on the purchase of recordings, and for Caraeff there is clearly plenty to do.

Caraeff is the youthful chief executive of Vevo – launched in late 2009 with the backing of three of the four major groups, Sony Music, Universal Music and EMI – who is taking the venture international with a rollout starting in the UK and continental Europe. "Sex, music and sports are the only entertainment categories on the planet that people love that can build audiences at the scale of billions of people," he says. "I'm in the business of connecting billions of people to music," is his modestly stated aim.

With global CD sales plummeting by $1.5bn last year, Caraeff's mission is clear. "We wouldn't have created Vevo if we didn't need it," he says. "The industry felt it was necessary. If MTV was doing a great job paying royalties, if YouTube [was], there would have been no need. We have invested tens of millions to be responsible for our own destiny. We can't sit back and say 'I hope Apple or whoever figures this out'."

Vevo's relationship with Google, the owner of the world's largest video-sharing platform YouTube, is clearly critical. Michael Grade called the company a "parasite" and Sir Martin Sorrell described it as a "frenemy". Despite the combative relationship the music industry has historically had with players in the digital space, Caraeff prefers to characterise Vevo's dealings with YouTube as "symbiotic" – although "declaration of independence" would be more appropriate.

"We said 'let's figure out how to work with them'," he explains. "There are no duplicate copies [of music videos] on YouTube, there were thousands before, the official versions are only available from us. They don't threaten us. YouTube is a place where people can upload any video in the world, we're not trying to compete." Caraeff points out that 50% of Vevo's traffic comes from YouTube search, and 30% comes from recommendations of videos that users might like to watch that appear on the side of the YouTube web pages when a user is viewing clips.



Video vexations ... Rio Caraeff says 'if MTV was doing a

'We are about access: it is the only scalable model for the music industry; the question is, how do you do that and make money?'

Free access

Vevo's business model is all about providing music videos that fans can access free, funded by advertising – or to put it another way – give consumers an alternative to owning songs. "I believe the future is access, not ownership, not iTunes as it is today," he says. "We're not trying to sell people music; our customers are not the small amount of people that want to buy music. We are about providing access: it is the only scalable model for the music industry; the question is, how do you do that and make money?"

Which raises the question of how well Vevo is actually doing. Caraeff doesn't want to give away too much commercially but says it is already making "hundreds of millions of dollars" in revenue, although there are hosting costs to pay. More than half of gross revenue goes to content owners – the label, artist or licenser – with the remainder being kept by Vevo or paid to partners such as YouTube. He says that Vevo is "significantly ahead" of its original business plan – about 40% ahead to be precise – and is on track to achieve profitability "in the very early part of next year".

Yet there are problems. Caraeff's business is dependent on advertising, and he is frustrated by the low rates that companies pay to run campaigns around music content. His contention is that advertisers treat music content as inferior and that Vevo's role is to "own" the prime content and then be able to position it as a premium product. Think the free-to-access equivalent of BSkyB owning Premier League football.

"The audience that loves music is vast and promising: it should be treated as

Curriculum vitae

Age 36

Education Did not go to u… cause "I started my first c… I was 18"

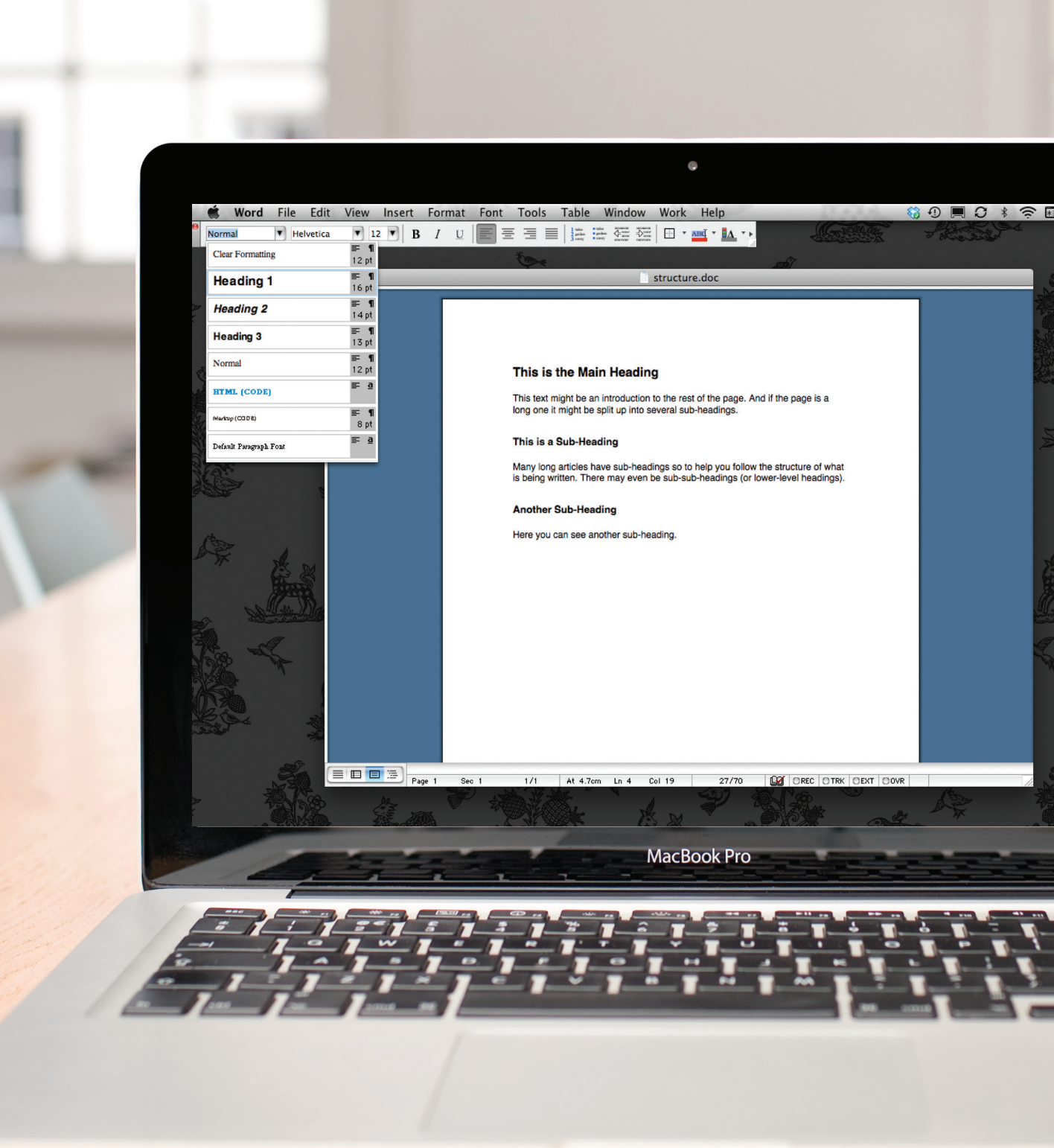
Career
2004 vice-president … Pictures **2005** gener… Universal Music Mol… vice-president, Uni… division, responsib… and new technolo… tive, Vevo

STRUCTURING WORD DOCUMENTS

The use of headings and subheadings in any document often reflects a hierarchy of information. For example, a document might start with a large heading, followed by an introduction or the most important information.

This might be expanded upon under subheadings lower down on the page. When using a word processor to create a document, we separate out the text to give it structure. Each topic might have a new paragraph, and each section can have a heading to describe what it covers.

On the right, you can see a simple document in Microsoft Word. The different styles for the document, such as different levels of heading, are shown in the drop down box. If you regularly use Word, you might have also used the formatting toolbar or palette to do this.


Word File Edit View Insert Format Font Tools Table Window Work Help
Normal
Helvetica
12
Clear Formatting
Heading 1
Heading 2
Heading 3
Normal
HTML (CODE)
Default Paragraph Font
structure.doc
This is the Main Heading
This text might be an introduction to the rest of the page. And if the page is a long one it might be split up into several sub-headings.
This is a Sub-Heading
Many long articles have sub-headings so to help you follow the structure of what is being written. There may even be sub-sub-headings (or lower-level headings).
Another Sub-Heading
Here you can see another sub-heading.
Page 1 Sec 1 1/1 At 4.7cm Ln 4 Col 19 27/70
REC TRK EXT OVR
MacBook Pro

On the previous page you saw how structure was added to a Word document to make it easier to understand. We use structure in the same way when writing web pages.

HTML DESCRIBES THE STRUCTURE OF PAGES

In the browser window you can see a web page that features exactly the same content as the Word document you met on the page 18. To describe the structure of a web page, we add code to the words we want to appear on the page.

You can see the HTML code for this page below. Don't worry about what the code means yet. We start to look at it in more detail on the next page. Note that the HTML code is in blue, and the text you see on screen is in black.

```
<html>
  <body>
    <h1>This is the Main Heading</h1>
    <p>This text might be an introduction to the rest of
       the page. And if the page is a long one it might
       be split up into several sub-headings.</p>
    <h2>This is a Sub-Heading</h2>
    <p>Many long articles have sub-headings to help you
       follow the structure of what is being written.
       There may even be sub-sub-headings (or lower-level
       headings).</p>
    <h2>Another Sub-Heading</h2>
    <p>Here you can see another sub-heading.</p>
  </body>
</html>
```

The HTML code (in blue) is made up of characters that live inside angled brackets — these are called HTML **elements**. Elements are usually made up of two **tags**: an opening tag and a closing tag. (The closing tag has an extra forward slash in it.) Each HTML element tells the browser something about the information that sits between its opening and closing tags.

HTML USES ELEMENTS TO DESCRIBE THE STRUCTURE OF PAGES

Let's look closer at the code from the last page. There are several different elements. Each element has an opening tag and a closing tag.

CODE

Tags act like containers. They tell you something about the information that lies between their opening and closing tags.

DESCRIPTION

The opening `<html>` tag indicates that anything between it and a closing `</html>` tag is HTML code.

The `<body>` tag indicates that anything between it and the closing `</body>` tag should be shown inside the main browser window.

Words between `<h1>` and `</h1>` are a main heading.

A paragraph of text appears between these `<p>` and `</p>` tags.

Words between `<h2>` and `</h2>` form a sub-heading.

Here is another paragraph between opening `<p>` and closing `</p>` tags.

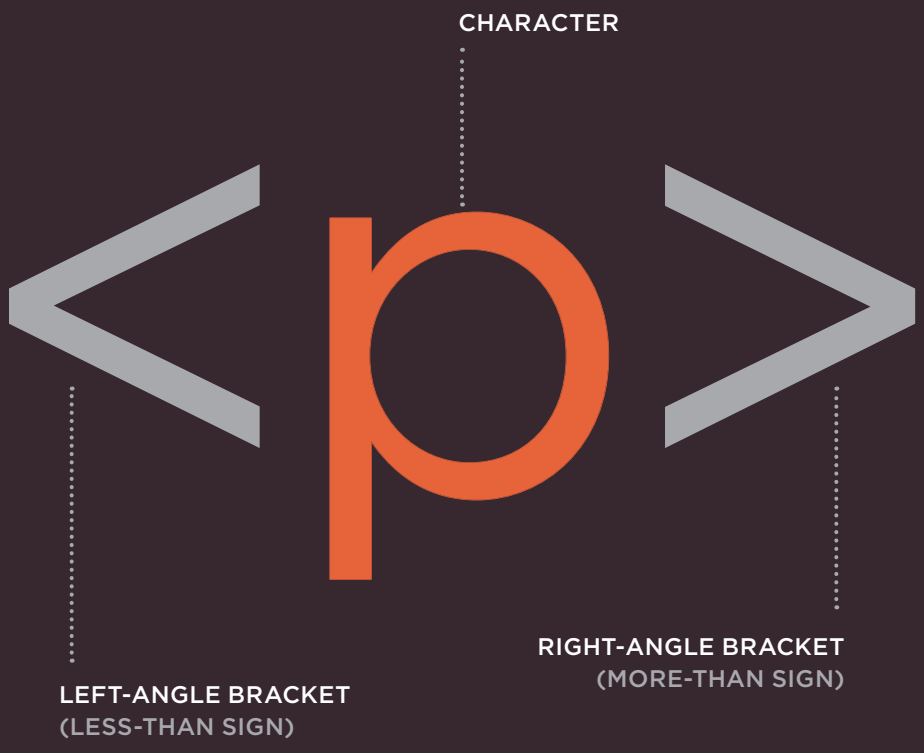
Another sub-heading inside `<h2>` and `</h2>` tags.

Another paragraph inside `<p>` and `</p>` tags.

The closing `</body>` tag indicates the end of what should appear in the main browser window.

The closing `</html>` tag indicates that it is the end of the HTML code.

A CLOSER LOOK AT TAGS



The characters in the brackets indicate the tag's purpose.

For example, in the tags above the p stands for paragraph.

The closing tag has a forward slash after the the < symbol.