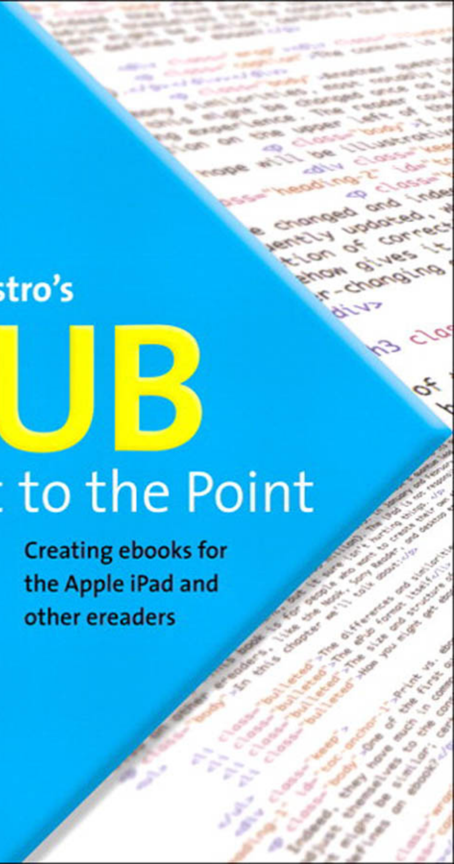
Elizabeth Castro's

EPUB Straight to the Point

Creating ebooks for the Apple iPad and other ereaders



EPUB Straight to the Point: Creating ebooks for the Apple iPad and other ereaders
by Elizabeth Castro
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Thanks

As I was writing this book, I had the good fortune to join up with the knowledgeable and helpful folks who follow the #eprdctn hashtag on Twitter. This book would have been a much less valuable resource without the tips, thoughts, questions, suggestions and real world experience of Lindsey Martin (@crych), Joshua Tallent (@jtallent), David Blatner (@dblatner), Anne Marie Concepcion (@amarie), Tina Henderson (@tinahender), Colleen Cunningham (@BookDesignGirl), Rick Gordon (@rcgordon), Anthony Levings (@anthonylevings), David Mundie (@mundie1010), Titusz Pan (@Titusz), Koan-Sin Tan (@koansin), Adam Jury (@adamjury), Walt Shiel (@slipdown), Mike Cane (@mikecane), Jose Afonso Furtado (@jafurtado), and Guy L. Gonzalez (@glecharles) and the folks at @DigiBookWorld. There are many others. You can come join us too by following #eprdctn.

Thanks also to Cliff Colby, my editor at Peachpit Press, who believed in this project, and who kept his calm when I moved things around at the last minute, and even let me move the last minutes themselves as Apple released new versions of iBooks.

And to David Van Ness, my production editor at Peachpit Press, whose help discovering all the widows and bad breaks help make this a much more pleasant read.

Finally, thanks to my friends (if I still have any) who endured months of "I'm almost done, can we get together *next* month" and to my family who quietly urged me on. I couldn't have kept going without you. Writing a book is a crazy, intensive, very personal pursuit, which must both be done in solitude and with support. I have been very fortunate to have had both.

One of the things I love about EPUB is the same thing I loved about HTML in its infancy: anyone can do it. You, too, can use this technology to write and publish your own book. I hope you'll tell me about it. You can find me at http://www.twitter.com/@lizcastro.

Introduction

i

With the announcement on January 27, 2010, of Apple's iPad, and its support for the EPUB format, the world of electronic books, or *ebooks* for short, took a quantum leap into the future. According to IDPF (International Digital Publishing Forum), ebook sales in the U.S. in January and February of 2010 were $60.8 million, $5 million more than the entire fourth quarter of 2009 ($55 million). The iPad is not responsible for *all* of the excitement, but it sure isn't hurting things.

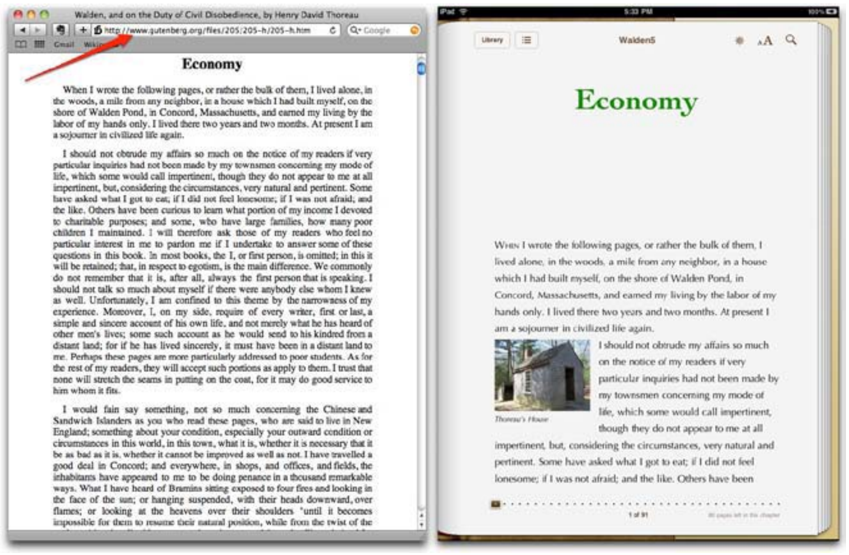
This book is for people who want to create their own EPUBs, and publish them for the iPad in particular, but also on other ereaders, like the Barnes and Noble Nook, Sony Reader, and desktop ereaders like Ibis and Stanza.

In this chapter we'll talk about:

- The differences and similarities among print books, ebooks and websites
- The EPUB format itself
- The size and structure of a page on the iPad
- Who this book was written for and where you can find updates, example code, and extras

Print vs. ebook vs. website

One of the first questions I thought about as I was writing this book was how an EPUB ebook was different from a website. Indeed, they have much in common. Both are written in (distinct but very similar flavors of) HTML and formatted with CSS, both adjust themselves to the constraints of the system in which they are viewed, and both are accessed electronically. Even their content might be similar; certainly there are websites (like Project Gutenberg) that make entire books available to readers. So what makes an ebook different?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Economy

When I wrote the following pages, or rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a house which I had built myself, on the shore of Walden Pond, in Concord, Massachusetts, and earned my living by the labor of my hands only. I lived there two years and two months. At present I am a sojourner in civilized life again.

I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concerning my mode of life, which some would call impertinent, though they do not appear to me at all impertinent, but, considering the circumstances, very natural and pertinent. Some have asked what I got to eat; if I did not feel lonesome; if I was not afraid; and the like. Others have been curious to learn what portion of my income I devoted to charitable purposes; and some, who have large families, how many poor children I maintained. I will therefore ask those of my readers who feel no particular interest in me to pardon me if I undertake to answer some of these questions in this book. In most books, the I, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference. We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Unfortunately, I am confined to this theme by the narrowness of my experience. Moreover, I, on my side, require of every writer, first or last, a simple and sincere account of his own life, and not merely what he has heard of other men's lives; some such account as he would send to his kindred from a distant land; for if he has lived sincerely, it must have been in a distant land to me. Perhaps these pages are more particularly addressed to poor students. As for the rest of my readers, they will accept such portions as apply to them. I trust that none will stretch the seams in putting on the coat, for it may do good service to him whom it fits.

I would fain say something, not so much concerning the Chinese and Sandwich Islanders as you who read these pages, who are said to live in New England; something about your condition, especially your outward condition or circumstances in this world, in this town, what it is, whether it is necessary that it be as bad as it is, whether it cannot be improved as well as not. I have travelled a good deal in Concord; and everywhere, in shops, and offices, and fields, the inhabitants have appeared to me to be doing penance in a thousand remarkable ways. What I have heard of Bramins sitting exposed to four fires and looking in the face of the sun; or hanging suspended, with their heads downward, over flames; or looking at the heavens over their shoulders "until it becomes impossible for them to resume their natural position, while from the twist of the

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The content is practically the same on the Gutenberg website (left) and the iBooks app on the iPad (right).

Another question that's helpful to explore is what distinguishes an ebook from a print book. Again, there are many similarities, most notably in the content, but also in the idea of the page as a unit of information. Although with an ebook, this might be changed once, as a reader adjusts the font size, for example, it would stay the same throughout the rest of the reading experience. The reader could go back and know that the section in the upper left of the previous page would still be in that section on the upper left of the previous page.

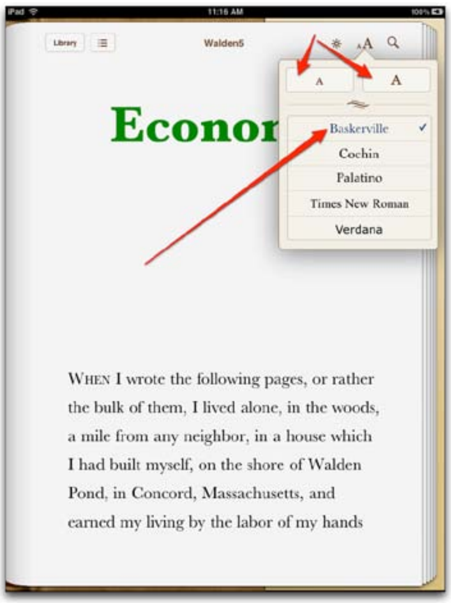
I have outlined a number of areas where ebooks, print books, and websites, overlap and diverge, which I hope will be illustrative.

Static vs. Dynamic

One principal feature of ebooks and websites that is distinct from printed books is how quickly they can be changed and indeed are *expected* to be updated. It is understood that a website will be frequently updated, while ebooks might be updated occasionally, and regular books only before a new printing. It's not only a question of correcting errors, or updating timely information, however. There is something about the static nature of a book that somehow gives it more solidness, more integrity. We judge a book, even an ebook, as a discrete collection of information, not as an ever-changing one.

Appearance

A printed book cannot change its appearance, although publishers sometimes offer various renditions of the same book: hard cover, paperback, large print, and so on. A single version of an ebook, however, can generally be modified by the reader to their own taste, by changing the font, text size, and sometimes even the color of the text and/or background. Although it's also possible for users to change the appearance of a website (perhaps by choosing a custom style sheet or increasing the font size), it's not nearly as widespread—or expected—as with an ebook.



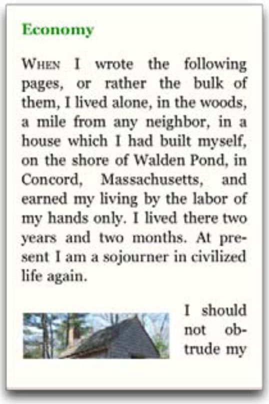
WHEN I wrote the following pages, or rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a house which I had built myself, on the shore of Walden Pond, in Concord, Massachusetts, and earned my living by the labor of my hands

A reader might choose a different size or font in which to read the ebook. This is, of course, unheard of for a printed book.

How it's read

Printed books are generally read left-to-right or right-to-left. Websites tend to scroll up and down. Currently, many ebooks mimic the behavior of print books, surely in an attempt to make the transition to ebooks less uncomfortable for readers, who are accustomed to having a discrete amount of information on a page that doesn't change size or shape.

One of the cool things about an ebook is that it *reflows* to fit the size of the device in which it is being read. If you're reading it on an iPhone, the width of the page is a fair bit smaller than if you're reading it on an iPad, or on some other reader. The beauty of EPUB is that it flows the text to fit whatever screen it's on.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I should not obtrude my

Here is the same file from the last few illustrations shown in Stanza on the iPhone.

This is different from a zoom function, that might let you magnify one area of a page, but doesn't flow the entire page to fit. With zoom, you can get the text big enough to read, but then it's a nuisance to navigate from one page to the next.

The order of things

With a printed book, you're used to opening up the cover, leafing through a title page, copyright, table of contents, dedication, and even a preface before diving into the main content of a book. With an ebook, the book designer can control where you start reading. The first time you open an ebook, you might be thrust onto the first page of the content (if the designer thinks you'll be annoyed by front matter). In this respect, ebooks are more similar to websites.

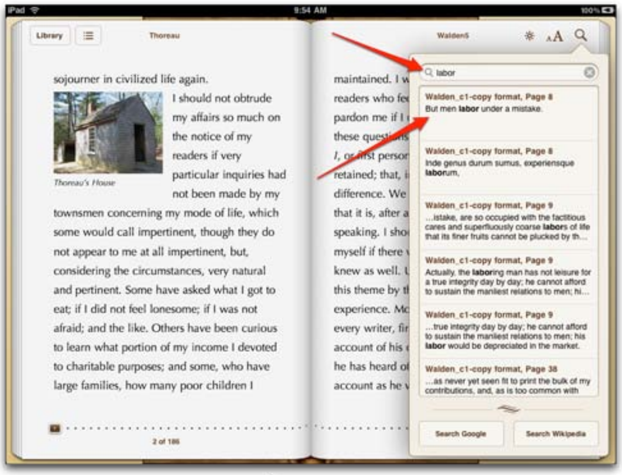
In a print book, you can often, but not always, consult a table of contents and then jump to a desired section. In ebooks (and websites), not only can you access the table of contents from any page, you often will find links in the text that transport you to other sections of the book, or even to related external websites.

Formats, durability, and batteries

Print books don't become obsolete, don't need batteries, and can be read in many different environments—including on a beach where sunlight and sand might make ereader devices less advantageous. They do require external illumination, however, if you're using them in the dark, something which some readers, including the iPad and iPhone, do not. Books are more sturdy than ereaders, and don't break when dropped or if they slip off the bed. And they certainly require a lot less outlay at the outset.

Searchability

A printed book's main search tools are a table of contents and an index, though the latter are only prevalent in nonfiction books. Most ereaders, however, offer some sort of electronic search of the full-text content of the ebook, in addition to a navigable table of contents, and less commonly, an index whose entries are linked to the referenced sections. Web browsers, too, commonly offer full-text search. Search, however, should not be seen as a reasonable substitute for a targeted index.



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maintained. I w
readers who fe
pardon me if I
these questions
I, or first person
retained; that, i
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that it is, after a
speaking. I sho
myself if there
knew as well. U
this theme by th
experience. Mo
every writer, fir
account of his
he has heard of
account as he v

Walden_c1-copy format, Page 8
But men **labor** under a mistake.

Walden_c1-copy format, Page 8
Inde genus durum sumus, experiensque **labor**um,

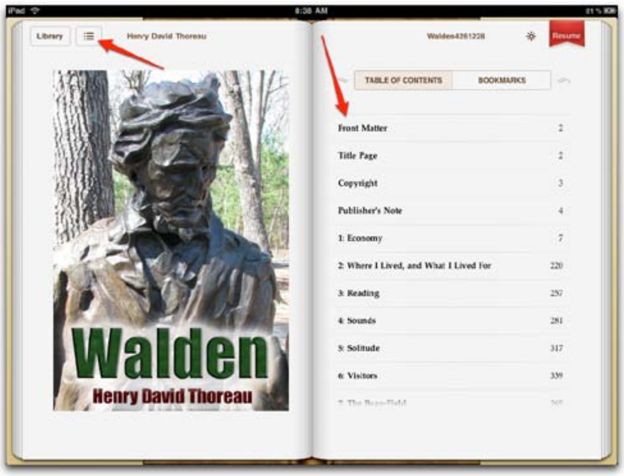
Walden_c1-copy format, Page 9
...istake, are so occupied with the factitious cares and superfluously coarse **labor**s of life that its finer fruits cannot be plucked by th...

Walden_c1-copy format, Page 9
Actually, the **labor**ing man has not leisure for a true integrity day by day; he cannot afford to sustain the manliest relations to men; hi...

Walden_c1-copy format, Page 9
...true integrity day by day; he cannot afford to sustain the manliest relations to men; his **labor** would be depreciated in the market.

Walden_c1-copy format, Page 38
...as never yet seen fit to print the bulk of my contributions, and, as is too common with

In iBooks on the iPad (and most other ereaders), you can search for words within your book and then click the found text to jump directly to that passage.



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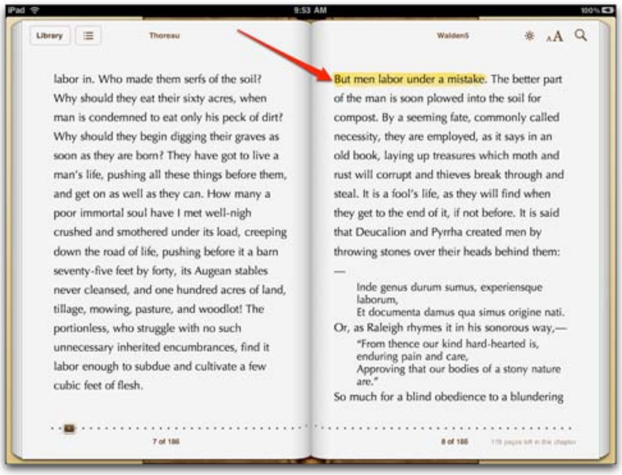
The table of contents in an ebook is navigable: if you click one of the entries, you automatically jump to the selected section.

Highlighting and sharing passages

Of course, one of the most popular things to do with any kind of book is share it. A printed book doesn't have any special tools for allowing highlighting and sharing, apart from being open to pencils and highlighters and to being handed to friends. The ability to highlight and share an ebook depends on the ereader's capacities.

Some ereaders, like the iPad, allow you to highlight a passage for future reference, but have no sharing abilities at all. Indeed, you can't even copy a passage!



labor in. Who made them serfs of the soil? Why should they eat their sixty acres, when man is condemned to eat only his peck of dirt? Why should they begin digging their graves as soon as they are born? They have got to live a man's life, pushing all these things before them, and get on as well as they can. How many a poor immortal soul have I met well-nigh crushed and smothered under its load, creeping down the road of life, pushing before it a barn seventy-five feet by forty, its Augean stables never cleansed, and one hundred acres of land, tillage, mowing, pasture, and woodlot! The portionless, who struggle with no such unnecessary inherited encumbrances, find it labor enough to subdue and cultivate a few cubic feet of flesh.

But men labor under a mistake. The better part of the man is soon plowed into the soil for compost. By a seeming fate, commonly called necessity, they are employed, as it says in an old book, laying up treasures which moth and rust will corrupt and thieves break through and steal. It is a fool's life, as they will find when they get to the end of it, if not before. It is said that Deucalion and Pyrrha created men by throwing stones over their heads behind them:
—

Inde genus durum sumus, experiensque laborum,
Et documenta damus qua simus origine nati.

Or, as Raleigh rhymes it in his sonorous way,—

"From thence our kind hard-hearted is, enduring pain and care,
Approving that our bodies of a stony nature are."

So much for a blind obedience to a blundering

You can highlight text in the iPad (by selecting the text, and choosing bookmark) for later reference.

Others, like Kindle, let you create both notes and highlights, that you can view either in the book itself or online. Currently, the most highlighted passages in Kindle books are published on Amazon's site, but personal notes and highlights are not yet shared among readers. The Barnes and Noble Nook lets you share entire books with friends, though you're currently only allowed to share a particular book one time and with one person.

There are many tools for copying and sharing passages from websites. Indeed, there are tools for including chunks of a website in a different site altogether.

Copy protection

The EPUB format allows for DRM (Digital Rights Management) encryption so that the file can be read in only one specific kind of ereader and only by authorized users. It's a shame, because while EPUB itself is very widely supported, the DRM severely limits that versatility, while it makes it much more difficult for the licensed reader to access the content, which they have come by legally. For example, if you buy a book through iBooks on the iPad, the added DRM will impede you from reading the book on the Sony Reader, B&N Nook, or even Stanza, even though they all support EPUB. Printed books have no such DRM. Websites don't have DRM as such though some are located behind firewalls or subscription services.

Buying new books

While print books have long had advertisements and excerpts from sequels or other related books that publishers hoped people would buy, ebooks can contain direct links to bookstores that facilitate the immediate purchase of another ebook. On the iPad, readers can access Apple's iBookstore from within the iBooks app. Ebooks can also contain links to external websites and other sources of marketing and information in order to generate additional sales. Websites can have links to other websites as well as to ebooks in all the various ebook stores.

What is EPUB?

The most widely accepted format for ebooks today is EPUB, which is developed and maintained by the IDPF. You can find the official specifications for EPUB documents on its website: www.idpf.org under, well, *Specifications*.

An EPUB document is a specially constructed zip file with the *.epub* extension. An ereader can reflow the content of an EPUB document into any size display screen, from a phone to a desktop monitor. EPUB also allows for the generation of a navigational table of contents.

The content of a book formatted with EPUB is contained in XHTML and CSS files, which may reference images and embedded fonts, and be encrypted with DRM. XHTML is a special flavor of HTML, which is the language that all web pages are written in. The EPUB file also contains a series of XML files that help format the book so that it can be properly read by an ereader.

There are a number of tools that can generate EPUB files for you, either from plain text, from XHTML, from Microsoft Word, or even from Adobe InDesign. Still, in these early days when EPUB tools are less than perfect, it's a good idea to know what's going on under the hood so that you can go in and make necessary adjustments. For example, Word doesn't export drop caps, but you can edit the XHTML files by hand to allow them. InDesign doesn't export text wrap with its EPUB documents, but you can set up the files so that a quick edit to the XHTML achieves that aim. In the rest of this book, I'll show you both how to use available tools, and how to handcode extra features.

Navigating a sea of ereaders

There are a number of reader applications, or *ereaders*, that can read EPUB documents. iBooks on the iPad, Barnes & Noble Nook, and the Sony Reader support EPUB, as do Adobe Digital Editions, Lucidor, and Stanza (on various platforms), Ibis Reader (which is web-based), Mobipocket on Blackberry and Aldiko on Android, and many more.

The most well-known ereader that *does not* support EPUB is Amazon's Kindle. I suspect that may change as more and more ereaders join forces behind EPUB, but only time will tell.

Unfortunately, not every ereader reads and interprets EPUBs in exactly the same way. Because the earliest popular ereaders (like Stanza) did not support any formatting at all, later ereaders felt forced to compensate by adding default formatting of their own and ignoring the formatting of the EPUB documents they displayed.

As EPUB designers have gotten more savvy, however, they have chafed under the sometimes overbearing nature of these ereaders, who instead of following the standards laid out in the EPUB specs, insist on overriding EPUB designs to make up for old issues. Ebook designers are discouraged from even *choosing the font* for their book—something a print book designer would never stand for—in the supposed interest of a good user experience.

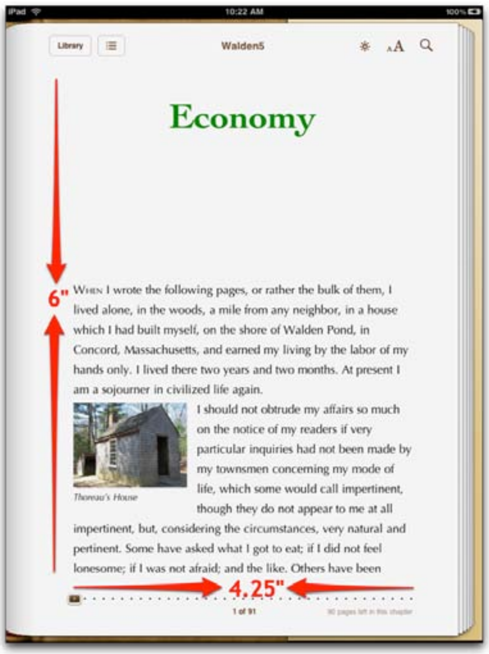
Personally, I fail to see how properly designing a book takes away from a good user experience. Quite the contrary. Instead, in this book, I encourage you to follow the standards laid out in the EPUB specifications and to speak up for standards support in all ereaders.

Anatomy of an iBooks page

While this book explains how to create standard EPUB documents, it is also particularly focused on how to take best advantage of these standard features to make beautiful ebooks on the Apple iPad.

The iPad displays ebooks in two sizes: a single large page if you hold the iPad vertically and a spread of two smaller pages if you rotate the display to a horizontal orientation.

The size of the single vertical page is about 5.5 x 7.5″ (about 15 x 19 cm), although a fair bit of that space is taken up with navigation tools and margins, leaving a content frame of about 4.25 x 6″ (11 x 15 cm).



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Thoreau's House

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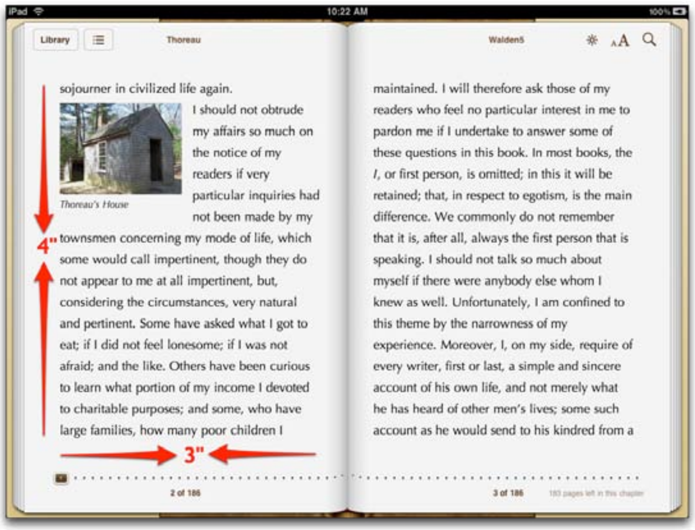
When rotated vertically, iBooks displays a single page of the ebook.

If you rotate the iPad to a horizontal orientation, you get two vertically oriented pages, each of which measures about 3.75 x 5.5″ (10 x 14 cm), which, when you take away the navigation buttons and margins, leaves you with a content area about 3 x 4″ (7.5 x 10 cm).



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When rotated vertically, iBooks on the iPad shows two smaller vertically oriented pages.

The resolution of the iPad is 132 dpi, which is considerably higher than the average 98 dpi of a desktop monitor. This means that text and images will be physically smaller on the iPad, although they may seem about the same size since everything will be in proportion. If you call for text at 16 pixels, the iPad will display it at 16/132 pixels, which is about .12" or about 9 points. Curiously, if you specify a size of 12 points, it will also be displayed at 16 pixels or 9 actual points. So much for absolute measurements.

The iPad displays text in Palatino, by default, but the reader can also choose Baskerville, Cochin, Times New Roman, Verdana, and Georgia. All but Verdana are serif fonts. The reader can also choose from 10 different font sizes, with size 4 being the default.

The iBooks application does not yet support embedded fonts, even though the iPad itself does (for example, in Safari), as long as these are in SVG format. One might presume that iBooks will support embedded SVG formats as well at some point.

The iPad does have a number of system fonts that can be used in ebooks viewed both on Safari and in the iBooks application. I will show you what fonts are available and how to call them in "Fonts in your ebook" in Chapter 4.

Who is this book for?

This book is for anyone who wants to publish an ebook in EPUB format, particularly on the iPad, but for any ereader that supports EPUB, including the Sony Reader, Barnes & Noble Nook, Ibis Reader, and Stanza. It explains how to use Word and InDesign—software you may already own and which might already contain your formatted books—to generate the files necessary that make up the EPUB, as well as how to manually create or improve the files in order to take advantage of the capabilities of the most advanced ereaders, without leaving underperforming ereaders too far behind. I believe strongly in following standards so that a book that works today will continue to work tomorrow in the next new ereader that comes along.

You don't need to have either Word or InDesign to create an EPUB document; it is very possible to write the files by hand. Nevertheless, these tools facilitate the creation of an EPUB, and take advantage of the formatted documents you may already have created with those programs.

It is essential to have a good text editor so that you can adjust and adapt the files once they are created. I provide details and recommendations in the corresponding sections.

Finally, it's very helpful if you have some knowledge of XHTML and CSS, since that's what EPUB is based on and I don't discuss XHTML or CSS basics much at all. If you are not familiar with HTML, XHTML, or CSS, I recommend taking a look at my bestselling *HTML, XHTML, and CSS: Visual QuickStart Guide, 6th edition*, also published by Peachpit Press. Many of the same techniques for designing websites are also valid for designing ebooks.

I will be posting updates, errata, extras, and more information on my website: http://www.elizabethcastro.com/epub as well as on my blog, Pigs, Gourds, and Wikis (http://www.pigsgourdsandwikis.com).

Advanced EPUB Formatting

4

InDesign, not to mention Word, doesn't even begin to scratch the surface of the design capabilities available in EPUB. I haven't found an EPUB editor that does. Regardless of what you start with—InDesign, Word or handcoded XHTML—you can always add additional effects with a text editor in order to take advantage of all that EPUB supports. In this chapter, you'll learn about:

- Ensuring ereaders use your CSS
- How InDesign writes XHTML and CSS and what to do about it
- How to choose and specify fonts for your ebook
- How to keep elements together, create drop caps and small caps, control spacing and indents, deal with short lines, and insert borders and backgrounds
- What to do about hyphenation
- How to insert images and have text wrap around them
- How to add links, tables, and even video to your ebook
- And how to convert InDesign inheritance into CSS inheritance

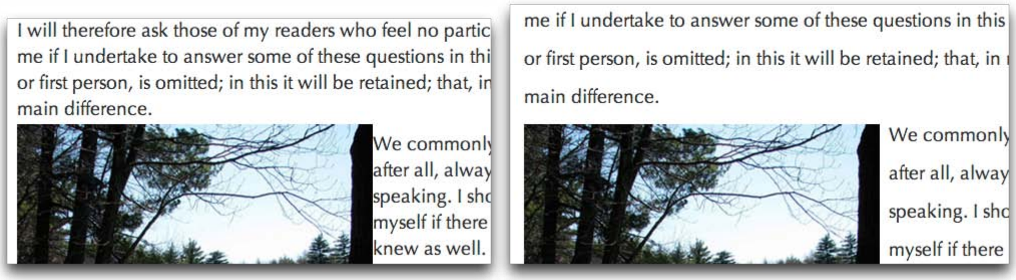
All of the techniques in this chapter are based on XHTML and CSS that work in iBooks on the iPad and other ereaders, but that aren't generated by Word or InDesign. For a more detailed explanation of how to write XHTML, see my bestselling *HTML, XHTML, and CSS: Visual QuickStart Guide, 6th Edition*, also published by Peachpit Press.

Ensuring ereaders use your CSS

Because older ereaders weren't as good at supporting CSS, newer ereaders got into the extremely dubious habit of automatically overriding designers' CSS in order to compensate. In particular, properties like margin, padding, line-height, width, font-size, and font-family are routinely ignored for one's own good! Gee, thanks! Luckily, some ereaders will listen to you if you override their override by using !important.

1 To insist that your CSS rule take precedence, add !important to the end of it (between the property/value pair and the semicolon).

```
margin: 0 .5em 0 0 !important;
```



I will therefore ask those of my readers who feel no partic
me if I undertake to answer some of these questions in thi
or first person, is omitted; in this it will be retained; that, ir
main difference.

We commonl
after all, alway
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me if I undertake to answer some of these questions in this
or first person, is omitted; in this it will be retained; that, in
main difference.

We commonly
after all, alway
speaking. I sho
myself if there

The declarations in the CSS for these two examples are the same: a line-height of 2 em, and a margin of .5em to the right of the photo. But on the right, I added !important *to each declaration so the ereader would not ignore my CSS.*

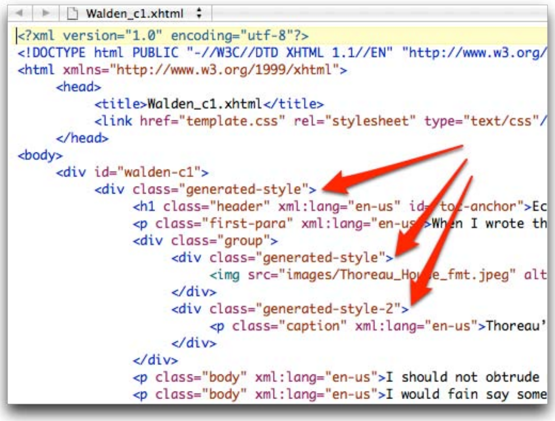
Because this overuse of !important can cause some rules to override other rules in the same style sheet, it will be wonderful when these ereaders stop requiring its use. In the meantime, be aware that an !important declaration takes precedent over one that is not so important, even among your own rules in your own CSS file.

Cleaning up InDesign EPUB files

I think InDesign is a really powerful tool for creating EPUB files, but it's nowhere near perfect—at least not yet. In this section, I'll show you how to clean up the EPUB files that InDesign produces. Even if you haven't used InDesign, you may find some useful tips. To edit InDesign's files, you'll have to unzip the EPUB as described in "Unzipping an EPUB" in the previous chapter.

How InDesign writes XHTML

When InDesign exports a document, it generates style information in a very specific way. First, it creates one large div element whose id is the title of your InDesign file. It then creates another div, with a class of generated-style for each frame, in order, from left-top to bottom-right. Images are exported into divs of their own with a class of generated-style-2 while grouped items, unsurprisingly, get divs with a class of group. Lines and shapes are ignored outright. (If a document begins with an image, the img elements are enclosed in generated-style classed divs while the text frames are enclosed in generated-style-2 divs.) All generated-style classes may be deleted.


Walden_c1.xhtml

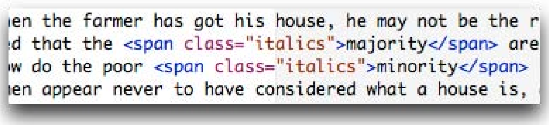
```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/
<html xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <title>Walden_c1.xhtml</title>
        <link href="template.css" rel="stylesheet" type="text/css"/
    </head>
<body>
    <div id="walden-c1">
        <div class="generated-style">
            <h1 class="header" xml:lang="en-us" id="toc-anchor">Ec
            <p class="first-para" xml:lang="en-us">When I wrote th
            <div class="group">
                <div class="generated-style">
                    <img src="images/Thoreau_House_fmt.jpeg" alt
                </div>
                <div class="generated-style-2">
                    <p class="caption" xml:lang="en-us">Thoreau'
                </div>
            </div>
            <p class="body" xml:lang="en-us">I should not obtrude
            <p class="body" xml:lang="en-us">I would fain say some
```

InDesign exports paragraphs from the TOC as headers and everything else as p *elements. Everything is enclosed in larger* div *elements with generic classes.*

In CS5, the way the actual text is exported depends directly on whether or not you've defined a TOC style (see "Creating a Table of Contents Style" in Chapter 2). If you have, and if you've selected that TOC style upon export (see "Export EPUB from InDesign" in Chapter 2), then the InDesign paragraph styles selected to generate the TOC will be exported as headers (h1, h2, and so on), while every other paragraph—even Bulleted and Numbered lists—will be exported as a p element. (If you have not defined a TOC style or don't choose it when exporting, or if you're using CS4, *everything* is exported as a p element.) Regardless, all header and p elements get a class equal to the name of the paragraph style in InDesign.

InDesign also inserts an xml:lang attribute into every single element to specify the element's language. You may search and delete these.

Character styles are exported as span elements with the InDesign character style name as a class attribute.



```
en the farmer has got his house, he may not be the r
d that the <span class="italics">majority</span> are
w do the poor <span class="italics">minority</span>
en appear never to have considered what a house is,
```

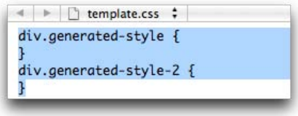
Text that was styled with a character style becomes enclosed in a span element with that character style's name as its class.

Local formatting (which is ignored in CS4), is exported as a span with a class of no-style-override. Sometimes, InDesign creates generated-style classes in span elements as well. These can be safely deleted.

How InDesign writes CSS

The CSS files that InDesign generates will depend directly on the choices you make when you do the export. You can always control the process completely by choosing Style Names Only or Use Existing CSS File upon export. The first option will output a CSS file with each InDesign style mapped to a class with the same name, attached to a p or header element. You can then define the style rules manually. The second option lets you choose a predefined CSS style sheet that will be used in the EPUB. If you often use the same style sheet, this may be the most effective option as long as you make sure the CSS classes match the style names in the InDesign document. In this example, nevertheless, we'll assume that you're using InDesign to generate the style information in the CSS style sheet.

1 Just as InDesign creates extra generated-style classes in the XHTML, it creates empty style rules for these styles as well. I think it's best to get rid of them.

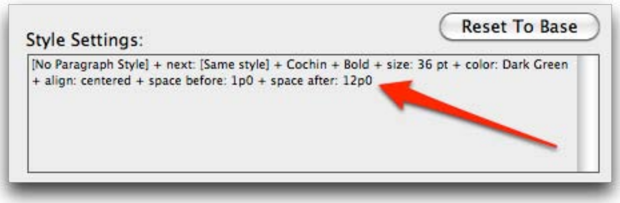


```
div.generated-style {
}
div.generated-style-2 {
}
```

InDesign creates these selectors with no style definitions. They're pretty useless.

Next, for each paragraph style, InDesign creates a set of style rules that defines each of the following properties, whether you've defined a value for that property in InDesign or not: font-family, font-weight, font-style, font-size, line-height, text-decoration, font-variant, text-indent, text-align, color, and margin. Indeed, it *only* creates values for those 11 properties, and all other aspects of the style—even features that CSS and InDesign support in common—are ignored.

For example, imagine the header style in the *Walden* document, defined to have green, 36 point, bold text set in Cochin, centered, with 1 pica of space before and 12 picas after.



Style Settings:
[No Paragraph Style] + next: [Same style] + Cochin + Bold + size: 36 pt + color: Dark Green + align: centered + space before: 1p0 + space after: 12p0

Note that the text is supposed to be 36pt, the space before is 1 pica and the space after is 12p. No indent, underline, small-caps, or italics are defined.

When InDesign exports this style information to CSS, it gets much of it right, but unfortunately, it erroneously offers *default values* for properties that weren't explicitly defined. In this example, that's line-height, text-decoration, font-variant, font-style, and text-indent.

```
h1.header {
	font-family: "Cochin";
	font-weight: bold;
	font-style: normal;
	font-size: 3em;
	line-height: 1.20em;
	text-decoration: none;
	font-variant: normal;
	text-indent: 0em;
	text-align: center;
	color: #1c910a;
	margin: 0.33 0 4em 0;
}
```

2 Unfortunately, because of CSS inheritance, a default value is not neutral. Instead of not defining, say the text-decoration, this CSS specifically says "make sure there is *no* text decoration". I recommend eliminating these extraneous and sometimes harmful declarations. After the changes, the rule will look like this:

```
h1.header {
	font-family: "Cochin";
	font-weight: bold;
	font-size: 3em;
	line-height: 1.20em;
	text-align: center;
	color: #1c910a;
	margin: 0.33 0 4em 0;
}
```

Remember that an *em* is a curious measurement. When used to specify a font size, as the 3em in the previous code, it means 3 times the size of the parent element's font size. The parent element in this case is a div which gets its font size from the body, which in iBooks and in many websites, is 16 pixels by default. So the h1 element here would end up 48 pixels high (3 x 16 pixels).

When you use ems for line height, text indents, and margins, however, one em equals the *font size of the current element*. So, the specified 4 em for the margin-bottom, since the font size is 48 pixels, will be 192 pixels.

InDesign doesn't always use the same font names that the iBooks app supports. For example, if you choose the *Bradley Hand* font for a style in InDesign, the exported CSS uses "Bradley Hand ITC TT" but iBooks will only understand "Bradley Hand" or BradleyHandITCTT (with no spaces). You can find the full list of official names in "Fonts in your ebook" later in this chapter.

3 Make sure the value for the font-family property is the official name for that font, as given in the list in "Fonts in your ebook".

4 Repeat these steps for each set of rules in the CSS document.

Maintaining InDesign inheritance in the CSS

InDesign lets you base multiple styles on a single foundational style. Then when you change the foundation style, all of the styles that depend on that foundation are also updated. It's a very useful feature. For example, in this book that you are reading, I have formatted all of the code examples with variations on a single InDesign style called *code*. The base code style includes font information and basic indenting. The code-first style includes everything in code, and adds a rule above. The code-last includes everything in code, but adds a rule below. And so on. You get the idea.

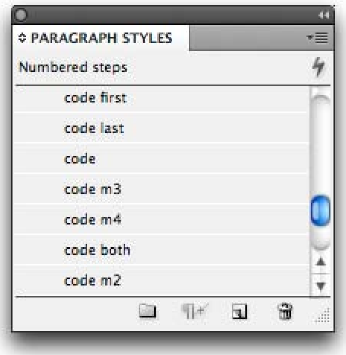
CSS has a similar functionality. You might assign a number of style rules to the `p` element, and then add additional style rules to only those `p` elements of class `code-last`, for example. In addition, CSS applies *inheritable* styles automatically to elements contained within other elements. For example, if there is an `em` element within a `p` element, the contents of the `em` element may inherit styles applied to the `p` element. Whether or not a style rule is inherited is determined by the property's characteristics (and sometimes on whether or not you choose to make it inheritable).

Unfortunately, and as you might expect, InDesign doesn't take advantage of CSS's inheritance features. As we've just seen, InDesign creates separate, independent sets of style rules for each and every style in your InDesign document. Not only that, but it sets the default values for several properties, even though these are not necessarily defined in InDesign. Further, it does not reflect the inheritance of one style on another in the exported declarations. This is a shame and can be remedied.

I have developed a technique for maintaining the inheritance in InDesign styles in the CSS styles that InDesign exports.

1 In InDesign, create the base style and title it with a single lowercase word. My base style is called *code*.

2 Still in InDesign, create the styles that are based on the main style and title them with the same lowercase word used for the base style, plus a space and a single word modifier. For example, *code first*, *code last*, *code both*, etc.



Each of these "child styles" is based on the base code style.

3 Style the text in your document with the InDesign styles and export to EPUB as usual. InDesign converts the space in the style names to a hyphen.

```
<p class="code-first">h1.header {</p>
   <p class="code-m2">font-family: "Cochin";</p>
   <p class="code-m2">font-weight: bold;</p>
...
```

4 In the generated CSS file, eliminate any default values from the base style that you do not want to declare explicitly.

```
p.code {
      font-family: "AmericanTypewriter";
      font-size:.8em;
      line-height: 1.2em;
      text-align:left;
      margin:0 5% 0 5% !important;
      background: #f8dddd;
      width: 90% !important;
   }
```

5 Still in the CSS, eliminate the base style name from the child style rules. (In this example, *code-first* becomes just *first*; *code-m2* becomes just *m2*.) Then, simplify the child rules so that they contain only those declarations that are above and beyond what is defined in the base style.

```
.first {
   border-top: 2px dashed red;
   padding-left: 1%;
   padding-top:.2em;
   padding-bottom: .2em;
   }
.m2 {
   text-indent: -5%;
   padding: .2em 0 .2em 11% !important;
   }
```

6 In the XHTML file, use search and replace to convert the hyphen that separates the base name from the child name into a space. Now, each of the two words are independent classes and *both* will be applied to the paragraph. In this way, both the base style and the child style will be applied to the affected paragraphs.

```
<p class="code first">h1.header {</p>
   <p class="code m2">font-family: "Cochin";</p>
   <p class="code m2">font-weight: bold;</p>
...
```

Now when you change the rules for the base style in the CSS, all of the paragraphs that depend on that rule will be affected. At the same time, each paragraph will continue to be individually affected by the child rule that applies to it.

Fonts in your ebook

The EPUB specification allows you to designate particular fonts for your book so that ereaders can use your font of choice instead of the defaults. Unfortunately, not all ereaders support such a feature.

Many ereaders offer a very limited set of fonts for display. The Barnes & Noble Nook, for example, currently offers only Amasis, Helvetica Neue, and Light Classic. The iBooks app on the iPad has more than 30 fonts (with multiple styles of each) pre-installed, but only allows the reader to choose one of six: Palatino (the default), Baskerville, Cochin, Georgia, New Times Roman, and Verdana.

Choosing fonts

There are those that would say that ebook designers should always leave the choice of fonts up to the reader, who, if they so desire, should be able to change the font and text size of a book via the ereader's settings. While it is certainly true that ereaders can give human readers much more control over how their books should appear—and I will admit to loving making the text just a wee bit larger to appease my older eyes—I think it's important to offer an initial beautiful design even if the reader later overrides your choices.

I think well-designed books are a pleasure to read and their very design can be a major factor in attracting readers and drawing them into the content of the book. Conversely, a poorly designed book can be downright difficult to read, and can distract a reader from even well-written prose.

Specifying fonts by name

Let's look more carefully at the actual code required for specifying a font.

1 In the CSS, add `font-family: "fontname";` to your list of rules for a given selector. Multiple word names must be enclosed in parentheses. For example, to specify the American Typewriter font for all `samp` elements, you'd use this CSS:

```
samp {
   font-family: "American Typewriter";
}
```

You can find the correct name for each font in the list "Fonts available for ebooks on the iPad" further ahead in this section. Note that InDesign does not always use the name that iBooks supports; you may have to edit the InDesign CS5 generated code to match what is shown here.

Also keep in mind, however, that while these fonts are always available to any program on the iPad—including both Safari and iBooks—they are not all available on Mac, Windows, and Linux machines. It's a good idea to specify alternate fonts should the desired one not be available. (For more details, see "Specifying alternate fonts" later in this section.)

Finally, be sure to read the section on "iBooks and fonts" if you're having trouble making the fonts appear.

Specifying fonts by style

CSS also lets you specify a generic style of font, that depends on the system on which the content is being displayed. For example, you could specify that a paragraph be shown in a sans-serif font and on some systems that would mean Helvetica and on others it might mean Arial. By giving guidelines instead of specific font choices, you have a chance of getting part of what you want, instead of going for all or nothing.

The iPad has designated five particular fonts to be matched to CSS generic font names: Times for serif, Helvetica for sans-serif, Courier for monospace, Snell Roundhand for cursive, and Papyrus for fantasy.

1 In the CSS, add font-family: generic; to your list of rules for a given selector, where *generic* is one of serif, sans-serif, monospace, cursive, or fantasy. For example, to specify a sans-serif font for all samp elements, you'd use this code:

```
samp {
   font-family: sans-serif;
}
```

Generic font names are never enclosed in quotes.

Finally, be sure to read the section on "iBooks and fonts" if you're having trouble making the fonts appear.

Specifying alternate fonts

Because not every operating system has the same fonts installed, CSS offers the possibility of specifying multiple alternate choices of fonts. If the first is not available, it will try the second. If the second is not available, it will try the third, and so on.

1 In the CSS, in the font-family rule, add multiple font selections, each one separated by a comma, in order of preference. Enclose multiple-word name-sOEBPSin parentheses. Specify a generic font style as the last choice.

```
samp {
   font-family: "Optima", "Verdana", sans-serif;
}
```

Generic style names are never enclosed in double quotes. If a font name has only one word, quotation marks are optional. Separate each choice with a comma.

iBooks and fonts

Apple inexplicably crippled font support in iBooks 1.1. While iBooks is perfectly capable of displaying the more than 30 font faces that are pre-installed on the iPad, Apple has for some reason kept iBooks from recognizing those fonts when applied to certain elements, namely: p, div, body, html, and span. On the other hand, iBooks has no problem understanding fonts applied to non-body text elements like headers (h1, h2, and so on), list items (li), definition lists (dl, dd, and dt), highlighted text (em, strong, b, i, code, and so on).

One way around this is to enclose body text in an additional non body-text element. For example, you could use a rarely used element like samp:

```
<p><samp>Even a criminal is entitled to fair play; and certainly when a man
   who has done no harm has been unjustly treated, he is privileged to do
   his best to right himself.</samp></p>
```

Then apply the desired font to the samp selector in the CSS:

```
samp {font-family: "American Typewriter";}
```

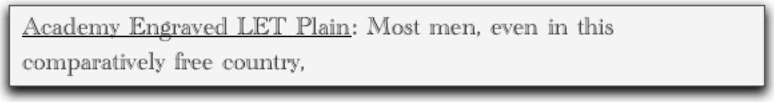
You'll find updates on this issue on my website.

Fonts available for ebooks on the iPad

The iPad has 33 font families for English (and similar) alphabets, with some repeats, and a number of variations of each. These are: Academy Engraved LET, American Typewriter, AppleGothic, Arial, Arial Rounded MT Bold, Baskerville, Bodoni 72, Bodoni 72 Oldstyle, Bodoni 72 Smallcaps, Bradley Hand, Chalkduster, Cochin, Copperplate, Courier, Courier New, DBLCDTempBlack, Didot, Futura, Georgia, Gill Sans, Helvetica, Helvetica Neue, Hoefler Text, Marker Felt, Optima, Palatino, Papyrus, Party LET, Snell Roundhand, Times New Roman, Trebuchet MS, Verdana, and Zapfino. (For information on non-English fonts, see "Using non-English fonts" further ahead in this chapter.)

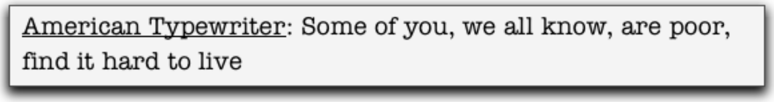
I hope this isn't overkill, but I'm going to go through each iPad font one-by-one both to show you what each font looks like and to give you the required name for using it. For other ereaders, you'll have to either embed the font or offer alternates (or both!).

For *Academy Engraved LET*, you can either use that name, in quotes, or use AcademyEngravedLETPlain with no spaces, and the quotes are optional. There are no additional styles.



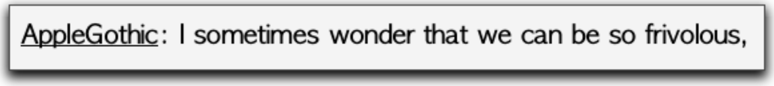
Academy Engraved LET Plain: Most men, even in this comparatively free country,

For *American Typewriter*, you can either use that name, in quotes, or use AmericanTypewriter with no spaces, and optional quotes. For bold, either use AmericanTypewriter-Bold, or add font-weight: bold to a rule that already contains the font-family declaration.

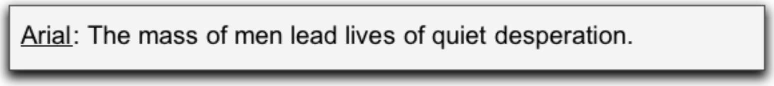


American Typewriter: Some of you, we all know, are poor, find it hard to live

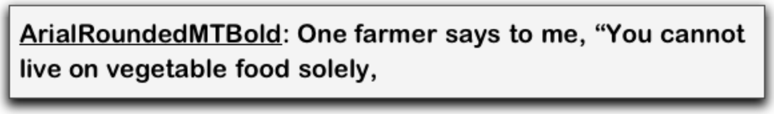
For *AppleGothic*, use that name, with optional quotes. There are no additional styles. Note that there is never a space.


AppleGothic: I sometimes wonder that we can be so frivolous,

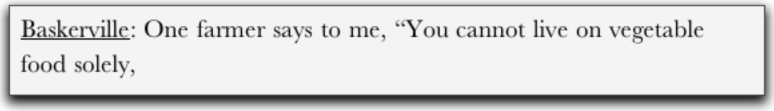
For *Arial*, use the single word font name, and optional quotes. For bold, italic, and bold-italic, respectively, use Arial-BoldMT, Arial-ItalicMT, or Arial-BoldItalicMT respectively, or add font-weight and/or font-style definitions to the rule containing the font-family declaration.


Arial: The mass of men lead lives of quiet desperation.

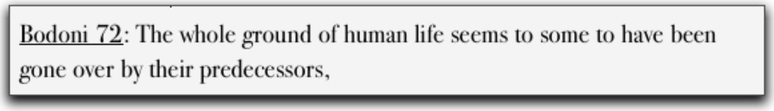
For *Arial Rounded MT Bold*, use ArialRoundedMTBold, with no spaces. No other font styles may be applied.


ArialRoundedMTBold: One farmer says to me, "You cannot live on vegetable food solely,

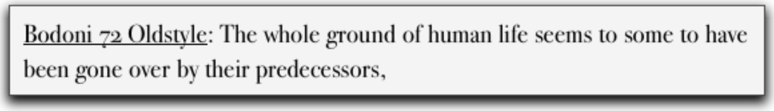
For *Baskerville*, use the single word name, quotes optional. For bold, italic, and bold-italic, use Baskerville-Bold, Baskerville-Italic, or Baskerville-BoldItalic, respectively, quotes optional. Or add font-style and/or font-weight definitions to the same rule that contains the font-family declaration.


Baskerville: One farmer says to me, "You cannot live on vegetable food solely,

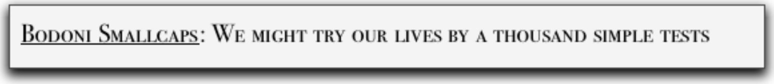
For *Bodoni 72*, use that name in quotes, or BodoniSvtyTwoITCTT-Book with optional quotes. For bold or italics, use BodoniSvtyTwoITCTT-Bold or BodoniSvtyTwoITCTT-BookIta respectively, or add font-weight or font-style definitions to the same rule that contains the font-family definition. There is no bold-italic.


Bodoni 72: The whole ground of human life seems to some to have been gone over by their predecessors,

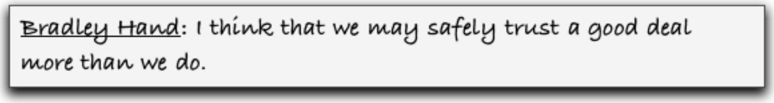
For *Bodoni 72 Oldstyle*, use that name in quotes, or BodoniSvtyTwoOSITCTT-Book with optional quotes. For bold or italic, use BodoniSvtyTwoOSITCTT-Bold or BodoniSvtyTwoOSITCTT-BookIt, respectively, or add font-weight or font-style to the rule containing font-family declaration.


Bodoni 72 Oldstyle: The whole ground of human life seems to some to have been gone over by their predecessors,

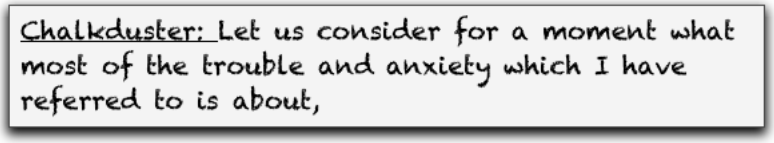
For *Bodoni 72 Smallcaps*, use that name in quotes, or BodoniSvtyTwoSCITCTT-Book with optional quotes. If you apply font-variant: small-caps, you'll get the computer generated version, which is not nearly as nice as this special version. No additional styles are available.


Bodoni Smallcaps: We might try our lives by a thousand simple tests

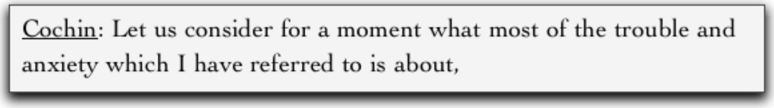
For *Bradley Hand*, use that name in quotes, or BradleyHandITCTT-Bold with optional quotes. Despite the name, there is neither an additional bold nor an additional normal style available.


Bradley Hand: I think that we may safely trust a good deal more than we do.

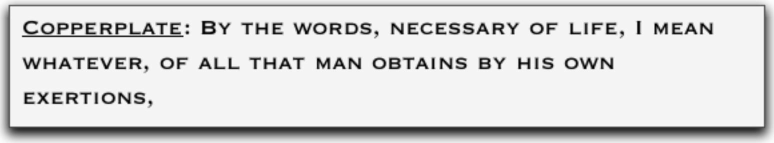
For *Chalkduster*, use that name with optional quotes. No additional styles are available.


Chalkduster: Let us consider for a moment what most of the trouble and anxiety which I have referred to is about,

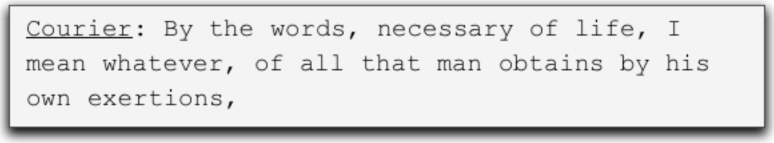
For *Cochin*, use that name with optional quotes. For bold, italic, or bold-italic, use Cochin-Bold, Cochin-Italic, or Cochin-BoldItalic, or add the desired font-weight, font-style or both to the same rule that contains the font-family definition.


Cochin: Let us consider for a moment what most of the trouble and anxiety which I have referred to is about,

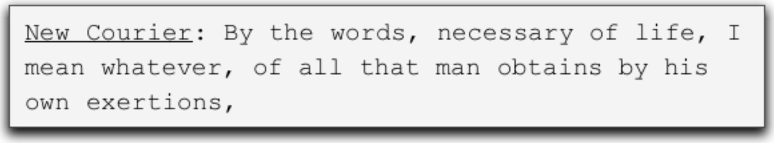
For *Copperplate*, use that name with optional quotes. For bold, use Copperplate-Bold or add font-weight: bold to the rule that contains the font-family declaration.


COPPERPLATE: BY THE WORDS, NECESSARY OF LIFE, I MEAN WHATEVER, OF ALL THAT MAN OBTAINS BY HIS OWN EXERTIONS,

For *Courier*, use that name with optional quotes. You can also use the generic name, monospace (without quotes). For bold, oblique, or bold-oblique, use Courier-Bold, Courier-Oblique, or Courier-BoldOblique respectively, or add font-weight: bold, font-style: oblique, or both to the declaration that contains the font-family declaration. Note that oblique is slightly darker than italic.

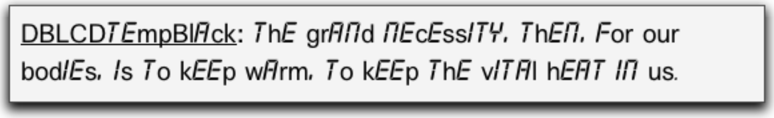

Courier: By the words, necessary of life, I mean whatever, of all that man obtains by his own exertions,

For *Courier New*, use that name in quotes, or CourierNewPSMT with optional quotes. For bold, italic, and bold-italic, use CourierNewPS-BoldMT, CourierNewPS-ItalicMT, or CourierNewPS-BoldItalicMT, respectively, or add the font-weight or font-style, or both definitions to the rule that contains the font-family declaration.

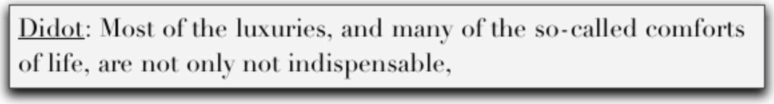

New Courier: By the words, necessary of life, I mean whatever, of all that man obtains by his own exertions,

Personally, I have a hard time telling Courier and New Courier apart.

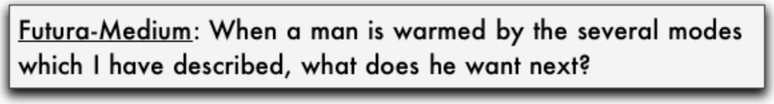
For *DB LCD Temp*, use DBLCDTempBlack with optional quotes.

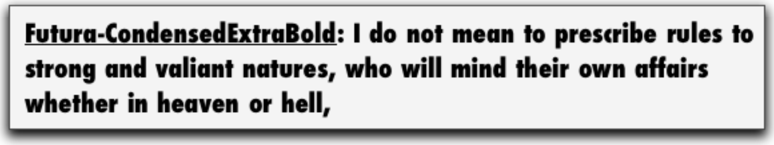

DBLCDTempBlack: The grand necessity, then, for our bodies, is to keep warm, to keep the vital heat in us.

For *Didot*, use that name with optional quotes. For bold or italic, use Didot-Bold or Didot-Italic, or add font-weight or font-style definitions to the rule that contains the font-family declaration. There doesn't appear to be a bold-italic variation.

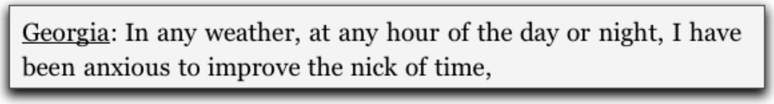

Didot: Most of the luxuries, and many of the so-called comforts of life, are not only not indispensable,

For *Futura*, use that name or Futura-Medium with optional quotation marks. For *Futura Medium Italic*, use Futura-MediumItalic with optional quotation marks, or add font-style: italic to the rule containing the Futura font-family declaration. For *Futura Condensed Extra Bold*, use Futura-CondensedExtraBold with optional quotes. No other styles appear to be available.

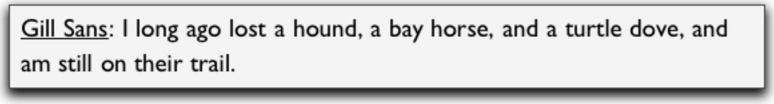

Futura-Medium: When a man is warmed by the several modes which I have described, what does he want next?


Futura-CondensedExtraBold: I do not mean to prescribe rules to strong and valiant natures, who will mind their own affairs whether in heaven or hell,

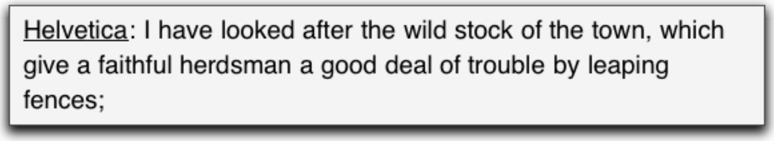
For *Georgia*, use that name with optional quotes. For bold, italic, or bold-italic, use Georgia-Bold, Georgia-Italic, or Georgia-BoldItalic or add font-weight, font-style, or both to the rule that contains the font-family declaration.


Georgia: In any weather, at any hour of the day or night, I have been anxious to improve the nick of time,

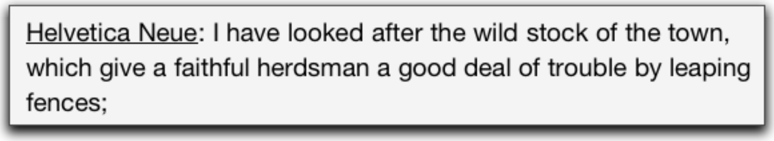
For *Gill Sans*, use that name with quotes, or GillSans with optional quotes. For bold, italic, or bold-italic, use GillSans-Bold, GillSans-Italic, or GillSans-BoldItalic or add the font-weight or font-style or both to the rule that contains the font-family declaration.


Gill Sans: I long ago lost a hound, a bay horse, and a turtle dove, and am still on their trail.

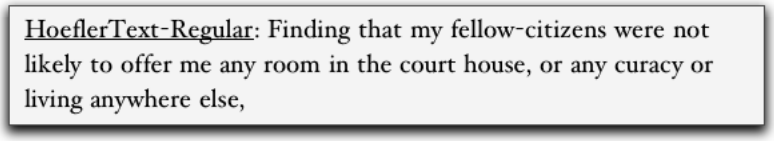
For *Helvetica*, use that name with optional quotes or use the generic name, sans-serif (without quotes). For bold, italic, or bold-italic, use Helvetica-Bold, Helvetica-Oblique, or Helvetica-BoldOblique, or add the font-weight, font-style or both to the rule that contains the font-family declaration.


Helvetica: I have looked after the wild stock of the town, which give a faithful herdsman a good deal of trouble by leaping fences;

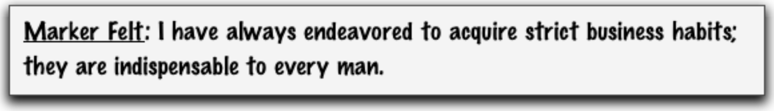
For *Helvetica Neue*, use that name with quotes or HelveticaNeue with optional quotes. For bold, italic, or bold-italic, use HelveticaNeue-Bold, HelveticaNeue-Italic, or HelveticaNeue-BoldItalic or add the font-weight, font-style or both to the rule containing the font-family definition.


Helvetica Neue: I have looked after the wild stock of the town, which give a faithful herdsman a good deal of trouble by leaping fences;

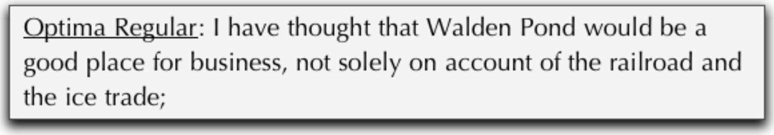
For *Hoefler Text*, use that name with quotes or HoeflerText-Regular with optional quotes. For bold, italic, and bold-italic, use HoeflerText-Black, HoeflerText-Italic, and HoeflerText-BlackItalic, respectively, or add font-weight: bold (not black) and/or font-style: italic to the rule that contains the font-family declaration.


HoeflerText-Regular: Finding that my fellow-citizens were not likely to offer me any room in the court house, or any curacy or living anywhere else,

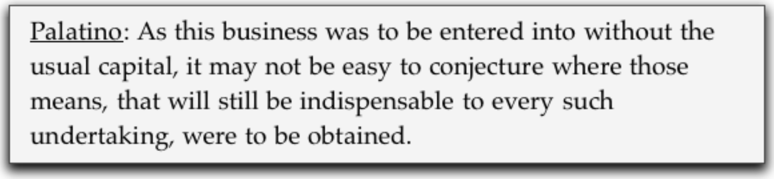
For *Marker Felt*, use that name in quotes, or MarkerFelt-Thin with optional quotes. For bold, use MarkerFelt-Wide with optional quotes or add font-weight: bold to the rule that contains the font-family declaration.


Marker Felt: I have always endeavored to acquire strict business habits; they are indispensable to every man.

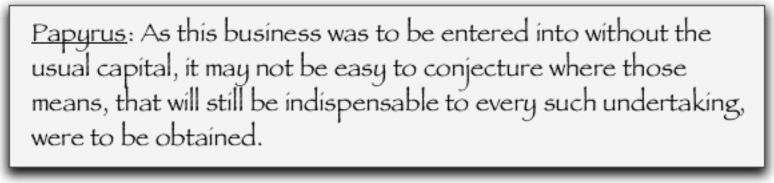
For *Optima*, use that name or Optima-Regular with optional quotes. For bold, italic, or bold-italic, use Optima-Bold, Optima-Italic, or Optima-BoldItalic or add font-weight, font-style, or both to the rule containing the font-family declaration.


Optima Regular: I have thought that Walden Pond would be a good place for business, not solely on account of the railroad and the ice trade;

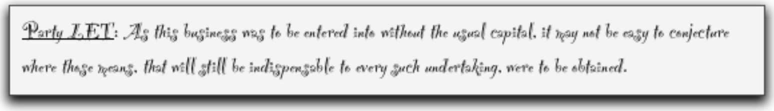
For *Palatino*, one option is to create a style definition that doesn't declare or inherit any font family. To declare it explicitly, use Palatino or Palatino-Roman with optional quotes. For bold, italic, or bold-italic, use Palatino-Bold, Palatino-Italic, or Palatino-BoldItalic or add font-weight, font-style, or both to the rule containing the font-family declaration.


Palatino: As this business was to be entered into without the usual capital, it may not be easy to conjecture where those means, that will still be indispensable to every such undertaking, were to be obtained.

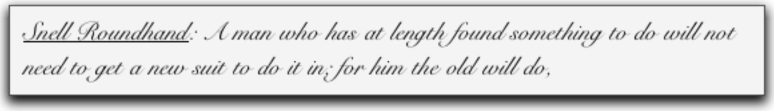
For *Papyrus*, use that name with optional quotes. You can also use the generic name, fantasy (without quotes). No other styles are available.


Papyrus: As this business was to be entered into without the usual capital, it may not be easy to conjecture where those means, that will still be indispensable to every such undertaking, were to be obtained.

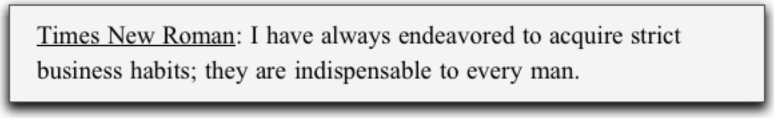
For *Party LET*, use that name in quotes, or PartyLetPlain with optional quotes. No other style variations are available.


Party LET: As this business was to be entered into without the usual capital, it may not be easy to conjecture where those means, that will still be indispensable to every such undertaking, were to be obtained.

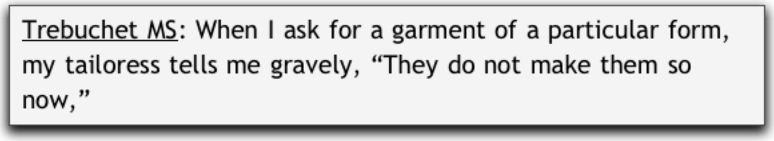
For *Snell Roundhand*, use that name in quotes, SnellRoundhand with optional quotes, or the generic name cursive without quotes. For bold, use SnellRoundhand-Bold or add font-weight: bold to the rule that contains the font-family declaration. No other styles are available.


Snell Roundhand: A man who has at length found something to do will not need to get a new suit to do it in; for him the old will do.

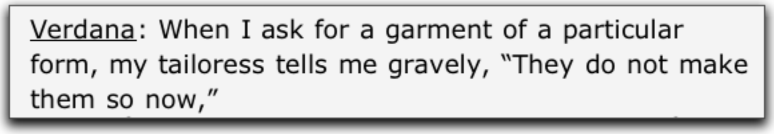
For *Times New Roman*, use that name in quotes, TimesNewRomanPSMT with optional quotes, or the generic name serif without quotes. For bold, italic, or bold-italic, use TimesNewRomanPS-BoldMT, TimesNewRomanPS-ItalicMT, or TimesNewRomanPS-BoldItalicMT, or add font-weight, font-style or both to the rule that contains the font-family declaration.


Times New Roman: I have always endeavored to acquire strict business habits; they are indispensable to every man.

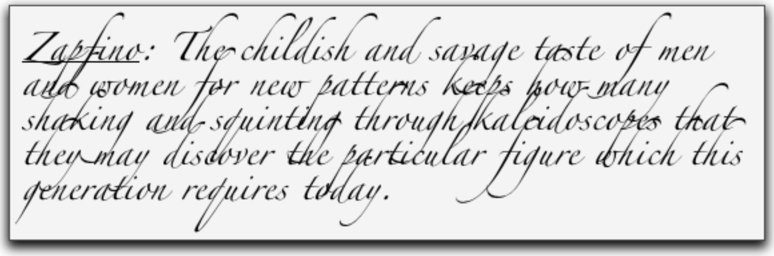
For *Trebuchet MS*, use that name in quotes, or TrebuchetMS with optional quotes. For bold, italic, or bold-italic, use TrebuchetMS-Bold, TrebuchetMS-Italic, or TrebuchetMS-BoldItalic or add font-weight, font-style, or both to the rule that contains the font-family declaration.


Trebuchet MS: When I ask for a garment of a particular form, my tailoress tells me gravely, "They do not make them so now,"

For *Verdana*, use that name with optional quotes. For bold, italic, or bold-italic, use Verdana-Bold, Verdana-Italic, or Verdana-BoldItalic, or add font-weight and/or font-style definitions to the rule that contains the font-family declaration.


Verdana: When I ask for a garment of a particular form, my tailoress tells me gravely, "They do not make them so now,"

For *Zapfino*, use that name with optional quotes. No other style variations are available.



Zapfino: The childish and savage taste of men and women for new patterns keeps how many shaking and squinting through kaleidoscopes that they may discover the particular figure which this generation requires today.

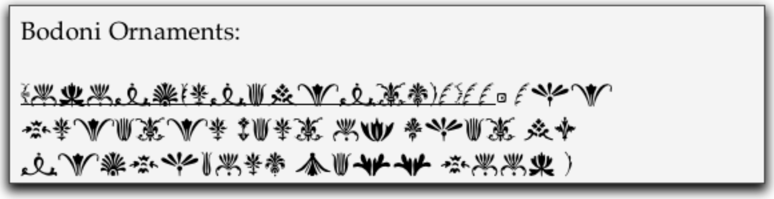
Tips

At press time, there was a bug in the iBooks app that caused the font family to be forgotten if you apply a bold, italic, or bold-italic style to the same text in a separate rule. The workaround is to declare both the font family and the style in the same rule.

Ornaments, dingbats, and symbols

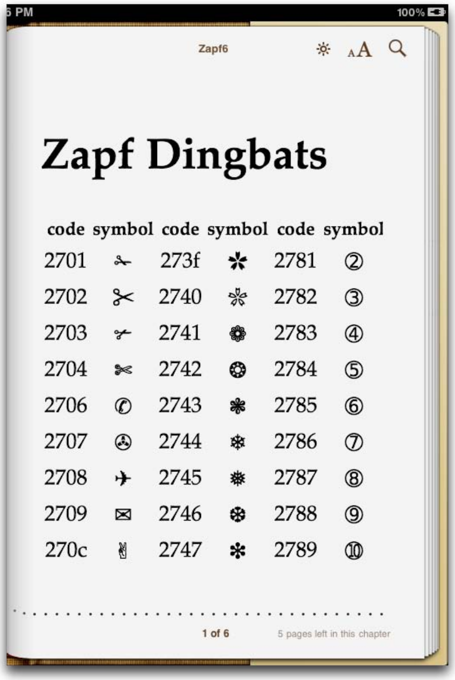
There are two fonts available on the iPad for ornaments and dingbats, Bodoni Ornaments and Zapf Dingbats, respectively.

The first is applied just like any other font. That is, for Bodoni Ornaments, use that name in quotes or BodoniOrnamentsITCTT with optional quotes. No additional styles are available.



Bodoni Ornaments:

Zapf Dingbats works differently. Each dingbat has its own special Unicode encoding, which you can consult at http://en.wikipedia.org/wiki/Dingbat. For example, to insert an airplane symbol in your ebook, you would type &#x, followed by the symbol's Unicode encoding (in this case 2708), followed by a semi-colon: &#x2708;

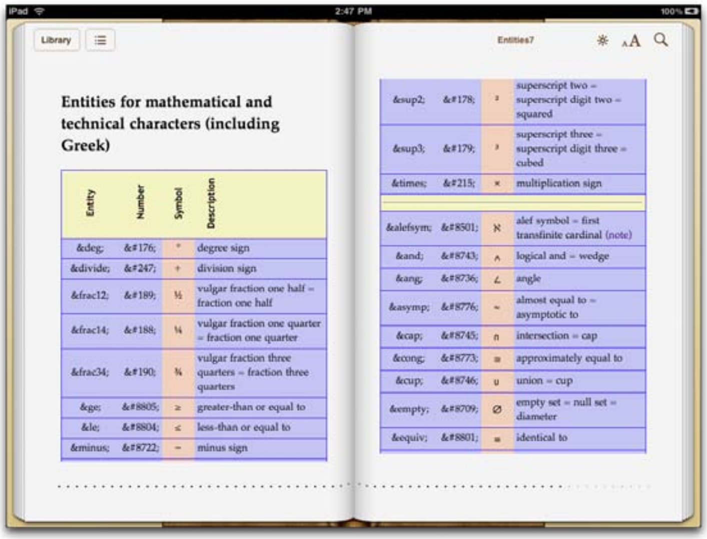


Zapf Dingbats

code	symbol	code	symbol	code	symbol
2701	✁	273f	✿	2781	➁
2702	✂	2740	❀	2782	➂
2703	✃	2741	❁	2783	➃
2704	✄	2742	❂	2784	➄
2706	✆	2743	❃	2785	➅
2707	✇	2744	❄	2786	➆
2708	✈	2745	❅	2787	➇
2709	✉	2746	❆	2788	➈
270c	✌	2747	❇	2789	➉

To get a dingbat, use the proper Unicode code. You don't need to choose the font itself.

Indeed, you are not limited to the symbols in the Zapf Dingbats. The iPad can display most of the character entities supported by HTML. That includes all of the characters in most Western-European languages, like à, ç, and ñ, as well as mathematical symbols, punctuation, and shapes and arrows. You can find a full table of these entities at http://www.elizabethcastro.com/html/extras/entities.html.



Entities for mathematical and technical characters (including Greek)

Entity	Number	Symbol	Description
&deg;	&#176;	°	degree sign
&divide;	&#247;	÷	division sign
&frac12;	&#189;	½	vulgar fraction one half = fraction one half
&frac14;	&#188;	¼	vulgar fraction one quarter = fraction one quarter
&frac34;	&#190;	¾	vulgar fraction three quarters = fraction three quarters
&ge;	&#8805;	≥	greater-than or equal to
&le;	&#8804;	≤	less-than or equal to
&minus;	&#8722;	−	minus sign
&sup2;	&#178;	²	superscript two = superscript digit two = squared
&sup3;	&#179;	³	superscript three = superscript digit three = cubed
&times;	&#215;	×	multiplication sign
&alefsym;	&#8501;	ℵ	alef symbol = first transfinite cardinal (note)
&and;	&#8743;	∧	logical and = wedge
&ang;	&#8736;	∠	angle
&asymp;	&#8776;	≈	almost equal to = asymptotic to
&cap;	&#8745;	∩	intersection = cap
&cong;	&#8773;	≅	approximately equal to
&cup;	&#8746;	∪	union = cup
&empty;	&#8709;	∅	empty set = null set = diameter
&equiv;	&#8801;	≡	identical to

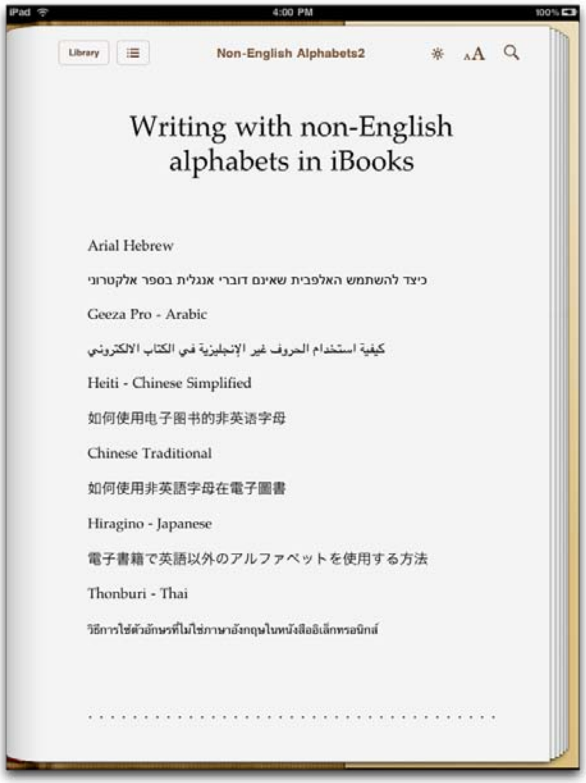
Character entities allow you to enter characters you might not have on your keyboard. They work just fine in EPUB.

Using non-English fonts

The iPad also has several non-English fonts that you can use in ebooks to be displayed in iBooks. These are Arial Hebrew, Geeza Pro for Arabic, Heiti J, Heiti K, Heiti SC and Heiti TC for Chinese Simplified and Traditional, Hiragino Kaku Gothic ProN and Hiragino Mincho ProN for Japanese, and Thonburi for Thai.

There's nothing special you need to do in order to use these fonts, indeed, explicitly specifying them as you might a decorative font won't magically transliterate your text.

Instead, enter the text as you normally would, making sure to save the XHTML document in UTF-8 format. Then when you create your EPUB document, the characters will appear properly.



Writing with non-English alphabets in iBooks

Arial Hebrew

כיצד להשתמש האלפבית שאינם דוברי אנגלית בספר אלקטרוני

Geeza Pro - Arabic

كيفية استخدام الحروف غير الإنجليزية في الكتاب الالكتروني

Heiti - Chinese Simplified

如何使用电子图书的非英语字母

Chinese Traditional

如何使用非英語字母在電子圖書

Hiragino - Japanese

電子書籍で英語以外のアルファベットを使用する方法

Thonburi - Thai

วิธีการใช้ตัวอักษรที่ไม่ใช่ภาษาอังกฤษในหนังสืออิเล็กทรอนิกส์

Hopefully I haven't written anything terrible here: I just used Google Translate to translate the phrase "How to use non-English alphabets in an electronic book".

Embedding fonts

It's important to remember that a program can only display characters in a given font if the system on which the ebook is running has access to the font. This is as true for websites as it is for ebooks. So, it doesn't matter what fonts you, the designer, have access to on your own computer; if your reader doesn't have the font, it won't display properly on their system.

The fonts that we've talked about so far in this chapter are all included with the iPad, but that doesn't mean that they're available on Windows, Mac, or other mobile devices.

CSS has long had a system for embedding font information in websites (and now ebooks), but it wasn't until 2009 that there was some agreement on a format, and the practice began to become more commonplace. In fact, as ever, there are several formats for fonts to be embedded in a website, but the most common are OpenType (OTF), Web Open Font Face (WOFF), and Scalable Vector Graphics (SVG). The EPUB specification recommends using OpenType fonts. You can use a program like FontForge to convert TrueType fonts to OpenType format (with the .otf extension).

Unfortunately, support for font embedding is still not the norm. iPad only supports font embedding of SVG fonts, and iBooks currently doesn't even support that. At press time there was still no way to embed a font in an ebook for iBooks. I'll post any updates to my website.

Getting fonts

There are more and more web font services to be found online. Kernest.com offers a number of free and licensed fonts. Other popular paid and free services include Typekit and Typotheque. Note that font licenses don't always permit use in EPUB files. Check first to be sure. Once you have the font files, create a folder for them, named *fonts*, within the OEBPS folder. InDesign can embed fonts for you upon export to EPUB.

Importing embedded fonts into a style sheet

Once the files are in your EPUB directory, call them into your CSS style sheet by placing code like the following at the top of the style sheet.

1 At the top of your style sheet, before you've used any fonts in any CSS rules, add an @font-face for each font you want to embed.

```
@font-face {
   font-family: 'Travelogue';
   src: url('fonts/travelogue.otf');
}
```

Note that in this example, I'm importing the font named "Travelogue" and the corresponding OpenType font file *travelogue.otf* is in the folder named *fonts* within the OEBPS folder.

Then call the embedded font just like any other, as described in "Specifying fonts by name", earlier in this chapter.

Controlling text alignment

Print fiction has historically been displayed with justified text, that is, all the lines of text are adjusted with extra spaces so that they end evenly on both sides. Unfortunately, to do this in a way that looks half decent, you need a robust hyphenation dictionary. Otherwise, particularly long words can cause unsightly rivers of white space that flow through your pages.

Some ereaders let the user control the alignment of an ebook's text. The iBooks app displays justified text by default. Users can go to Settings, click iBooks and choose OFF next to Full Justification to use the settings specified by the book designer. Unfortunately, that setting is a bit hidden. Even worse, iBooks has a bug that keeps it from following the text-align property in the CSS.

Luckily, there is a workaround. It turns out that iBooks 1.1 will pay attention to the CSS text-align property if and only if there is a second element, within the main p element, that contains the text.

1. Contain the body text within every single p element in another element. If you're not specifying the font, use span. If you do want to specify the font, use samp, as described in "iBooks and fonts". You can use the GREP expression, <p>(.*)</p> to find all of your p elements (add the class to that expression if necessary), and then replace it with <p><samp>\1</samp></p> or <p><span>\1</span></p>, depending on whether you're applying font family info or not.

   ```
   <p><span>Here is the text.</span></p>
   ```

2. Specify the alignment for the p elements in the CSS.

   ```
   p {text-align: left}
   ```

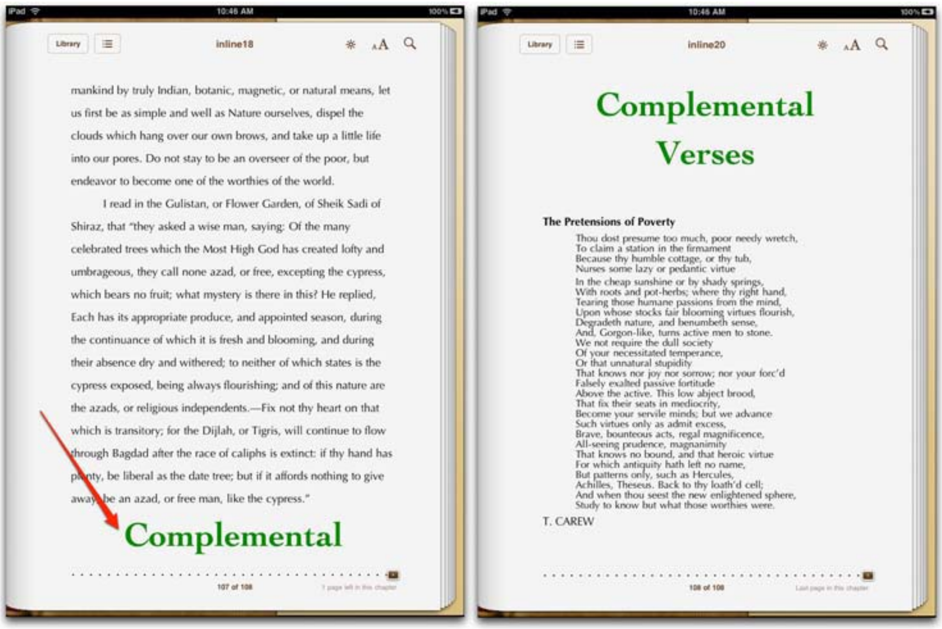
If you do use samp, be sure to set the font in the CSS as well. If you use span, no extra CSS is required for the span selector.

When Apple fixes this bug in iBooks, the workaround will no longer be necessary, but leaving it in shouldn't create problems in future, less-buggy ereaders.

Keeping elements together

The iBooks app doesn't currently support the standard CSS page element controls, like page-break-before, page-break-after, and page-break-inside. Neither does it support the standard CSS orphans and widows properties that can keep individual lines from appearing at the top and bottom of pages. Some other readers, including Barnes & Noble's Nook, do support the orphans and widows properties and even have default values set. How then can you best control the flow of text to keep headers from showing up alone at the bottom of pages, captions from being separated from their illustrations, and the last line of a paragraph from starting a new page?

Until iBooks supports the real page-break controls, you can exert a fair amount of force with one special value of the display property: inline-block. This value forces iBooks to view the affected content much as if it were one discrete item, like an image. So, if you apply display: inline-block to a div, all of the contents of that div are treated as a unit, and are kept together on a page—as much as possible—often starting a new page in the process. It is a roundabout way of creating a page break, but it's definitely better than nothing.



mankind by truly Indian, botanic, magnetic, or natural means, let us first be as simple and well as Nature ourselves, dispel the clouds which hang over our own brows, and take up a little life into our pores. Do not stay to be an overseer of the poor, but endeavor to become one of the worthies of the world.

I read in the Gulistan, or Flower Garden, of Sheik Sadi of Shiraz, that "they asked a wise man, saying: Of the many celebrated trees which the Most High God has created lofty and umbrageous, they call none azad, or free, excepting the cypress, which bears no fruit; what mystery is there in this? He replied, Each has its appropriate produce, and appointed season, during the continuance of which it is fresh and blooming, and during their absence dry and withered; to neither of which states is the cypress exposed, being always flourishing; and of this nature are the azads, or religious independents.—Fix not thy heart on that which is transitory; for the Dijlah, or Tigris, will continue to flow through Bagdad after the race of caliphs is extinct: if thy hand has plenty, be liberal as the date tree; but if it affords nothing to give away, be an azad, or free man, like the cypress."

Complemental

Complemental Verses

The Pretensions of Poverty

Thou dost presume too much, poor needy wretch,
To claim a station in the firmament
Because thy humble cottage, or thy tub,
Nurses some lazy or pedantic virtue
In the cheap sunshine or by shady springs,
With roots and pot-herbs; where thy right hand,
Tearing those humane passions from the mind,
Upon whose stocks fair blooming virtues flourish,
Degradeth nature, and benumbeth sense,
And, Gorgon-like, turns active men to stone.
We not require the dull society
Of your necessitated temperance,
Or that unnatural stupidity
That knows nor joy nor sorrow; nor your forc'd
Falsely exalted passive fortitude
Above the active. This low abject brood,
That fix their seats in mediocrity,
Become your servile minds; but we advance
Such virtues only as admit excess,
Brave, bounteous acts, regal magnificence,
All-seeing prudence, magnanimity
That knows no bound, and that heroic virtue
For which antiquity hath left no name,
But patterns only, such as Hercules,
Achilles, Theseus. Back to thy loath'd cell;
And when thou seest the new enlightened sphere,
Study to know but what those worthies were.

T. CAREW

On the left, without inline-block*, the header starts at the bottom of the page.*
Ew! On the right, thanks to inline-block*, the header begins a new page.*

Controlling a header's position

You don't really ever want a header to begin at the bottom of the page. At the very least, it should be followed by one paragraph, and sometimes, perhaps more than that.

1. Insert an opening div element with an appropriate class before the header and a closing div element after the paragraph that should be kept together with the header.

```
<div class="keep">
<h1>Complemental Verses</h1>
<p class="quote">The Pretensions of Poverty
   Thou dost presume too much, poor needy wretch,
   To claim a station in the firmament...</p></div>
```

2. Create a rule in the CSS that applies to the div and class you created in the previous step, and set the display property to inline-block.

```
div.keep {
   display: inline-block;
   }
```

Keeping captions with their images

Another common set of elements that you might want to keep together are captions with their images.

1. Insert an opening div element with an appropriate class before the img element, and a closing div element after the paragraph element that contains the caption.

```
<div class="keep">
   <img src="images/Thoreau_house.jpg" alt="Thoreau's House" />
   <p class="caption">This is a reproduction of Thoreau's House at Walden
      Pond.</p>
</div>
```

2 Create a rule in the CSS that applies to the div and class you created in the previous step, and set the display property to inline-block. (Of course, if you already created the rule in the previous section, you don't have to repeat this step.)

```
div.keep {
   display: inline-block;
   }
```

Setting widows and orphans properties

Although the iBooks app does not currently support the CSS widows and orphans properties, other ereaders, like Barnes & Noble's Nook and Adobe Digital Editions, do. It's probably a good idea to include the widows and orphans properties in your ebooks so that they look as good as possible in those ereaders that support them.

1 To insist that at least two lines of a paragraph appear together at the bottom of a page, type orphans: 2; for the selector that controls the text in your ebook.

```
p {
   orphans: 2;
   }
```

2 To insist that at least two lines of a paragraph appear together at the top of a page, type widows: 2; for the selector that controls the text in your ebook.

```
p {
   widows: 2;
   }
```

Of course, you can insist on any number of minimum number of lines at the end or beginning of a page.

Setting page break options

The CSS controls for page breaks are much more powerful than the display: inline-block workaround discussed earlier. Unfortunately, iBooks does not yet support them. However, since other ereaders do, it's probably a good idea to start to use them so that your EPUB documents will view properly—and at their best—as soon as possible.

1. Use page-break-before: always to have an element begin on a new page. This might be the case of a chapter title or a major sub-title.
2. Use page-break-before: avoid to keep an element from beginning on a new page, unless absolutely necessary. This might be the case of a caption that should stay with the image that precedes it.
3. Use page-break-after: always to have the element be the last item on the page, even if it means a lot of empty white space.
4. And use page-break-after: avoid to discourage a page break after an item. This might be a good idea for images or minor sub-heads that should not appear alone at the bottom of a page.
5. Use page-break-after: auto and page-break-before: auto to let the ereader determine the best place to break a page. (These are the defaults.)
6. Finally, use page-break-inside: avoid to keep an element from being divided by a page break. You might use this rule on a table, list, or some other element that should not be divided across various pages. (This is the CSS property that display: inline-block roughly approximates.)

Remember that any time you create manual page breaks, you're liable to create extra blank space in your ebook.

Further, remember that page break properties are always dependent on the content in the book. If a reader's page can only hold 18 lines and your book has a 20 line paragraph, the reader will be forced to break the paragraph onto two pages, no matter what you've chosen for page breaks. I have seen ereaders try other alternatives (like refusing to display the additional content), and that is far worse.

Drop caps and small caps

It's a common practice for the first word in a new chapter to have a drop cap—an initial letter that is bigger than the rest of the line—and for the rest of the word, and sometimes a few additional words, to be in small caps. There are two techniques for designating what should be a drop cap and what should be set in small caps: you can either let CSS do the work for you, or you can explicitly tag what should be affected in the XHTML code (or have InDesign do it for you). The disadvantage of the second technique is that the tags that you must insert in order to mark the first letter and the rest of the line make it difficult to search for the text involved. On the other hand, although the iBooks app can understand the standard, more search-friendly CSS code, not all ereaders do. Nevertheless, especially for ebooks for the iPad, I recommend letting CSS do the heavy lifting. I'll show you both methods.

Having CSS mark the first letter and line

In our example, we want the first paragraph of each chapter to have a drop cap and that the entire first line be formatted in small caps. Instead of hard coding those selections by enclosing the desired text in tags in the XHTML document, we can tell CSS to use the first letter of a given styled paragraph, whatever it may be, or the first line of a paragraph, whatever it may be. This saves time and also keeps the text completely searchable.

1. Make sure that the first paragraph of each chapter is tagged in the XHTML document. In our example, this was already done by InDesign.

```
<p class="first-para">When I wrote the following pages, or rather the bulk
   of them, I lived alone, in the woods,...</p>
```

2. In the CSS, begin the special rule by appending :first-letter to the selector for the first paragraph.

```
p.first-para:first-letter
```

3 Specify the formatting that should be applied to the first letter of the first-para paragraphs. The formatting that is particularly important for the drop cap is highlighted below, and includes floating to the left, a larger font size, and some margin values to position the letter properly.

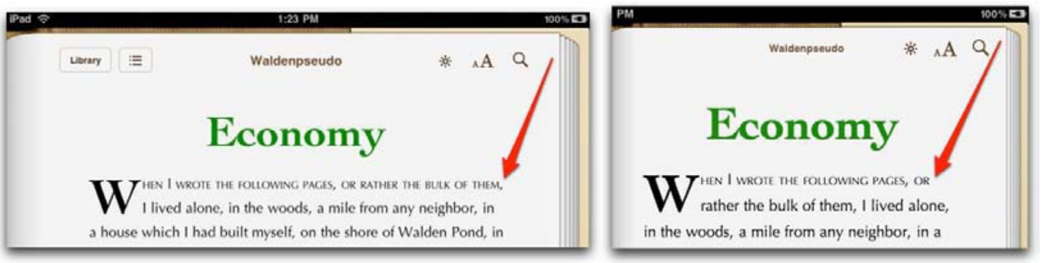
```
p.first-para:first-letter {
    font-family: "Cochin";
    font-weight: bold;
    float: left;
    font-size: 3.5em;
    margin-top: 0.25em;
    margin-right:.05em;
}
```

4 Create the special rule for the first line of text by appending :first-line to the selector for the first paragraph.

```
p.first-para:first-line
```

5 Specify the small caps formatting that should be applied to the entire first line (however long it is, depending on the display).

```
p.first-para:first-line {
    font-variant: small-caps;
}
```



Economy

WHEN I WROTE THE FOLLOWING PAGES, OR RATHER THE BULK OF THEM, I lived alone, in the woods, a mile from any neighbor, in a house which I had built myself, on the shore of Walden Pond, in

Economy

WHEN I WROTE THE FOLLOWING PAGES, OR rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a

The beauty of letting CSS apply formatting to the first line is that this might change depending on the display, or the orientation of same, as shown here. Further, the text remains completely searchable.

Tagging the first letter and first line explicitly

Because the CSS first-line and first-letter selectors are not universally supported (currently Adobe Digital Editions, for one, does not support them), you may prefer to tag the drop cap letter and the first few words explicitly in the XHTML.

1 Enclose the first letter of the chapter in span tags with a special class that indicates that it should be a drop cap.

```
<p class="first-para"><span class="drop-cap">W</span>hen I wrote the
   following pages, or rather the bulk of them, I lived alone, in the woods,...
```

2 In the CSS, create a rule for the .drop-cap class that includes a larger font-size, left float, and margin adjustments to keep it properly aligned, where necessary. The actual formatting instructions may be identical to those in the previous section, with special attention to the float, font-size, and margin properties.

```
.drop-cap {
   font-family: "Cochin";
   font-weight: bold;
   float: left;
   font-size: 3.5em;
   margin-top: 0.25em;
   margin-right:.05em;
}
```

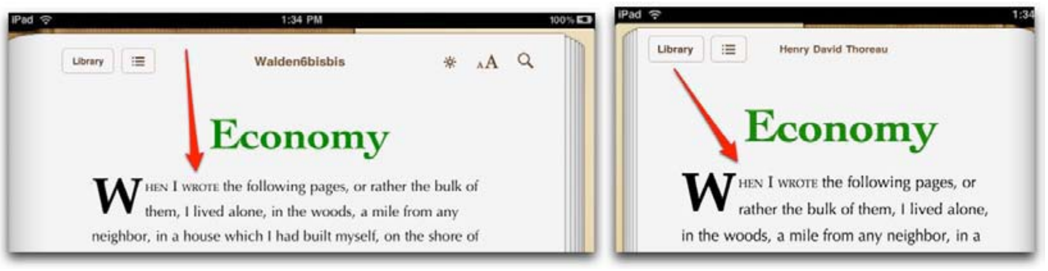
3 Enclose the rest of the drop-capped word, and if desired, the next few words, in span tags with a special class that indicates that they should be in small caps. Since you can't know what the first line will be, it's better just to choose a few words.

```
<p class="first-para"><span class="drop-cap">W</span><span class="small-
   caps">hen I wrote</span> the following pages, or rather the bulk of them, I
   lived alone, in the woods,...
```

4 In the CSS, create a rule for the small-caps class with the font-variant property.

```
span.small-caps {
    font-variant: small-caps;
}
```

5 Rezip and test the EPUB file to make sure you like the way the small caps are displayed.


iPad
1:34 PM
100%
Library
Walden6bisbis
Economy
WHEN I WROTE the following pages, or rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a house which I had built myself, on the shore of
iPad
1:34
Library
Henry David Thoreau
Economy
WHEN I WROTE the following pages, or rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a

When you mark text explicitly, you have to choose ahead of time what will be marked, and thus it can't vary with the line length.

Tip

Just for the record, Adobe Digital Editions doesn't currently support font-variant: small-caps.

Controlling spacing

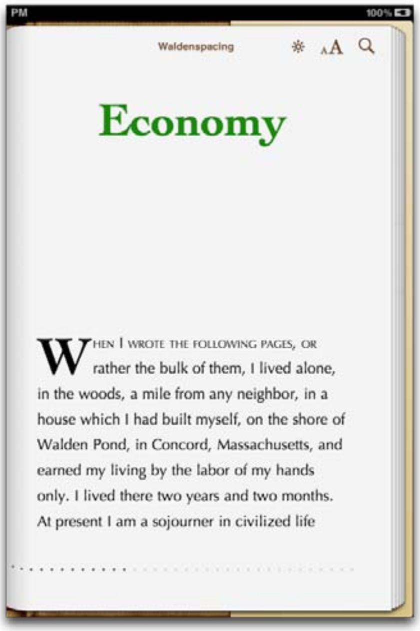
Now that we've got the drop cap and small caps in the first line, it seems like the Chapter title should be set off with more space. Although we defined 2 inches of space after the title in InDesign, the exported value in the CSS is only .33em. This is a curious bug that occurs only in headers and only when you export to EPUB using a TOC style (which is necessary in order to create a navigational TOC). Luckily, it is easily remedied.

1 Open the CSS document for the book. Although we specified 1 pica of space before and 12 picas after, the h1.header rule generated by InDesign has a margin property that looks like this:

```
margin: 0.03em 0em 0.33em 0em;
```

2 Change the margin-bottom value to make there be more space between the header and the first paragraph. I also like to simplify the values.

```
margin: 0 0 4em 0;
```



Economy

When I wrote the following pages, or rather the bulk of them, I lived alone, in the woods, a mile from any neighbor, in a house which I had built myself, on the shore of Walden Pond, in Concord, Massachusetts, and earned my living by the labor of my hands only. I lived there two years and two months. At present I am a sojourner in civilized life

The first page of the chapter looks much better now.

Controlling indents

It's common practice for most but not all paragraphs in books to be indented. In particular, paragraphs that follow illustrations or quotes should generally not be indented. Happily, CSS is quite adept—perhaps even more so than InDesign—at applying indents in the proper places. It does so by looking at which elements *follow each other*, or in CSS parlance, are *siblings*. For example, if a regular paragraph follows another regular paragraph, there should be an indent, but if a regular paragraph follows an illustration, there should not.

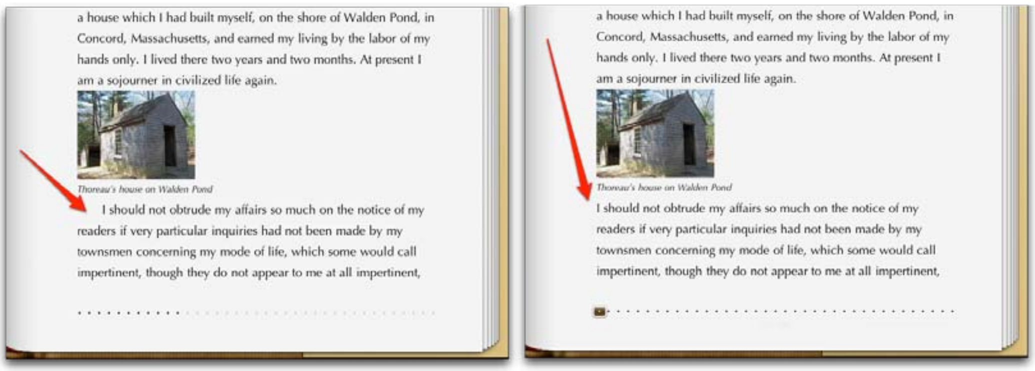
In our example, the illustration is an img element that is contained in a div. And indeed there are no situations in which a div should be followed by an indented paragraph. Therefore, we can specify in the CSS that every body classed p that follows a div should not have any text indent.

1 Type the selector for the element that directly precedes the element for which you want to remove the text indent, in this case, div.

2 Then type a plus sign (+) followed by the name of the element that you wish to format, in this case p.body.

3 Finally, specify the text-indent property that should only be applied to body classed p elements that follow a div.

```
div + p.body {text-indent: 0em !important}
```



a house which I had built myself, on the shore of Walden Pond, in Concord, Massachusetts, and earned my living by the labor of my hands only. I lived there two years and two months. At present I am a sojourner in civilized life again.

Thoreau's house on Walden Pond

I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concerning my mode of life, which some would call impertinent, though they do not appear to me at all impertinent,

a house which I had built myself, on the shore of Walden Pond, in Concord, Massachusetts, and earned my living by the labor of my hands only. I lived there two years and two months. At present I am a sojourner in civilized life again.

Thoreau's house on Walden Pond

I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concerning my mode of life, which some would call impertinent, though they do not appear to me at all impertinent,

Before (on left), text is indented after an image. After (on right): no text indent. The cool thing about CSS is that you don't have to create or apply a special style. It knows when to apply it!

Formatting short lines

One of the tricky things about ereaders is their notoriously narrow widths. Try reading poetry on an iPhone and you'll quickly understand what I mean. So, it's important to be able to format short lines—that don't automatically wrap—in an attractive fashion. My solution is hanging indents and specialized spacing.

Keep in mind when working with margins and short lines that ems might not be the most appropriate measurement. While 1 or 2 ems on an iPad screen is perfectly reasonable, it's much too much on an iPhone. A better solution is to use percentages so that the indent and margins depend on the screen width. Although this works less well for very wide desktop computer windows, probably anyone reading an ebook on a computer would keep the window narrow enough so that the line length was comfortable, and thus percentage values would still work.

Our quote paragraph style in InDesign had an original margin of 2 picas and 0 text indent. Because the font size was 11pt, upon export, the margin was converted to 2.18em, while the text indent stayed 0:

```
p.quote {
   text-indent: 0em;
   margin: 0em 0em 0em 2.18em;
...
```

The text indent for the body paragraph rule was 2 picas, and InDesign converted that to 2em (since the text is set at 12pt):

```
p.body {
   text-indent: 2em;
...
```

1 First, make sure your short lines are tagged in a consistent way in the XHTML file. The ones in the example text are marked with the quote class. Each line should be tagged separately with no <br/> elements.

```
<p class="body">But men labor under a mistake...</p>
   <p class="quote">Inde genus durum sumus, experiensque laborum,</p>
   <p class="quote">Et documenta damus qua simus origine nati.</p>
```

2 Change the text-indent property of the body classed paragraphs to 10% so that it adjusts to the screen in which it is displayed. Be sure to add the !important modifier so that ereaders will pay attention.

```
p.body {
   text-indent: 10% !important;
...
```

3 Change the left margin for the quote class to 20%, and give it a negative text indent of -10%. We want the quote line to begin 10% from the left (the same as the text indent of body paragraphs).

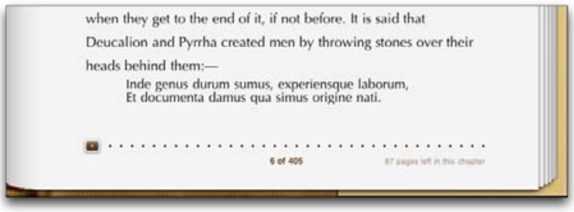
```
p.quote {
   text-indent: -10% !important;
   margin: 0 0 0 20% !important;
...
```

If the screen is wide enough, the entire line will be displayed on a single line. But if the line wraps, the content on the second and successive lines will get tucked under the first line at 20% from the left.

4 I like my quotes to have less leading (space between lines), so I also changed the line-height property to 100%, again, adding the !important rule to make sure ereaders use it.

```
p.quote {
   text-indent: -10% !important;
   margin: 0 0 0 20% !important;
   line-height: 100% !important;
...
```

On the iPad held vertically with a single, large page, the lines are not broken:



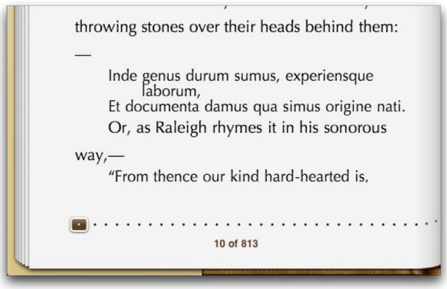
when they get to the end of it, if not before. It is said that Deucalion and Pyrrha created men by throwing stones over their heads behind them:—

Inde genus durum sumus, experiensque laborum,
Et documenta damus qua simus origine nati.

6 of 405 87 pages left in this chapter

Even on the largest iBooks page, the 10% indent is not exorbitant.

On the iPad held horizontally, the lines break, but the hanging indents keep the text coherent. The same happens with Stanza on the iPhone (below right).



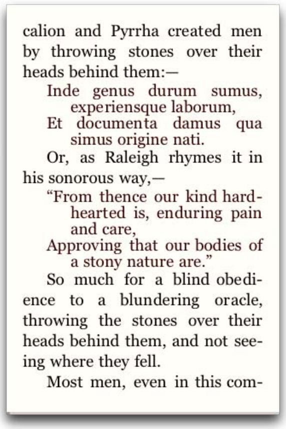
throwing stones over their heads behind them:

—

Inde genus durum sumus, experiensque
laborum,
Et documenta damus qua simus origine nati.
Or, as Raleigh rhymes it in his sonorous

way,—
"From thence our kind hard-hearted is,

10 of 813



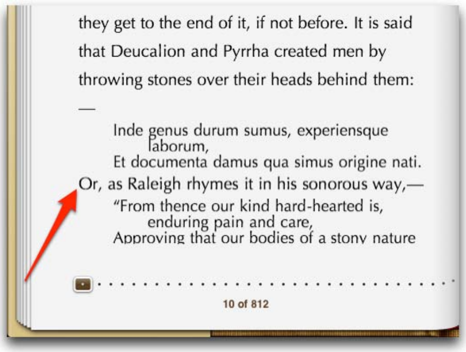
calion and Pyrrha created men by throwing stones over their heads behind them:—
Inde genus durum sumus,
experiensque laborum,
Et documenta damus qua
simus origine nati.
Or, as Raleigh rhymes it in his sonorous way,—
"From thence our kind hard-
hearted is, enduring pain
and care,
Approving that our bodies of
a stony nature are."
So much for a blind obedience to a blundering oracle, throwing the stones over their heads behind them, and not seeing where they fell.
Most men, even in this com-

As the screen gets narrower, the indent gets slightly smaller, always taking up 10% and looking proportional in all three venues.

The only problem is that the regular body paragraphs should not have a text indent when they directly follow a quote. We already saw how to handle this in "Controlling indents": we'll remove the text indent for body paragraphs that follow a quote paragraph.

5 Add a new rule for body paragraphs that follow a quote paragraph so that there is no text indent.

```
p.quote + p.body {
   text-indent: 0 !important;
}
```



they get to the end of it, if not before. It is said
that Deucalion and Pyrrha created men by
throwing stones over their heads behind them:
—
Inde genus durum sumus, experiensque
laborum,
Et documenta damus qua simus origine nati.
Or, as Raleigh rhymes it in his sonorous way,—
"From thence our kind hard-hearted is,
enduring pain and care,
Approving that our bodies of a stony nature

10 of 812

The regular body paragraphs between the quoted ones stand out better now that they're not indented.

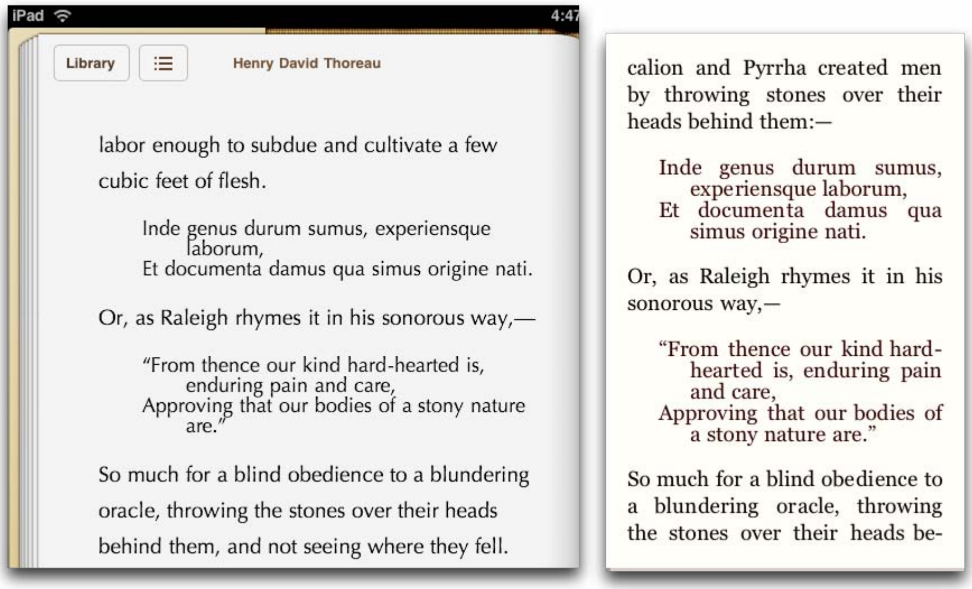
Since the body paragraphs have 1.67em line-height and the quote paragraphs only have 100%, and neither style has space before or after, the quotes get lost in the body of the text. But since each quote is on its own line, we can't simply add space before and after. Indeed, we only want space *before the first quote* and *after the last one*. Once again, we'll take advantage of CSS's powerful sibling selectors.

6 Create a style rule that adds space before a quote only when it follows a body paragraph.

```
p.body + p.quote {margin-top:1em !important}
```

7 Finally, add the same margin rule to our earlier rule that selects body paragraphs when they're preceded by a quote paragraph:

```
p.quote + p.body {
    text-indent: 0 !important;
    margin-top: 1em !important;
}
```



labor enough to subdue and cultivate a few cubic feet of flesh.

Inde genus durum sumus, experiensque laborum,
Et documenta damus qua simus origine nati.

Or, as Raleigh rhymes it in his sonorous way,—

"From thence our kind hard-hearted is, enduring pain and care,
Approving that our bodies of a stony nature are."

So much for a blind obedience to a blundering oracle, throwing the stones over their heads behind them, and not seeing where they fell.

calion and Pyrrha created men by throwing stones over their heads behind them:—

Inde genus durum sumus, experiensque laborum,
Et documenta damus qua simus origine nati.

Or, as Raleigh rhymes it in his sonorous way,—

"From thence our kind hard-hearted is, enduring pain and care,
Approving that our bodies of a stony nature are."

So much for a blind obedience to a blundering oracle, throwing the stones over their heads be-

Now the short-lined quotes look great no matter how wide the screen is.

Perhaps the only other modification you might make is reducing the size of the quote text slightly.

Borders and backgrounds

Borders and backgrounds are sort of pseudo-images, as they are created on the fly, generally around your text. They can make portions of your text really stand out. The iBooks app on the iPad supports most of the same CSS that Safari does, that is, most of CSS2 and a chunk of CSS3, including Webkit extensions. Other readers like Barnes & Noble Nook, Ibis Reader, and Stanza support many of these features too. There's quite a lot you can do.

Creating a sidebar

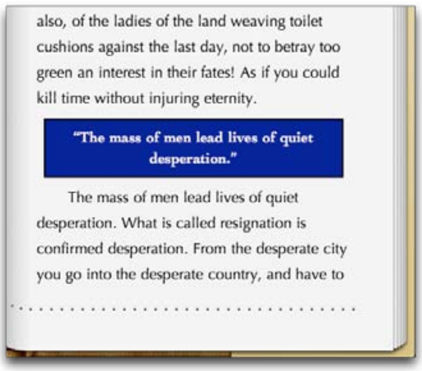
One of the easiest and most useful things you can do with borders and backgrounds is to create a sidebar (or *central bar* as the case may be) to offset a piece of your text and thereby call attention to it.

1. Add a class to the desired p element in your XHTML document. I like to use the word *sidebar*.

```
<p class="sidebar">"The mass of men lead lives of quiet desperation."</p>
```

2. The CSS should include margin values to offset the sidebar from the surrounding text, padding values to offset the contents from the border, possibly a percentage width to have it take up just a portion of the screen, dependent on the screen's size, a background color, text color, and border. Remember to add !important—particularly to the spacing properties—as well.

```
p.sidebar {
   margin: .5em !important;
   padding: .5em !important;
   width:30% !important;
   text-align:center !important;
   background: #0627a2;
   border: 2px solid black;
   color:white;
   font-family: Cochin, serif;
   font-weight: bold;
   text-indent:0 !important;
   }
```



also, of the ladies of the land weaving toilet cushions against the last day, not to betray too green an interest in their fates! As if you could kill time without injuring eternity.

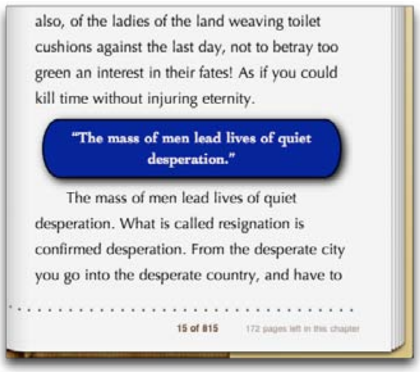
"The mass of men lead lives of quiet desperation."

The mass of men lead lives of quiet desperation. What is called resignation is confirmed desperation. From the desperate city you go into the desperate country, and have to

This is just a proof of concept (not a proof of lack of design sense!).

3 If you like, you may wish to explore the Webkit and Mozilla extensions, many of which work in the iBooks app and elsewhere. You can find a complete list of Webkit and Mozilla extensions on my website. For example, you may wish to add rounded corners and a shadow to your sidebar.

```
-webkit-border-radius: 3em 5em;
-webkit-box-shadow: 4px 4px 1em black;
-moz-border-radius: 3em 5em;
-moz-box-shadow: 4px 4px 1em black;
```



also, of the ladies of the land weaving toilet cushions against the last day, not to betray too green an interest in their fates! As if you could kill time without injuring eternity.

"The mass of men lead lives of quiet desperation."

The mass of men lead lives of quiet desperation. What is called resignation is confirmed desperation. From the desperate city you go into the desperate country, and have to

15 of 815 172 pages left in this chapter

There are many more effects you can create, but that would require an entire new book on CSS3 and Webkit extensions.

You can also wrap text around a sidebar, using the technique explained later in this chapter in "Working with images".

Hyphenation

You only have to open a full-justified ebook on a small screen to see how urgent the topic of hyphenation as become. Unfortunately, perfect solutions are still not at hand. Thankfully, some options are available.

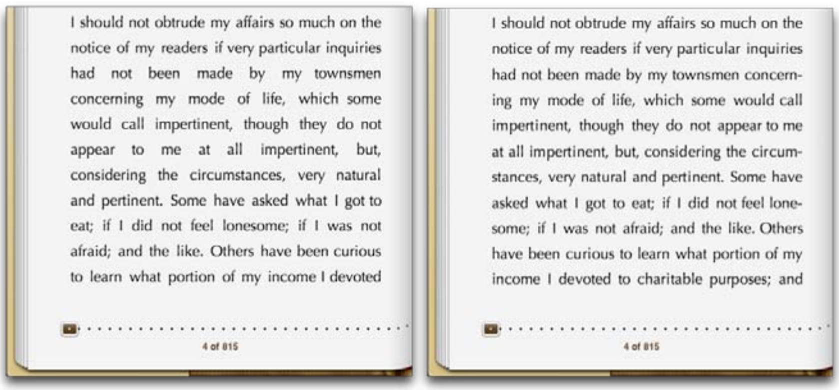
Adding soft hyphens

A soft hyphen is only displayed if the word is broken between two lines, and not if the word occurs in the middle of the line. It seems ideal at first glance. Unfortunately, soft hyphens have two possibly deal-breaking disadvantages. First, they must be hardcoded into the text, either by hand or with a script, and second, because they divide up the actual text, they render it unsearchable: If you're looking for *hyphenation* you won't find *hy&shy;phe&shy;nation*.

1 Add &shy; to indicate where a soft hyphen should go. You can also use &#173;.

```
<p class="body">I should not ob&shy;trude my affairs so much
   on the notice of my readers if very par&shy;tic&shy;u&shy;lar
   in&shy;qui&shy;ries had not been made by my towns&shy;men
   con&shy;cern&shy;ing my mode of life, which some would call
   im&shy;pert&shy;i&shy;nent, though they do not appear to me at all
   im&shy;pert&shy;i&shy;nent, but, con&shy;sid&shy;er&shy;ing the
```

You can see how this gets quickly out of hand.



I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concerning my mode of life, which some would call impertinent, though they do not appear to me at all impertinent, but, considering the circumstances, very natural and pertinent. Some have asked what I got to eat; if I did not feel lonesome; if I was not afraid; and the like. Others have been curious to learn what portion of my income I devoted

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I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concern-ing my mode of life, which some would call impertinent, though they do not appear to me at all impertinent, but, considering the circum-stances, very natural and pertinent. Some have asked what I got to eat; if I did not feel lone-some; if I was not afraid; and the like. Others have been curious to learn what portion of my income I devoted to charitable purposes; and

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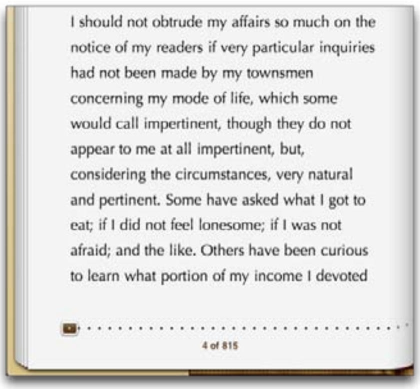
The text does look better when some words are hyphenated (right) on the small iBooks page. On a smaller device, the difference would be even greater.

Using left-aligned text

Personally, my inclination is to insist on left-aligned text. While this doesn't solve all hyphenation problems, it is a huge improvement over full-justified and saves the trouble of adding soft hyphens.

1 Make sure that your main body text is left aligned and not fully justified. You can try using !important to override any ereader presets (but read tip below).

```
p {text-align: left !important}
```



I should not obtrude my affairs so much on the notice of my readers if very particular inquiries had not been made by my townsmen concerning my mode of life, which some would call impertinent, though they do not appear to me at all impertinent, but, considering the circumstances, very natural and pertinent. Some have asked what I got to eat; if I did not feel lonesome; if I was not afraid; and the like. Others have been curious to learn what portion of my income I devoted

This is by no means perfect, but I think it's much better than justified and much simpler than adding hyphens manually.

At some point in the very near future, ereaders will come with build-in, robust hyphenation dictionaries, and this will all be a moot point. Indeed, some, like Stanza, already do. Hurrah!

Tip

Apple's iBooks 1.1 has an important anti-feature. Full justification has been applied to all books by default on the iPad (but not the iPhone) and cannot be overridden by the book designer. To turn off Full Justification, the user has to go to the general iPad Settings. Unless the user has turned off Full Justification, the book designer can choose right or centered alignment, but not left-alignment. It's terrible. I explain how to work around this anti-feature in "Controlling text alignment" earlier in this chapter.

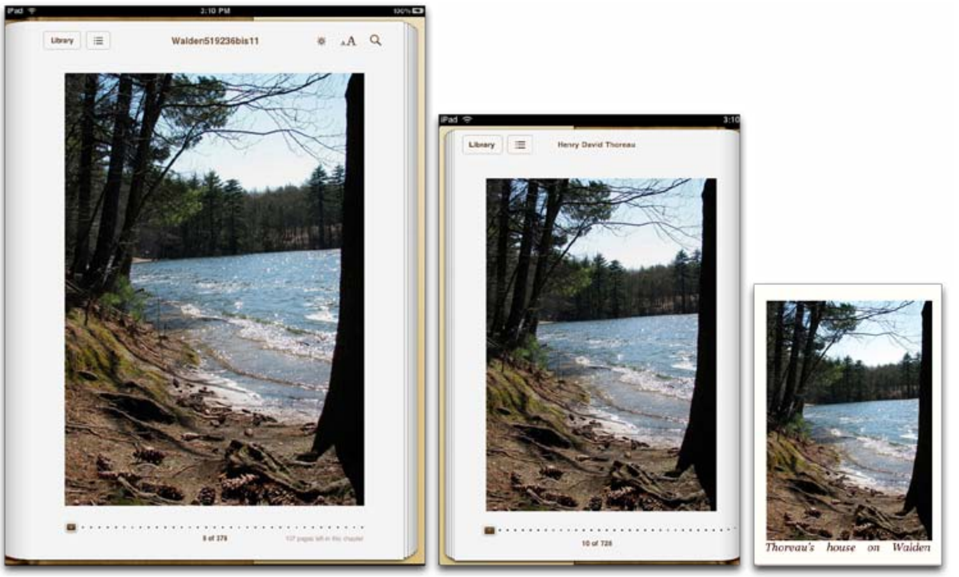
Working with images

While you have already seen how to insert images into an EPUB document with InDesign, there is much more you can do by editing the code directly.

Size

In XHTML and CSS you may be used to sizing an image explicitly be specifying the width and height in pixels. Because ereaders come in many different sizes, this solution is less satisfactory for EPUB documents and can result in an image that is too small in some ereaders and split over multiple pages in others. In addition, many ereaders, and iBooks on the iPad in particular, resize images automatically to fit on a page. However, even on these ereaders and without explicit sizes, particularly tall images are sometimes divided between multiple pages. The effect is not pretty.

If you want an image to fill an iBooks page, the trick is to use images that measure exactly 600 wide by 860 pixels tall. (I call images of this size *magic images*.) Because 600 x 860 is the size of the usable space on a large iBooks page, magic images fill that page, effectively creating a page break. Most ereaders will resize automatically for smaller pages. You could use larger images with the same proportion, but that would be a waste of bandwidth.



The iBooks app automatically resizes images to fit both larger and smaller pages. Even Stanza on the iPhone (right) resizes the image to fit.

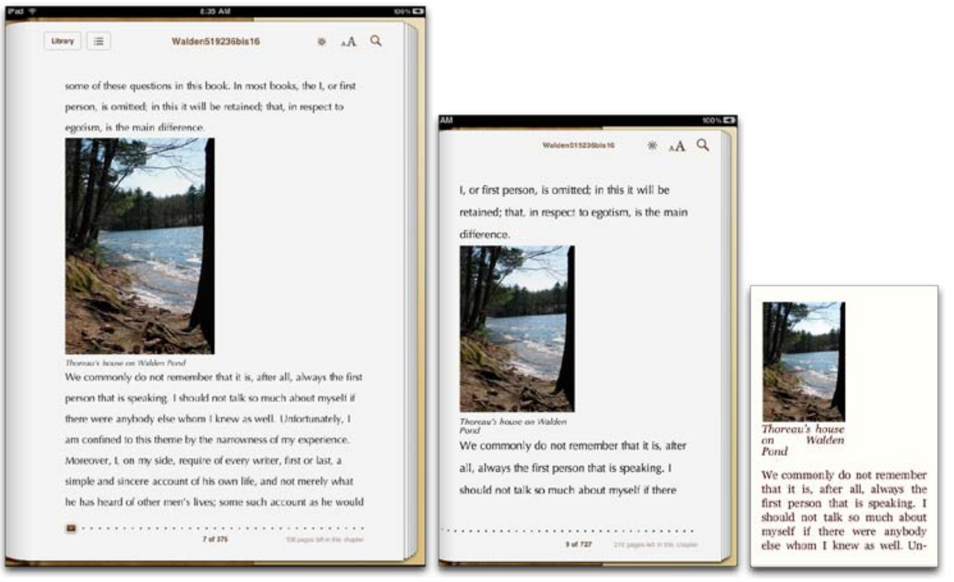
If you want images *smaller* than a full page, use percentage values for the width property in CSS to limit the width of the image to a portion of whatever size screen it displays in. When you do this, you have to keep in mind that whatever percentage you use is calculated with respect to the item's *parent element*, not its own original size. Further, in my tests, I've noticed that it doesn't work to apply the width directly to the img element. But I have found a workaround.

1 Create a div with a class that contains the image that you want to reduce in size. In my example that was exported from InDesign, I had a group that contained the image and the caption, which InDesign exported as a div with a class of illustration.

```
<div class="illustration"><img src="images/WaldenPondwaves.jpg"
   alt="Walden Pond"/>
<p class="caption">Thoreau's house on Walden Pond</p></div>
```

2 In the CSS, apply the width property with the desired percentage to the div. (I've used 50%.)

```
div.illustration {width: 50% !important;}
```



some of these questions in this book. In most books, the I, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference.

Thoreau's house on Walden Pond

We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Unfortunately, I am confined to this theme by the narrowness of my experience. Moreover, I, on my side, require of every writer, first or last, a simple and sincere account of his own life, and not merely what he has heard of other men's lives; some such account as he would

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I, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference.

Thoreau's house on Walden Pond

We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there

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Thoreau's house on Walden Pond

We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Un-

Now the image only takes up half the width of the screen, no matter how big or small that screen is. (From left to right: iPad vertical, one page of iPad horizontal, and Stanza on iPhone).

You *should* be able to apply the width property directly to the img element, according to the CSS specifications, but that doesn't yet work in iBooks.

Note that the iPad measures 1024 by 768 pixels, and since the usable area in iBooks is only about 600 by 860 pixels, it doesn't make any sense to use images that are any bigger than that. Although they'll be resized to physically fit, the actual file itself will be the same size, and will take longer to download and to view. If you use the width property to habitually reduce your images to 50% of the page size, make sure the images themselves don't measure any more than 300 pixels wide.

Wrapping text around images

Once you can reduce the size of images to a given percentage of the width of the ereader screen, then you have space to wrap text around those images.

1 Make sure the image is enclosed in a div element with a class. In my example, exported from InDesign, I have a group that contains the image and the caption, that was exported as a div.

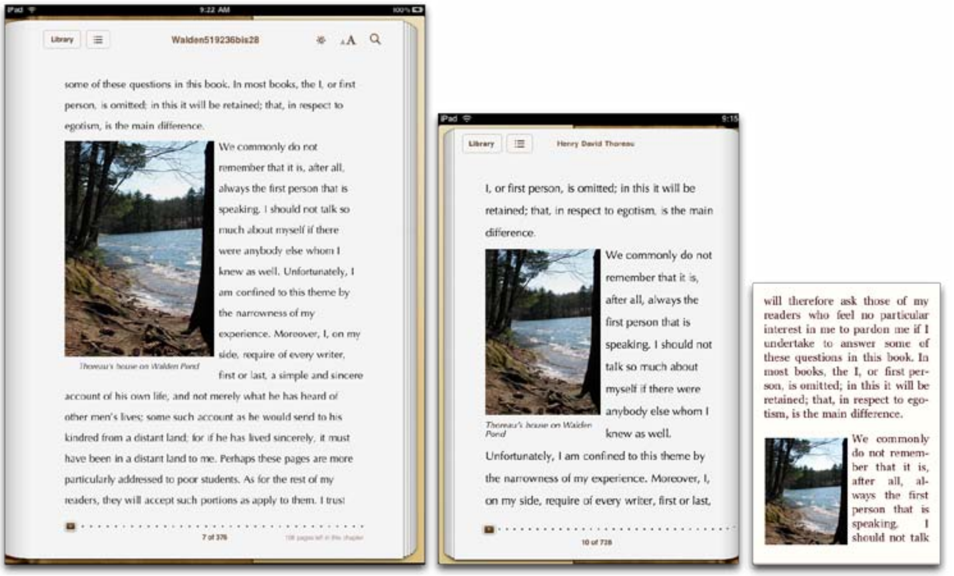
```
<div class="illustration"><img src="images/WaldenPondwaves.jpg"
   alt="Walden Pond"/>
<p class="caption">Thoreau's house on Walden Pond</p></div>
```

2 Create a rule for the div and class with a width of the desired percentage, the float property to the desired direction (left or right), and the margin property that inserts a small amount of space between the image and the surrounding text. Remember that the values for margin go in the order of top, right, bottom, left. (Because the surrounding text has a line-height of 2em, I have applied that here as well, to keep the image aligned with the text.)

```
div.illustration {
   width: 50% !important;
   float: left;
   margin: 0 .5em 0 0 !important;
   line-height: 2em !important;
}
```

3 Finally, apply a width of 100% to the img element. Otherwise, some eread-ers will have the image inherit the 50% width, creating an image that is only 25% of the ereader width, leaving a big empty white space (since the div is still only 50% of the width). I have also added the vertical-align property to keep the image aligned with the top of the text and a margin-bottom of .5em to separate the image from the caption.

```
img {
   width: 100% !important;
   vertical-align: text-top
   margin-bottom: .5em !important;
}
```



some of these questions in this book. In most books, the I, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference.

We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Unfortunately, I am confined to this theme by the narrowness of my experience. Moreover, I, on my side, require of every writer, first or last, a simple and sincere account of his own life, and not merely what he has heard of other men's lives; some such account as he would send to his kindred from a distant land; for if he has lived sincerely, it must have been in a distant land to me. Perhaps these pages are more particularly addressed to poor students. As for the rest of my readers, they will accept such portions as apply to them. I trust

Thoreau's house on Walden Pond

I, or first person, is omitted; in this it will be retained; that, in respect to egotism, is the main difference.

We commonly do not remember that it is, after all, always the first person that is speaking. I should not talk so much about myself if there were anybody else whom I knew as well. Unfortunately, I am confined to this theme by the narrowness of my experience. Moreover, I, on my side, require of every writer, first or last,

Thoreau's house on Walden Pond

will therefore ask those of my readers who feel no particular interest in me to pardon me if I undertake to answer some of these questions in this book. In most books, the I, or first per-son, is omitted; in this it will be retained; that, in respect to ego-tism, is the main difference.

We commonly do not remem-ber that it is, after all, al-ways the first person that is speaking. I should not talk

The image takes up 50% of the screen, and is nicely padded from the text to the right and the caption underneath. Stanza's division of the image into two pages (right) is not ideal, but is perhaps acceptable, given the extreme size restraints.

Note that the img tag is an inline element and must be enclosed in a div (or some other block-level) element in order to be valid in XHTML. I have also added a cap-tion, though this is optional.

Wrapping text around sidebars

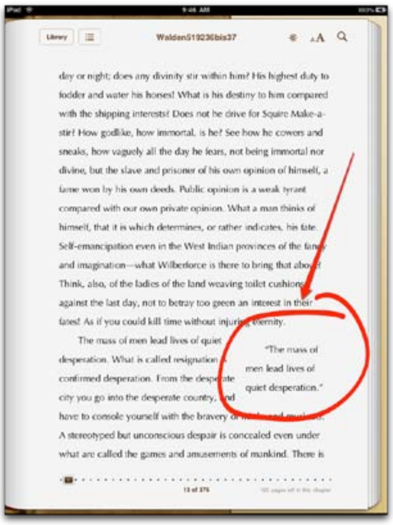
Of course you can float pretty much anything you want, including images, or even other bits of text. In fact, a sidebar is nothing more than one block of text floated next to another.

1 Create a class for your sidebar and apply it to the desired paragraph in your XHTML document.

```
<p class="sidebar">“The mass of men lead lives of quiet desperation.”</p>
```

2 In the CSS file, apply the float and width properties to the sidebar. The first can be set to right or left, the latter determines how much of your screen the sidebar will occupy. I also recommend specifying the margin, so that there's space between the sidebar and the surrounding text, and the padding, so that there's space between the contents of the sidebar and its border.

```
p.sidebar {
   float: right !important;
   width:30% !important;
   margin: 0 0 0 .5em !important;
   padding: .5em !important;
}
```



day or night; does any divinity stir within him? His highest duty to fodder and water his horses! What is his destiny to him compared with the shipping interests! Does not he drive for Squire Make-a-stir? How godlike, how immortal, is he? See how he cowers and sneaks, how vaguely all the day he fears, not being immortal nor divine, but the slave and prisoner of his own opinion of himself, a fame won by his own deeds. Public opinion is a weak tyrant compared with our own private opinion. What a man thinks of himself, that it is which determines, or rather indicates, his fate. Self-emancipation even in the West Indian provinces of the fancy and imagination—what Wilberforce is there to bring that about? Think, also, of the ladies of the land weaving toilet cushions against the last day, not to betray too green an interest in their fates! As if you could kill time without injuring eternity.

The mass of men lead lives of quiet desperation. What is called resignation is confirmed desperation. From the desperate city you go into the desperate country, and have to console yourself with the bravery of minks and muskrats. A stereotyped but unconscious despair is concealed even under what are called the games and amusements of mankind. There is

“The mass of men lead lives of quiet desperation.”

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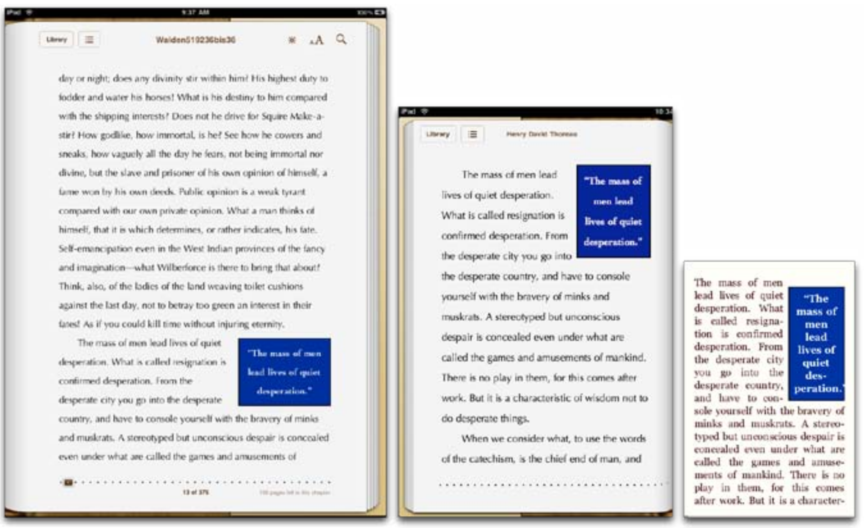
The sidebar is floating but needs some other formatting to help it stand out.

3 If desired, add additional formatting to make the sidebar stand out. In this example, I've added a background color, contrasting text color, and border, and changed the font, boldness, text indent, and text alignment.

```
p.sidebar {
        margin: 0 0 0 .5em !important;
        padding: .5em !important;
        float:right !important;
        width:30% !important;
        text-align:center !important;
        background: #0627a2;
        border: 2px solid black;
        color:white;
        font-family: Cochin;
        font-weight: bold;
        text-indent:0 !important;
    }
```

This technique works in all the ereaders I tested it in. You have to be a bit careful about small displays, but as long as you use a *percentage* value for the width and keep the text size small, it works pretty well.



day or night; does any divinity stir within him? His highest duty to fodder and water his horses! What is his destiny to him compared with the shipping interests? Does not he drive for Squire Make-a-stir? How godlike, how immortal, is he? See how he cowers and sneaks, how vaguely all the day he fears, not being immortal nor divine, but the slave and prisoner of his own opinion of himself, a fame won by his own deeds. Public opinion is a weak tyrant compared with our own private opinion. What a man thinks of himself, that it is which determines, or rather indicates, his fate. Self-emancipation even in the West Indian provinces of the fancy and imagination—what Wilberforce is there to bring that about? Think, also, of the ladies of the land weaving toilet cushions against the last day, not to betray too green an interest in their fates! As if you could kill time without injuring eternity.

"The mass of men lead lives of quiet desperation."

The mass of men lead lives of quiet desperation. What is called resignation is confirmed desperation. From the desperate city you go into the desperate country, and have to console yourself with the bravery of minks and muskrats. A stereotyped but unconscious despair is concealed even under what are called the games and amusements of

"The mass of men lead lives of quiet desperation."

The mass of men lead lives of quiet desperation. What is called resignation is confirmed desperation. From the desperate city you go into the desperate country, and have to console yourself with the bravery of minks and muskrats. A stereotyped but unconscious despair is concealed even under what are called the games and amusements of mankind. There is no play in them, for this comes after work. But it is a characteristic of wisdom not to do desperate things.

When we consider what, to use the words of the catechism, is the chief end of man, and

"The mass of men lead lives of quiet des-peration."

The mass of men lead lives of quiet desperation. What is called resigna-tion is confirmed desperation. From the desperate city you go into the desperate country, and have to con-sole yourself with the bravery of minks and muskrats. A stereo-typed but unconscious despair is concealed even under what are called the games and amuse-ments of mankind. There is no play in them, for this comes after work. But it is a character-

The sidebar floats to the right, next to the paragraph which it precedes. (From left to right: vertical iPad, one page of horizontal iPad and Stanza on iPhone).

Creating links

One of the great benefits of electronic books is that you can quickly jump from one section to another via a link, just like on any web page.

When you create a link to a web page, you use the destination web page's location, or URL, in the link code to indicate where a link should bring the visitor. Sometimes, the URL references pages on a different server, and sometimes they are pages on the same site. So it is with EPUB links: you can link to any XHTML file contained within the EPUB and you can also link to external pages on any site on the Internet.

Links in a book, however, tend to be somewhat more finely grained than links to an entire web page. It's more likely that you want to link directly to a particular passage. That is also possible, but it requires creating an *anchor* at the destination to which you can point.

For example, suppose we wanted to have a list of quotations from Thoreau's Walden, and then link them to their actual location within the text. I've created a separate XHTML document with the quotes themselves.

To link each quote to its location in the body of *Walden*, we need to create an anchor at the original location.

1 Find the destination that you want the link to bring the reader to.

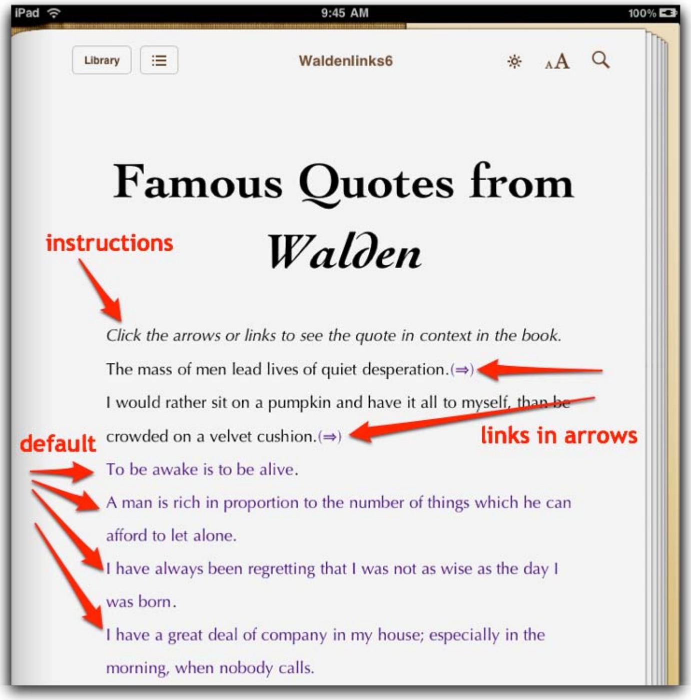
2 Enclose the destination in an a element with the id attribute equal to a keyword (with no spaces) that identifies the destination. In this example, I've used *pumpkin* as the keyword.

```
of the Celestial Empire, which Jonathan should be ashamed to know the
   names of. <a id="pumpkin">I would rather sit on a pumpkin and have it
   all to myself than be crowded on a velvet cushion.</a> I would rather ride
   on earth in an ox cart, with a free circulation, than go to heaven in the
   fancy car of an excursion train and breathe a malaria all the way.</p>
```

3 Open the document where you want to place the link and add an a element that links to the destination you've just created. Be sure to reference the document that contains the destination (*Walden_c1.xhtml* in this example) followed by a # followed by the keyword you used in the previous step *(pumpkin)*.

```
<p><a href="Walden_c1.xhtml#pumpkin">I would rather sit on a pumpkin
   and have it all to myself, than be crowded on a velvet cushion.</a></p>
```

You may also wish to style the links in the CSS to indicate to the reader that they exist. The default in many ereaders is the classic website blue underline. iBooks, however, displays links in a light purple with no text decoration, by default.



Famous Quotes from *Walden*

Click the arrows or links to see the quote in context in the book.

The mass of men lead lives of quiet desperation.(⇒)

I would rather sit on a pumpkin and have it all to myself, than be crowded on a velvet cushion.(⇒)

To be awake is to be alive.

A man is rich in proportion to the number of things which he can afford to let alone.

I have always been regretting that I was not as wise as the day I was born.

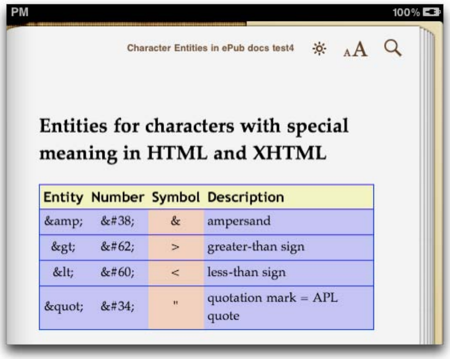
I have a great deal of company in my house; especially in the morning, when nobody calls.

I'm not sure this is obvious enough, and frankly, the blue underline is so ugly, that it is not my preferred choice either. Unfortunately, iBooks doesn't support hover, focus, or active states. I have experimented with using Zapf Dingbat arrows as a visual clue (first two lines above) without having to resort to underline or highlighting. You might need to use words like "click here" or add instructions in the text until iBooks recognizes other methods of making links obvious but not glaring.

Creating tables

Tables can be the perfect solution for displaying particular kinds of information, and thankfully, XHTML and CSS have generally good support for them. iBooks has a few quirks that we'll have to work around. The principal difficulty with tables, of course, is that they try to pack a lot of information into a small amount of space. The small page on the iPad is only about 530 pixels wide, which is quickly eaten up by multiple columns.

Since iBooks doesn't have a hyphenation dictionary, it tends to choke on words that are too long to fit in a column. Its principal strategy is to widen the column to fit, regardless of the rest of the contents of the column.

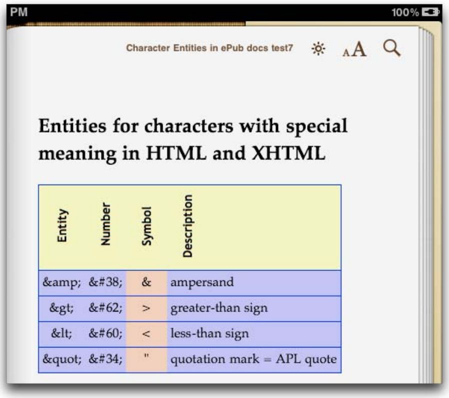


Entities for characters with special meaning in HTML and XHTML

Entity	Number	Symbol	Description
&amp;	&#38;	&	ampersand
&gt;	&#62;	>	greater-than sign
&lt;	&#60;	<	less-than sign
&quot;	&#34;	"	quotation mark = APL quote

Notice how the Symbol column is much too big for its contents, except for the title, which is squished in a little too tightly.

To solve this problem, either use very short headers for your columns, use smaller type, or, as I did in this case, use images placed on their side.

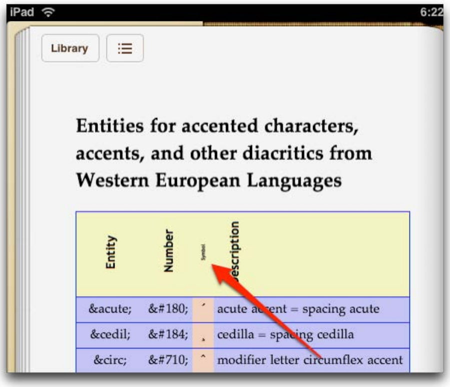


Entities for characters with special meaning in HTML and XHTML

Entity	Number	Symbol	Description
&amp;	&#38;	&	ampersand
&gt;	&#62;	>	greater-than sign
&lt;	&#60;	<	less-than sign
&quot;	&#34;	"	quotation mark = APL quote

One option is to use images rotated 90°.

The size of each column of a table is automatically determined according to the contents of its largest cell. If there is a particularly large column (like Description, in this example), other columns may shrink to accommodate them. In the second part of my example table, the descriptions are longer and so the column that holds the symbols was reduced in size. In iBooks, the *Symbol* image in the header row was actually shrunk to fit. This is a bug and should not happen (and doesn't in web browsers).

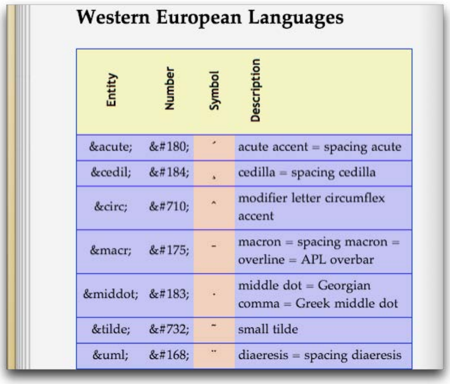


Entities for accented characters, accents, and other diacritics from Western European Languages

Entity	Number	Symbol	Description
&acute;	&#180;	´	acute accent = spacing acute
&cedil;	&#184;	¸	cedilla = spacing cedilla
&circ;	&#710;	ˆ	modifier letter circumflex accent

The solution in this case, is to use the min-width property to keep each column from collapsing past a certain point. This keeps the *Symbol* column wide enough to support the image (which it should have done on its own).

```
td {min-width: 40px}
```



Western European Languages

Entity	Number	Symbol	Description
&acute;	&#180;	´	acute accent = spacing acute
&cedil;	&#184;	¸	cedilla = spacing cedilla
&circ;	&#710;	ˆ	modifier letter circumflex accent
&macr;	&#175;	¯	macron = spacing macron = overline = APL overbar
&middot;	&#183;	·	middle dot = Georgian comma = Greek middle dot
&tilde;	&#732;	˜	small tilde
&uml;	&#168;	¨	diaeresis = spacing diaeresis

The min-width property makes the Symbol *column wide enough for the image not to be shrunken.*

Video in your ebook

Video is in a huge state of flux all over the Internet. You may have noticed the building conflict between Apple and Adobe over the use of Flash versus HTML5 for displaying video files. Apple doesn't want to use Flash because it's a proprietary Adobe format (which is true). Adobe says HTML5 isn't fully baked yet (which is also true).

And then there is also the issue of formats. Unfortunately, the most popular video file formats are all patented, and although nobody is charging anyone to use them yet, they still could at some point. For that reason, Firefox, which is open source itself, has refused to support the H.264 compression, which is Apple's preferred format and used in MP4 and M4V files, and Apple doesn't support Ogg Theora, which is the open source, but purportedly slower, solution.

Since this book concentrates mostly on how to create EPUBs for iBooks, I'll also focus on the kind of video that works with iBooks. Unfortunately, video doesn't work with iBooks in a standard way. While I've been telling you all along that EPUB needs conforming XHTML 1.1 files to be valid—and that continues to be true—it's also true that iBooks can read EPUB documents created from HTML5 documents. And HTML5 documents support video in a format that iBooks recognizes. Unfortunately, I haven't found any other ereaders that support this technique, so you should be wary of using it for books intended for any ereader besides iBooks on the iPad. In addition, even in iBooks, it's something less than rock solid, as you will see, and it won't be accepted for the iBookstore because using HTML5 breaks EpubCheck validation. I offer it to you more as a "look what's coming" rather than a "you can use this right now!" sort of technique.

Finally, it's quite probable that the EPUB format will eventually support and encompass HTML5, and that iBooks support will become more robust, at which time this technique will be perfectly valid. I'll post updates to my website as needed.

Creating your video

The iPad only supports video compressed with H.264 and saved in MP4/M4V format. Luckily, this is relatively easy to achieve with the free QuickTime Player from Apple.

1. Open your video with QuickTime Player. You can download the free program from http://www.apple.com/quicktime/download/. It can open .avi files (created by many digital cameras), .mov files (older QuickTime files), and .wmv files (a common Windows video format), and others.
2. Choose File > Export for Web. Choose one or more of the format options. The iPhone setting will create medium-sized M4V files, the iPhone (cellular) option creates very small files in .3gp format for viewing on cellphones, and the Desktop option creates a larger M4V file. I recommend the first iPhone option.
3. The QuickTime Player creates a whole folder full of files for you, only one of which you will need for your EPUB document. Drag the M4V file into the folder that contains your EPUB documents.

Adding code for the video

Again, be aware that this technique currently only works in the iBooks app for the iPad. Nevertheless, there are some techniques you can follow to help it degrade gracefully in ereaders that don't support it.

1. Instead of the XHTML document opening that I recommended back in "XHTML and CSS files" in Chapter 3, use the following one instead. There's no point in including the DOCTYPE or XML declaration if you're writing the code in HTML5.

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

2. Where you want your video to appear, begin the video element, by typing <video. (Note that I haven't been able to make a video appear anywhere except on the first page of an ebook. This is a strange bug that I imagine will get fixed soon.)
3. The most important attribute is src, which gives the location of your video. The previous section explains which formats are supported. In this example, I used src="Walden.m4v".
4. Unless you plan to build the controls for your Video player, you must add controls="true" so that your reader can play, rewind, change the volume, and view the video full screen.

5 The default dimensions for a video object in iBooks are 304 x 154 pixels—pretty close to, but not exactly, widescreen proportions. It's probably better to specify the dimensions of your video, which you can find by selecting your video, and choosing File > Get Info in the Finder.

Note that iBooks won't calculate one dimension if you specify just the other. For example, if you specify width="400", you'll get a 400 pixel wide frame, but the height will remain the same, resulting in black bars on either side of the video (unless it was 400 pixels wide to begin with).

Also note that iBooks won't scale your video to fit if you make it too big. When you view a video on the small page (for example, with the iPad held horizontally), the maximum display area is 400 pixels. If you make your player any bigger than that, it may display properly on the single large page, but it will get cut off on the smaller one.

6 Finally, there seems to be a little bug in the autoplay function. It seems like the default behavior is that movies do not play automatically, which is good. However, I've found that after viewing a book and then adding a new book, the old book's video starts playing on its own, even if you close it!! To avoid that, type autoplay="false".

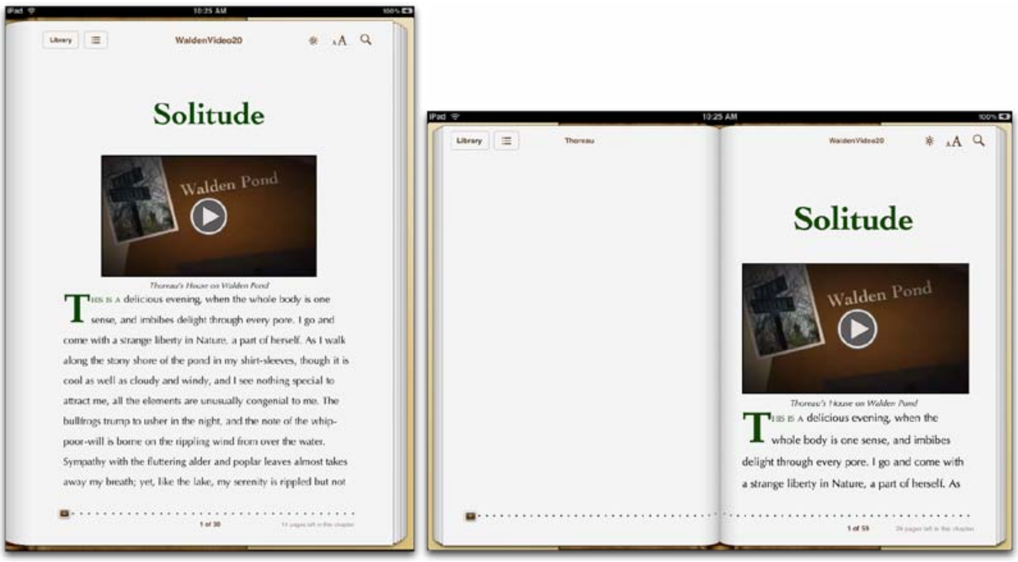
7 Finish the opening video element with a greater than sign: >.

8 Next, type what should appear if the video does not. In this example, I've created a link with an image. Most of the ereaders that don't support video *do* support a link to an external site that contains the video.

```
<a href="http://www.elizabethcastro.com/pgw_extras/Walden.
   m4v"><img src="images/waldenvideo.jpg" alt="Click for Walden Video"
   width="400" /></a>
```

9 Finally, add the closing </video> tag. When you're done, the whole thing should look like this:

```
<video src="Walden.m4v" width="320" height="240" autoplay="false">
   <a href="http://www.elizabethcastro.com/pgw_extras/Walden.
      m4v">Click here to see the video.</a>
</video>
```



Solitude

Thoreau's House on Walden Pond

This is a delicious evening, when the whole body is one sense, and imbibes delight through every pore. I go and come with a strange liberty in Nature, a part of herself. As I walk along the stony shore of the pond in my shirt-sleeves, though it is cool as well as cloudy and windy, and I see nothing special to attract me, all the elements are unusually congenial to me. The bullfrogs trump to usher in the night, and the note of the whip-poor-will is borne on the rippling wind from over the water. Sympathy with the fluttering alder and poplar leaves almost takes away my breath; yet, like the lake, my serenity is rippled but not

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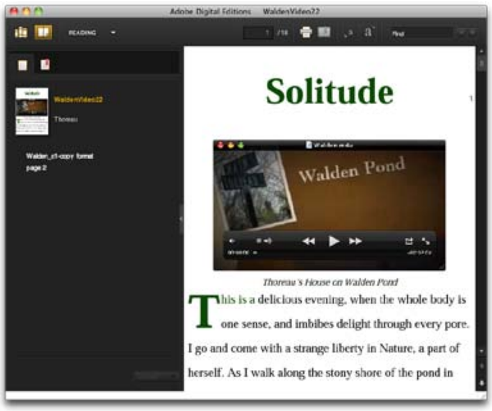
If you choose a width of 400 pixels, it fills the page when held horizontally (right), and still looks good on the single larger page.



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You can include an image and/or a link for ereaders like Adobe Digital Editions that don't yet support video. (This is just a screenshot of the video with a link to an external version of the video—not the video itself.)

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