

eBook on eBooks

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Richard Adams



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Part 1 • About eBooks

Chapter 1 • What are eBooks?

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What are They?

eBooks are electronic books that are designed to be read on tablets, eReaders, and laptop and desktop computers. Similar to web pages, eBooks are written with the eXtensible Hypertext Markup Language (XHTML), styled with Cascading Style Sheets (CSS), and can interact with readers via JavaScript. Depending upon the format, they can contain photos, videos, animations, and a variety of other media.

eBooks can be read on various devices. Low-cost, lightweight, black-and-white devices are referred to as eReaders, such as Amazon's Kindle, Kobo's Aura, and Barnes & Noble's Nook. eBooks can also be read on iPads with eReader apps like Apple's iBooks and on Android tablets with apps from Amazon, Kobo, Barnes & Noble, and other vendors.

Table 1.1. Advantages and Disadvantages of eBooks

Advantages	Disadvantages
<ol style="list-style-type: none">1. Usually low in cost2. Weight is that of the tablet or eReader3. Can fit multiple eBooks on one device4. Can access immediately from internet or eBook store	<ol style="list-style-type: none">1. Can be more difficult to read than ink-on-paper books2. Limited screen “real estate” (area)3. A small or thin paperback book could be lighter than a tablet4. Tablet/ eReader could be expensive, risk of loss or damage5. Battery, recharging, electrical power

eBook Formats



Reflowable eBook on an Amazon Kindle B&W eReader (photo by Frank Holleman on Unsplash.com).

ePub Reflowable (RFL).

ePub is an open-source eBook format whose standards are controlled by the International Digital Publishing Forum (IDPF, idpf.org), a division of the World Wide Web Consortium (W3C, w3c.org). ePub can be read on MacOS, Windows, iOS, and Android with a suitable app. The .epub file format is a ZIP-compressed archive that includes pages in XHTML, styles in CSS, JavaScript (if any), and media files for images and videos.

A good theme for reflow able ePub is “text is king.” ePub-RFL is a good format for text-heavy documents that have minimal, if any, illustrations, although color and black-and-white photos and drawings can be added. The font and text size can be chosen by the reader for maximum legibility.

The best way to understand the utility of ePub-RFL is if you see someone with an eReader on the train, bus, or airplane, or waiting in a doctor’s office. Perhaps this person wants to pass the time by reading a novel or enrich themselves with a psychology or business book. These eBooks probably contain mostly text

and very few illustrations. The readers can use a lightweight eReader that's easy to carry around and not very expensive.

ePub-RFL uses XHTML and CSS languages, which allow the content to adapt to different-sized eReaders, tablets, and orientations (e.g., vertical or portrait, horizontal or landscape).



Cookbook content suitable for ePub-FXL. (Photo courtesy of Instant Pot Eats on Google Images.)

ePub Fixed-Layout (FXL).

Fixed-layout ePub is a version of ePub with fixed page sizes and elements. An appropriate theme for ePub-FXL may be “media is king.” Unlike ePub-RFL, the text in ePub-FXL does not reflow based on the tablet, screen size, orientation, and user preferences for type. This format is useful when the author wants to set a fixed

relationship between text and photos or media. Examples include recipe books and children’s books.

ePub-FXL allows the use of a wider range of media, including grouped photos and captions, animations, videos, and audio files. A common use of this format is for children’s books in which the text is linked to an audio file so the reader can hear the text read out loud.

Mobi. An abbreviation for Mobipocket, Mobi is a proprietary format of ePub developed by Amazon for display on its Kindle

eReaders. Mobi is most appropriate for B&W documents that are mostly text, although the popular Kindle and Kindle Paper White devices do support shades of gray.

iBooks. These are Apple’s proprietary format of ePub developed for the iPad devices. iBooks can be created only on MacOS computers using the free iBooks Author page layout program. An advantage of iBooks is the extent and variety of media that they support, including not only photos, videos, and animations but also image galleries, animated panoramic views, 360° objects, and embedded web sites.

Table 2-1. eBook Formats

Format	Create with	Read on	Comments
ePub RFL (reflowable)	Adobe InDesign, Apple Pages, PressBooks	iPad, Android tablet; Mac, Windows computer	Reflowable format provides flexibility for text-heavy documents
ePub FXL (fixed-layout)	Adobe InDesign, Apple Pages	iPad, Android, MacOS, Windows	Fixed layout good for grouped photos and text, e.g., kids’ books, recipe books
Mobi	ePub with file converter, PressBooks	Amazon Kindle	Proprietary form of ePub, good for text-heavy documents in B&W
iBooks	Apple iBooks Author	iPad, Mac computer	Proprietary form of ePub with media-rich envt.

Chapter 2 • Page Layout Programs for eBooks

RICHARD ADAMS

Adobe InDesign

Part of Adobe’s Creative Suite of graphics software, InDesign is a page-layout application that can be used for formatting ePubs. The program can export to .epub file format directly from the File > Export menu. For laying out ePubs in InDesign, the authors recommend following the “Six Caveats of ePub,” as shown in the sidebar below.

The “Six Caveats” of Reflowable ePub

1. Keep it Simple
2. Photos—One photo and caption (if any) per page
3. Inline—All content (text and photos) must be inline, meaning pasted into a single text box with the Text (“i-beam”) tool.
4. Styles—Style all text with Paragraph Styles
5. Table of Contents—Create an Automatic Table of Contents Style with headings included to make a table of contents
6. Cover—Create and save in JPEG format

Six Caveats of ePub

1. **Keep it Simple.** Remember that ePub works best for text-heavy documents. The idea is to allow readers to select the font and size that they find easiest to read, then the XHTML page description language allows the contents to reflow according to the user’s font settings, tablet orientation, and screen size. In this format, any photos or media that you want to add should be considered embellishments that contribute to the theme or to the reader’s understanding of the content. Groups of related images, diagrams, and captions are best for fixed-layout ePub.
2. **Photos.** The authors recommend planning for one

photo and caption (if necessary) per page.

3. **Inline.** When designing an ePub in InDesign, create a single text box and paste all content (i.e., text and photos) into this one text box using the Text, or i-beam, tool. Multiple objects (i.e., text and picture boxes) may wind up at the end of the document or in different places when the document is exported to .epub.
4. **Styles.** All text in ePubs should be styled using Paragraph Styles. We recommend creating four styles and naming them the same as the XHTML tags that will be created—p for paragraph, h1 to h6 for headings, img for images, and caption for captions. The Keep Options in InDesign can be used to avoid having a photo and its caption on separate pages as much as possible.
5. **Table of Contents.** For your book to have a table of contents that appears in the eReader or app's Table of Contents tab, create a Table of Contents Style and include the heading (i.e., h1 to h6) styles in it.
6. **Cover.** For best results create the cover in InDesign, Illustrator, Photoshop, or other graphics application and save in JPEG format. Then combine the cover with the ePub at export.

Apple Pages

Apple's free Pages app can be used to lay out ePubs. Pages

exports to .epub directly from the File > Export menu. The authors recommend following the same “six caveats” described above when designing an ePub in Pages.

Apple iBooks Author

Apple’s free iBooks Author app for MacOS, which looks and works similar to Pages, is used to lay out Apple’s proprietary iBooks version of eBooks. iBooks have a semi-fixed layout character because readers are assumed to be using an iPad, or an iPad-sized window on the Mac version of the iBooks app. iBooks Author is only available for Macs and does not currently work on iPads or Windows. (However iPad users could write ePub eBooks in Apple Pages for iOS.) iBooks author files have the file format .iba and export to the .ibooks format for reading with Apple’s Books app.

iBooks Author supports a wide variety of media. Simply drag-and-drop photos and videos into the pages and adjust the size. More sophisticated media, such as panoramic views and rotatable 360° objects can be created with the free program, iAd Producer, or with Apple’s presentation program, Keynote.

WordPress Pressbooks

Pressbooks is a plugin for the WordPress web-based content management system. Pressbooks is easy for beginners to use because pages can be laid out in a WYSIWIG “Visual” tab. Authors who know HTML and CSS can edit in the “Text” tab. Pressbooks is an enterprise system that supports contributions

from multiple authors. Media, including photos and video, can be uploaded to Pressbooks and placed in appropriate pages. After content is created, Pressbooks chapters can be exported to .pdf, .epub, and .mobi formats, as well as .xml for authoring. Likewise files can be imported from .docx, .epub, .html, and .xml files.

Chapter 3 • Editing ePub

RICHARD ADAMS

Editing ePub enables authors and publishers familiar with HTML and CSS to make changes and create special effects outside of the originating program.

Opening an ePub

The .epub file type is a compressed archive containing the pages in XHTML, style specifications in CSS, and accompanying images, fonts, audio, video, JavaScript, and other files (if any). Opening and editing an .epub file generally requires a third-party app that can read XHTML, such as Sigil (Figure 3.1) or Oxygen XML Editor. Opening the ePub gives access to the XHTML and styles.

XHTML is similar to HTML. The X for “extensible” means that users can write their own tags, provided that they explain

Table 3.1. HTML Tags for ePub

<p>	paragraph
<h1>...<h6>	heading 1 (largest) to heading 6 (smallest)
	span, region of text to be selected and styled
	image, e.g.,
<figure>	Unites an tag and its caption (<figcaption>)
<figcaption>	caption for an tag

	break, or carriage return (self-closing), can be replaced with styles "padding" or "margin"
<hr/>	horizontal rule, or line; there are no vertical rules, but they can be made with a border-left or border-right style on an object.

To style a given tag with CSS, the tag must first be selected. This can be done by citing the tag itself, such as "p" for paragraph. However the specified style will be applied to all paragraphs. To select one specific paragraph, it's helpful to identify that paragraph with an ID (e.g., <p id="first-para">). The ID should be an alphanumeric name with no spaces. An ID can only be applied to one tag on a page. To select multiple tags, use a class.

The format is similar: ``. To cite an ID in CSS, use the # symbol. A period (.) indicates a class.

Table 3.2. HTML Identifiers for CSS Styling		
Identifier	Example in HTML	Selector in CSS
tag, e.g., <code><p></code>	<code><p></code>	<code>p</code>
ID	<code><p id="first-para"></code>	<code>#first-para</code>
class	<code></code>	<code>.body-fig</code>

Table 3.3 shows some styles that can be applied to text.

Table 3.3. Styles for Text and Images	
text	image
font-family:	
font-size:	width:
font-style:	height:
font-weight:	float:
line-height:	margin:
color:	

Creative Effects with ePubs

Some special effects that enhance ePubs include drop-caps, drop shadows on text and images, and borders on images.

Decorative fonts. Royalty-free fonts available from Google Fonts and other sources can be used in web-based and ePub

eBooks. Fonts can either be linked to their internet sources as style sheets or included on the web server or in the eBook. Technically an ePub should be readable without being connected to the internet, therefore it's best to download the font and include it in the ePub. When editing an ePub in Sigil, include the font file in the Fonts folder and specify it in the style sheet (**Figure 3.2**).

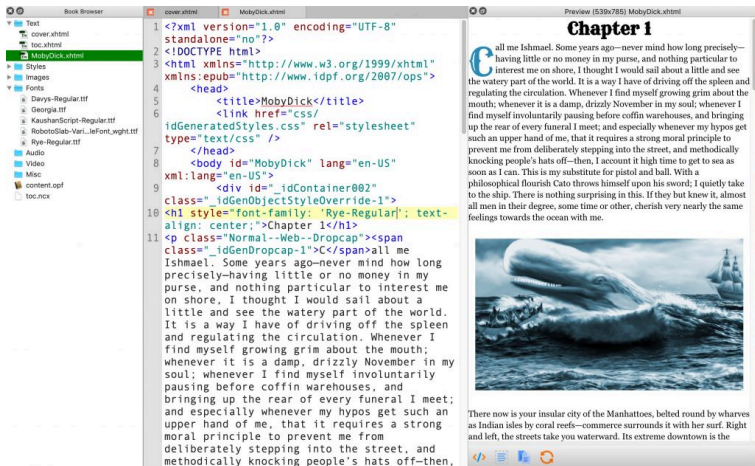


Figure 3-2. Decorative font placed in the Fonts folder and specified for the h1 tag in an ePub.

Drop-caps. Drop-caps can be created by making the first letter of the first paragraph larger than the surrounding text. In the example (**Figure 3.3**), the first letter in the paragraph, “C,” is selected using the `::first-letter` selector, which is built in to the latest version of HTML. The letter “C” has the surrounding text wrapped around it using the “float” left style; the letter “C” is set to 4.4 times the size of the other text using the “em” measurement. (One em is the size of the text in points, so for 14-pt. text like that shown, one em would be a square 14 pt.

on each side.) The “C” is set to wrap the surrounding letters using the “float: left” style. Margins are set for the top, right, bottom, and left positions to move the text further away to the right of the “C” and bring it closer to the bottom. The letter has a drop-shadow created with the text-shadow style, which has four specifications—right offset, vertical offset, blend distance, and colour.

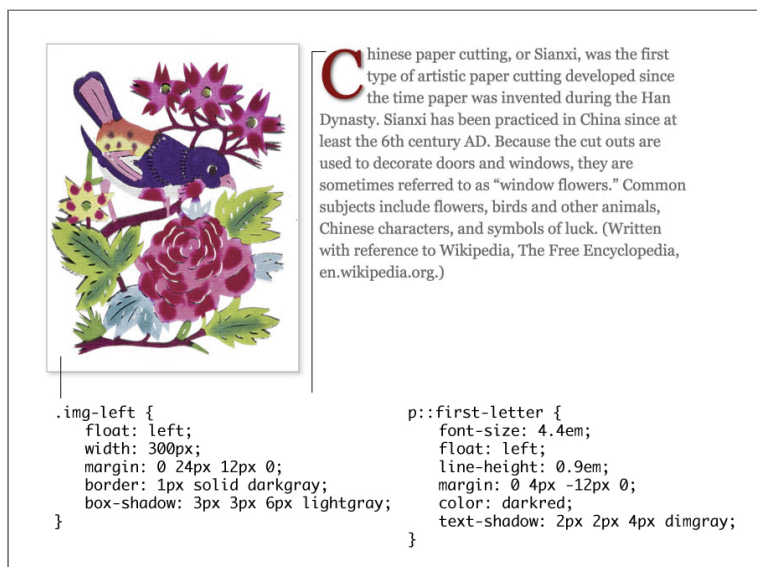


Figure 3.3. Selectors and styles for creating borders and drop shadows around images and drop caps for text.

Images. Images, like the one shown in **Figure 3.3**, can have borders applied using the “border” style, with specifications for width, line type, and colour. A drop-shadow can also be applied using the “box-shadow” style, which is similar to text-shadow described above. (Not all platforms, eReader apps, and eReaders may support the drop-shadow style.)

Small caps. These are smaller uppercase letters at the beginning of a chapter or section (**Figure 3.4**), often following a drop-cap. Small caps can be created by selecting the desired region of text with opening and closing `` tags, then setting the “font-variant: small-caps” style.

QUISQUE SED CONVALLIS ut vestibulum posuere, pede vestibulum vestibulum. Neque lacus sed, q curae libero. Sed laoreet eu nulla, consectetur r vitae ac non. Quam felis gravida at elementum t facilisis, ligula lectus libero malesuada tellus tin

Figure 3.4. Example of small caps set with the “font-variant” style.

Sidebars. Sidebars are boxes with ancillary information relating to the current chapter or section (**Figure 3.5**). Sidebars can be created by inserting one styled `<p>` tag, or if more than one paragraph, a `<div>` or division tag. The sidebar can then be styled with the “border” and “background” styles.

tellus ut ultrices ut, felis congue, aenean elit. Faucibus a risus. Lorem accumsan morbi ipsum nonummy class, etiam elementum orci lectus tincidunt eleifend, integer maecenas ipsum ac, urna sodales urna eros eros erat.

Quisque sed convallis ut vestibulum posuere, quisque sed leo vehicula eu aptent, imperdiet faucibus, metus arcu pede vestibulum vestibulum. Neque lacus sed, quisque arcu suspendisse consectetur. Consequat suspendisse diam, ac curae libero. Sed laoreet eu nulla, consectetur ridiculus neque erat nunc laoreet.

Quisque sed convallis ut vestibulum posuere, quisque sed leo vehicula eu aptent, imperdiet faucibus, metus arcu pede vestibulum vestibulum. Neque lacus sed, quisque arcu suspendisse consectetur. Consequat suspendisse diam, ac

Figure 3.5. Example of a sidebar with coloured background and border with rounded corners (border-radius).

Pull quotes. These are one or more sentences or phrases taken from the text that are set in much larger type in order to add

interest to the text (**Figure 3.6**). A pull quote can be created by especially styling a `<p>` paragraph tag, or using a `<div>` division. The text can be set to a larger font and with quote marks if appropriate.

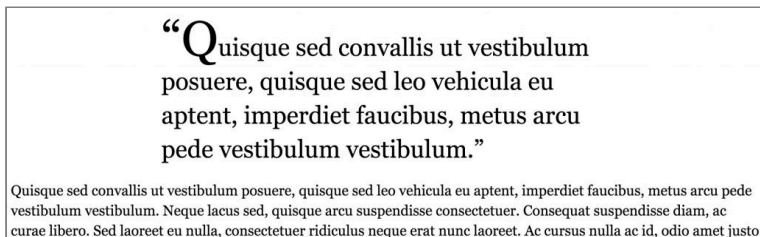


Figure 3.065. Example of a pull-quote.

Chapter 4 • Media in eBooks

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“Media” refers to audio, video, and animation files included in eBooks. The appropriateness and ability to include media depends on the eBook file format and anticipated viewing device and audience. Depending upon the intended audience and purpose of the eBook, media may be appropriate in the ePub format and is a strong point of iBooks. It may not be appropriate for Mobi because most B&W eReaders do not have speakers or enough storage space for large video files.

Of the various media types shown in [Table 4.1](#):

- *audio* refers to sound, examples of which could include background music, a voice reading the text in a children’s book, or a clip of a musical instrument.
- *video* refers to moving bitmapped pictures taken with a cell phone, digital camera, or video camcorder.

Videos, like pictures, represent images with microscopic pixels, or squares of light/dark and colour, which produce large files.

- *animation* generally refers to moving images drawn with vector graphics; that is, objects are defined by mathematical equations for points, lines, and arcs. Vector graphic animation files tend to be small because the mathematical modeling is text-based. Animation may play by itself or may include user interaction, such as buttons to start-stop-pause-rewind the scene. Vector-based animations can be exported to bitmapped formats, including animated GIF and QuickTime.

Table 4.1. Media in eBooks

eBook Format	Audio	Video	Animation
ePub from InDesign	✓	✓	✓
ePub from Pages	✓	✓	—
iBook from iBooks Author	✓	✓	✓
Mobi converted from ePub	—	—	✓

Audio and Video

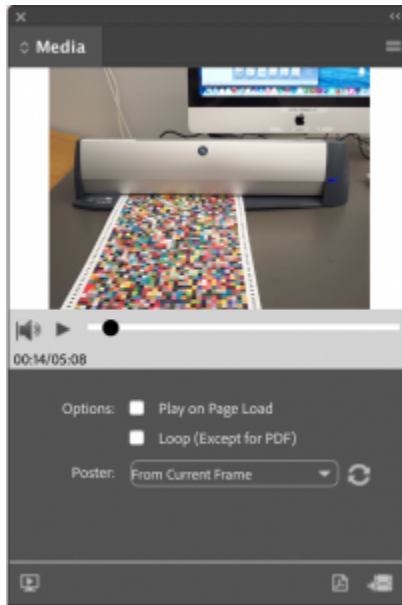


Figure 4-1. Adobe InDesign’s Media palette

Any YouTube fan can attest to the explosion of digital video on the web and how it has revolutionized communication—be it for education, product information, or just sharing personal experiences. Audio and video files can be added to pages using Adobe InDesign and Apple Pages, then exported to ePub. InDesign’s Window > Buttons and Forms palette can be used to add buttons that control an audio or video file’s playback. Audio to be inserted into InDesign must be in MP3 or MP4 format. An online converter may be helpful in getting the correct file type.

Most digital cameras today can record standard-definition (SD) and high-definition (HD) videos ([Table 4-2](#)). Camera types

range from cell phones to point-and-shoot, advanced amateur, and single-lens reflex (DSLR) cameras, along with amateur pocket video cams and shoulder-mounted professional models. Higher-level cameras offer more professional features, such as more control over camera settings and stereo recording from an external microphone.

Table 4-2. Video Resolutions		
Format	Resolution (pixels)	Suggested Use
Standard Definition (SD)	640 x 480	iPad, locations where space is limited
High Definition (HD 720)	1280 x 720	small-screen TVs and standard video window on laptops
High Definition (HD 1080)	1920 x 1080	large-screen TVs and full-screen on large monitors

Since digital video consists of a series of bitmapped images, file size limits their length and quality. A video is like a series of Photoshop images at 24–30 per second. If the length and width of the frame are doubled, then the file size quadruples. File size is a major consideration in the length and quality level of the video.

File format is another important consideration (Table 4-3).

Choose a format depending upon whether your movie will be played on a Windows, Apple, or tablet computer.

Table 4-3. Video Formats

Format	File extension	Use
Apple QuickTime	.mov	MacOS and iOS devices
MP4	.m4v, mp4	MacOS, iOS, and Windows
Windows Movie Player	.wmv	Windows computers Apple computers with plugin

Video Programs

A video editing program enables you to edit your video by doing such things as:

- deleting scenes that you don't want
- splicing scenes you do want into a continuous sequence
- adding transitions between scenes
- adding titles
- creating special effects, such as time-lapse
- deleting sound and adding a voiceover (narration)

Apple iMovie

iMovie is an easy-to-use program for basic video editing, provides an appropriate example of a video editing program for a one-semester course in web design.

Opening a Movie

1. Transfer your unedited movie from your camera to your computer.
2. Open iMovie and select one of the readymade themes (or No Theme).
3. Select Import Media and open your unedited movie, which will come into the Clips window.
4. In iMovie, select the entire clip and move to the editing window.

Deleting Unwanted Footage

1. In the editing window, place the play head where you want to cut the clip. Placing a marker (M) is a convenient way to evaluate a starting and stopping point. Then select Split Clip (B).
2. After splitting the clip you can select and delete the sections you don't want.

Adding Transitions

1. From the Content Library, select Transitions.

2. Find the transition you want and drag it in between two clips, or at the end of a clip. In the example, a Fade to Black transition was added to the beginning and end of the movie. The length of the transition can be set in seconds and tenths.

Adding Titles

1. From the Content Library, select Titles.
2. Find the title you want and drag to the location where you want it to appear—at the beginning or end of the clip, or in the middle. None of these locations add time to the movie. The title can be placed before the start or after the end of the clip, which lengthens the movie.

Lowering or Deleting Sound and Adding Voiceover

1. To lower the volume in a clip, select the clip and, using the Volume Adjust control above the play window, reduce the volume 100% to the level you want. The volume can also be faded in and out by dragging the dot above the volume level line in the sound window.
2. To delete sound, select the clip and then choose Modify > Detach Audio. The audio will appear below the clip as a green line. Select this line and delete.
3. To add a voiceover, select the clip and move the playhead to the location where you want to start the

narration.

4. Choose Window > Record Voiceover. The microphone icon will appear below the play window.
5. Click the start button, speak into the microphone, and click stop when finished. The narration will be added to the clip.

Exporting

1. To export your edited video, click the Share button (or File > Share), then select File.
2. The dialog box offers a choice of resolutions for output, along with an estimate of the file size. Note that file sizes are proportionally larger with HD-720 and HD-1080 than with SD.

Animation

Possibilities for using vector graphic animations in ePubs are summarized in [Table 4.1](#). Vector graphic animations can be created for ePubs using InDesign, with its Buttons and Forms and Animation palettes. InDesign does not support HTML5 animations made with Tumult Hype, which is compatible with iBooks.

Animations can also be created using CSS via the `@keyframes` rule and associated objects. However CSS animations cannot be linked to control buttons. The animated object itself can serve

as a “button” using the “:hover” and “:active” pseudoselectors along with the “animation-play-state” style.

Animations can also be created with the jQuery JavaScript library’s “animate” and “draggable” functions, and these can be tied to buttons for user control. The jQuery libraries can be imported into ePubs using an editing program like Sigil.

Animations from Tumult Hype can be exported as Apple “Widgets” (file type .wdgt), then dragged-and-dropped into iBooks Author to appear in iBooks.

Table 4.1. Animation in eBooks

Animation type	User Interaction	eBook Formats
CSS @keyframes rule and connected ID/class	Hover or click states on objects (no buttons)	ePub RFL and FXL ePub from PressBooks
JavaScript jQuery library “animate” and “draggable” functions	Buttons, click/hover states	ePub RFL and FXL, iBook “widgets” with iAd Producer
Adobe InDesign (Buttons and Forms, Animation)	Buttons, click/hover states	ePub RFL and FXL
Tumult Hype	Buttons, click/hover states	iBooks “widgets”

Animation in CSS

Animation with CSS can be done with a named `@keyframes` rule connected to an HTML tag with the “animation-name” style. The `@keyframes` rule specifies, using “start” and “stop” points or percentage values, the change points of the tag in the course of the animation. In **Figure 4-2** a car image has been animated using an `@keyframes` rule named “letsgo” that is connected to the car image using the style, “animation-name: letsgo;.” Additional styles specify the “animation-duration” in seconds (“s”), “animation-fill-mode” (position upon completion, i.e., at the end or at the beginning), and “animation-timing-function” (“ease” means to start and end slowly).

The `@keyframes` rule specifies two keyframes, one at the start (“0%”) and one at the end (“100%”). Within the keyframes, the “left” position style is specified in pixels from the left of the browser window. For the “left” style to work, the tag must be set to “position: relative.”

The CSS animation function is documented on [W3Schools site](#) [\[New Window\]](#).

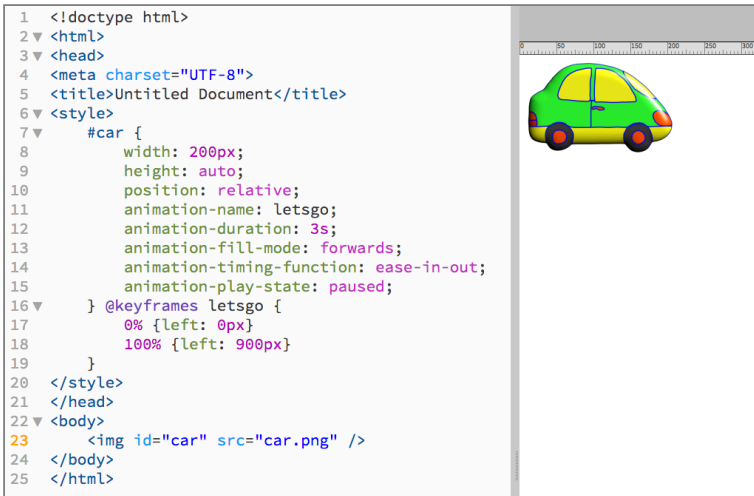


Figure 4-2. An example of animation created only with CSS using the `@keyframes` rule connected to the “car” image. (Car image courtesy of [pngtree.com](#).)

Animation created purely with CSS has limited user interaction/control, which could be introduced by linking the “animation-play-state” to a “:hover” or “:active” pseudoclass. To do so, the designer would write “#car:hover {animation-play-state: running;}”. The animation would then start when the reader positions the mouse over (or taps) the car. Using the “:active” pseudoclass would make the car move when clicked.

Another way to introduce user interaction into a CSS animation is to add a simple JavaScript button. The button would be written as shown in **Figure 4-3**. For this setup, the animation-play-state is set to “paused” and then changed to “running” with the button and code.

```
<button onClick="document.getElementById('car').style.webkitAnimationPlayState='running'">Start</button>

```

Figure 4-3. Code for a simple JavaScript button with statement to start the animation.

Animation with jQuery

jQuery is a curated library of JavaScript functions managed by the jQuery Foundation, which was started by a group of professors at the MIT Media Lab who wrote and contributed JavaScript functions to the library and offered it as an open-source resource to web and eBook developers. The jQuery code consists of a small JavaScript file that can be downloaded and hosted on the developer’s own web site, or linked-to as an external resource.

In this example (**Figure 4-4**), the “car” image was animated by connecting the “Start” button to the `` tag using the jQuery “animate” function. The button was assigned an ID of “button,” while that of the car image is “car.” The animation moves the car image an additional (“+=”) 850px to the right and takes 3,000 milliseconds (3 sec.) to complete.

```
15 ▼ <body>
16   <button id="button">Start</button>
17   
18 ▼ <script>
19 ▼   $('#button').click(function() {
20       $('#car').animate({left: '+=850px'}, 3000);|
21   });
22 </script>
23 </body>
```

Figure 4-4. Animation created with the jQuery JavaScript library.

Animation with InDesign

eBook creators using Adobe InDesign can create animations using InDesign's Animation palette (Window > Interactive > Animation, **Figure 4-5**). After an object is placed and selected, the Animation palette can be used to assign one of numerous animation presets, along with the triggering event, duration, number of repetitions, and ease functions. The animation's appearance can be previewed in the ePub Interactivity Preview palette (shown in Figure 4-4). Assigning a motion preset to an object gives it a motion guide (green line in the figure) that can be changed in length and curvature.

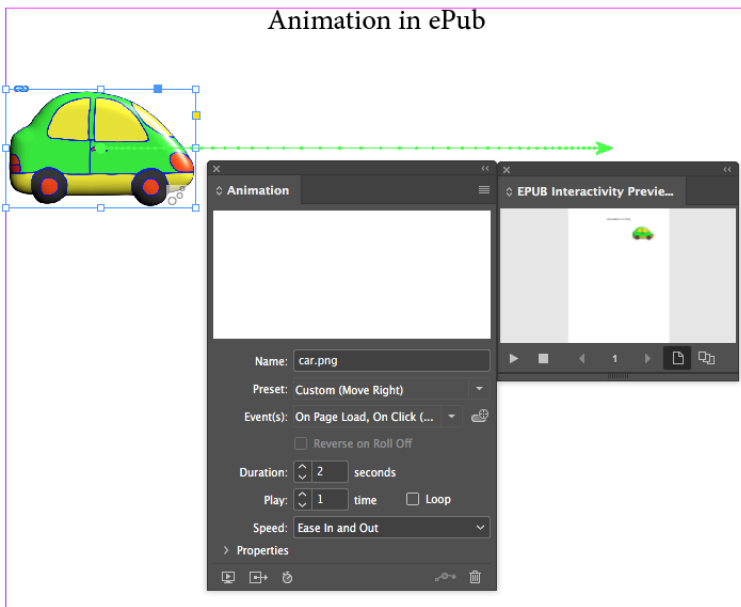


Figure 4-5. Animation in Adobe InDesign, created with the Animation palette and previewed with the EPUB Interactivity Preview palette.

Animation with an Animation Program

Several animation programs can be used to create animations in eBooks. These offer the possibility of creating more complex animations than some users may feel up to using CSS, JavaScript, and jQuery. An inexpensive and easy-to-use HTML5-based animation program is Tumult Hype (**Figure 4-6**). Hype animations can be exported directly as “widgets” for drag-and-drop placement in Apple iBooks. However the company advises that it’s still working on implementation for ePub3.

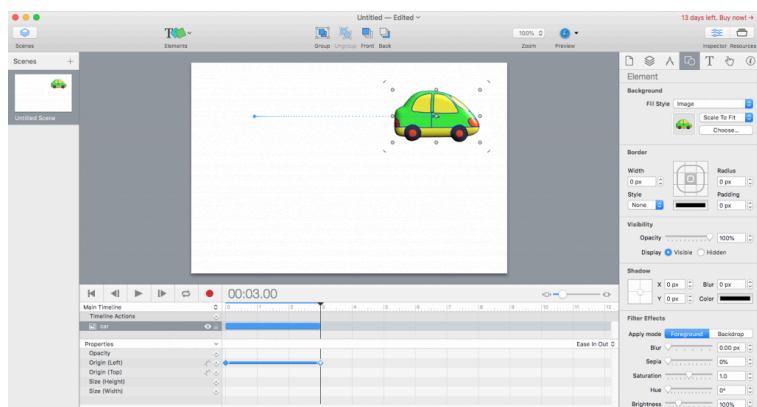


Figure 4-6. Animation with Tumult Hype, showing the timeline, layers, and motion guide.

Chapter 5 • Apple iBooks

RICHARD ADAMS

iBooks and iBooks Author

Apple iBooks (.ibooks) are a type of eBook developed with the iPad in mind, however they can also be read on an iPhone or Mac computer with the iBooks app.

iBooks are written with Apple's free MacOS program, iBooks Author, available in the App Store. The program has an interface similar to Pages. An iBook cannot be written on a Windows computer or with an iOS device.

Since iBooks are assumed to be read on an iPad (or an iPad-sized window on a Mac), they offer more certainty over page layout than with ePubs. Media can be easily inserted into iBooks by dragging and dropping. Some specialized media (panoramas and 360° views) must be created with the free iAd Producer app.

iAd Producer

iAd Producer is a free utility available from Apple's developer site (developer.apple.com) that can be used for producing complex interactive elements ("widgets") for iBooks. Widgets are automatically written in HTML, CSS, and JavaScript. iAd Producer project files (type .iadproj) can be exported as widgets (.wdgt), then drag-and-dropped to be placed in iBooks Author pages.

iAd Producer's interface includes an "Assets" panel for importing media (photos and video) and an "Objects" panel with numerous interactive objects into which the media can be placed.

Two of the most complex and interesting widgets are interactive panoramas and 360° objects, which are similar in structure. An interactive panorama requires at least 6 consecutive images of a scene that's centred on the photographer. Ideally two sets of photos are supplied, one at the iPad's native resolution (1024×768 pixels) and another at double this resolution (2048×1536 pixels) for Retina™ displays. Using iAd Producer and a panorama widget, the user places the photos in consecutive panels. When the panorama is exported to a widget and viewed on an iPad, the panorama can access the gyroscope to detect motion, and the scene will rotate in sync with the that the iPad is pointed toward. Thus the panorama widget would be useful as part of a tour book or building guide.

The panorama can include buttons or "hot spots" for objects in the scene, such as a statue. When the user clicks the button, the

widget will advance from the panorama page to a second page with a photo and information about the object.

The 360° widget shows an object that users can rotate by touching the iPad screen. This widget likewise requires two sets of preferably 8 or more photos of an object. Ideally the object should be placed on a turntable and rotated 360° for the 8 photos, or 45° between photos.

Users can include JavaScript, including the jQuery library, into iAd Producer widgets. jQuery would be useful for creating animations, including the “draggable” function that allows readers to click-and-drag an object around the stage.

Part 2 • Class Tutorials

Tutorial 1 • ePub from InDesign

RICHARD ADAMS

In this tutorial we will be creating a reflowable ePub from InDesign and viewing it in Apple Books. When creating your ePub keep in mind the “Six Caveats of ePub”:

Six Caveats of ePub

1. Keep it simple
2. Maximum of one picture and one caption per page
3. Everything must be inline
4. Style all text
5. Create cover as JPEG
6. Use a Table of Contents Style

What You will Need

1. text in .doc or .txt format, 500+ words
2. photo for full width of page, 144 ppi
3. photo for 1/4 page, 144 ppi

Create Document

1. Open a new InDesign document > 384×768 px portrait with Primary Text Frame. The page size does not really matter because eBooks have no pages, the “pages” are created by the eReader app. However 384×768px looks on a Mac monitor closely resembles the eBook’s appearance on an iPad.
2. Place the tutorial text into the document.
3. Define a picture box for the photos, then place photos on the Pasteboard, size as desired, and place inline with the text (cut and paste with the Text tool). Defining the picture box first avoids getting an unmanageably large image on the pasteboard. Object > Fitting > Fit Content Proportionally will fit the image into the picture box you defined. Then Object > Fitting > Fit Frame to Content will size the picture box to the proportionally-fit picture.
4. On export to ePub, InDesign will shrink images to less than full width. For full-width images, select Object > Object Export Options and set for ePub > Custom Width: 100%.

Paragraph Styles for ePub

Style	Used for	Settings
p	paragraph (body)	<ul style="list-style-type: none"> • Palatino Regular 14/Auto • 12pt space before • Keep first 2 and last 2 lines together • Export tagging: <p>
h1	heading 1	<ul style="list-style-type: none"> • Palatino Bold 18/Auto • 12pt space before • Choose colour • Export tagging: <h1>
img	images	<ul style="list-style-type: none"> • Palatino Regular, 12/Auto • 12pt space before, align center • Export tagging: <p>
caption	captions	<ul style="list-style-type: none"> • Palatino Italic, 10/Auto • Indent 24px left and right • Keep with previous • Export tagging: <p>

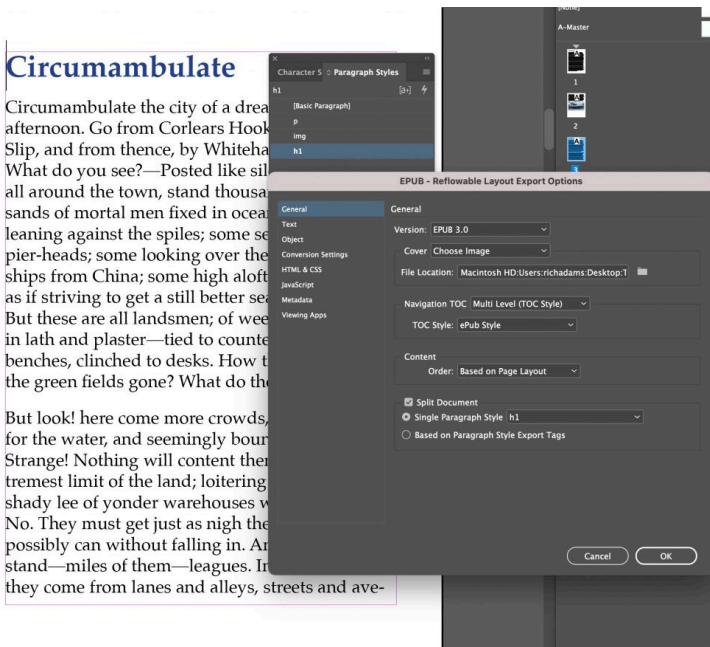
Create Table of Contents

4. Create a Layout > Table of Contents Style > and select h1 as the style to include.

5. Name the TOC Style something you will remember.

Export to ePub (Reflowable)

6. File > Export > ePub (Reflowable)
7. Choose EPUB3 format.
8. Select the cover image provided or make your own in JPEG format.
9. Select the TOC Style that you created.
10. Check Split Document and set to <h1> so each heading will start on a new page.

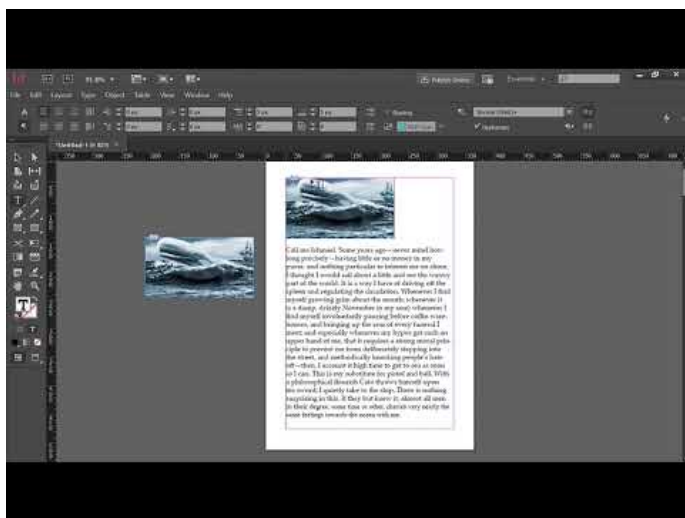


Split Document set to h1 starts headings on a new page.

Open in Books

10. Open the ePub in iBooks and see how the page layout, text, and photos compares with the InDesign document.

Instructional Video



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://pressbooks.library.ryerson.ca/ebooks/?p=167>

Tutorial 2 • Design for eBooks

RICHARD ADAMS; AKOS KATONA; BETTINA TABEL; AND
OKKE SCHLÜTER

User Experience Design (UXD) and “DesignAgility”

Thanks to Prof. Dr. Okke Schlüter, HdM-Stuttgart, for contributing to this section.

When designing eBooks, designers have to think about the purpose of the eBook, the audience, and the readers’ experience as they use it — a process commonly called “user experience design” (UXD). “DesignAgility,” a systematic approach to UXD for media, was created by Okke Schlüter from HdM-Stuttgart and Stefanie Quade (Quade, Stefanie, and Okke Schlüter, *DesignAgility—Toolbox Media Prototyping*. Amazon Kindle Direct Publishing, 2019). DesignAgility combines “design thinking” with “agile manufacturing.”

The first step in DesignAgility is to think of a challenge or problem that people want to solve. For an eBook, this could include questions like: What is the eBook’s purpose—to inform, persuade, entertain? What is the dominant media—text, photos, videos, animation? Who will the audience be, and what are their characteristics, interests, and possible challenges they may face in reading it?

The DesignAgility approach includes defining “personas,” who are a representative sampling of presumed readers, and their characteristics. The personas’ perception and use of an eBook can be expressed in “user stories.”

DesignAgility Step	What to Do
Discovery	Define the purpose of your eBook: <ul style="list-style-type: none">• inform, persuade, entertain?• dominant media—text, photos, videos, a
Interpretation	Define several “personas,” or presumed users, their interests, and any sensory challenges they
Ideation	Write “user stories” about why each person would use it, and how they will interact with it.
Specification	Sketch out some sample page layouts for your eBook: <ul style="list-style-type: none">• cover• first page of chapter• subsequent chapter pages
Implementation	Design the eBook
Evaluation	Design Critique <ul style="list-style-type: none">• show your design to another class member
Deployment	Publish the eBook and assess its impact

DesignAgility Example

Discovery. Define a challenge or problem that people want to solve. An author and designer want to write an informational eBook about cat breeds. The eBook will feature color photos of each breed, along with information about the breed, such as history, origin, characteristics, temperament, medical conditions, nutritional requirements, food preferences, and grooming needs. The photos and text are equally important. The designer wants the eBook to appeal to readers “from 6 to 106.”

Interpretation and Personas. “Granny Smith” is an 86-year-old grandmother who loves cats and reads everything she can find about them. She visits doctor’s offices and complains about the wait times. Her grandchildren bought her a low-cost B&W eReader with WiFi so she could read eBooks while waiting. Granny has some visual challenges, including presbyopia (needs reading glasses to see up close) and the beginnings of cataracts (cloudy vision).

“Junior Jones” is a 6-year-old boy who likewise developed a strong interest in cats. He has an iMac 21” computer and an iPad Mini that he uses to read eBooks at home and when traveling. Junior loves to see pictures of cats and could benefit from audio on the web site that could read the text to him.

Ideation and User Stories. In the “Cats” eBook, the pictures and text are equally important. The photos should look good in color and when rendered in black-and-white. The text should be high-contrast and enlargeable and be readable with a screen

reader or included audio. The pages should look good on both desktop computers and tablets.

Granny Smith likes to look at pictures of cats so the photos should look good in both color and B&W. The photos should be set up as links so that when Granny clicks or taps on an image, the link brings up a larger image. Being able to enlarge the type will make it easier for Granny to read.

Junior likewise enjoys seeing enlarge photos of the cats. As he learns to read, it's helpful for him to tap a button that reads the text to him.

Writing Your eBook Proposal

1. Think about a challenge that you could address with an eBook. What will be more important—text or photos? Describe how you will construct the eBook.
2. Define some personas of prospective readers and their characteristics.
3. Write a user story for each persona, describing what will interest them about your eBook and how they will interact with it.

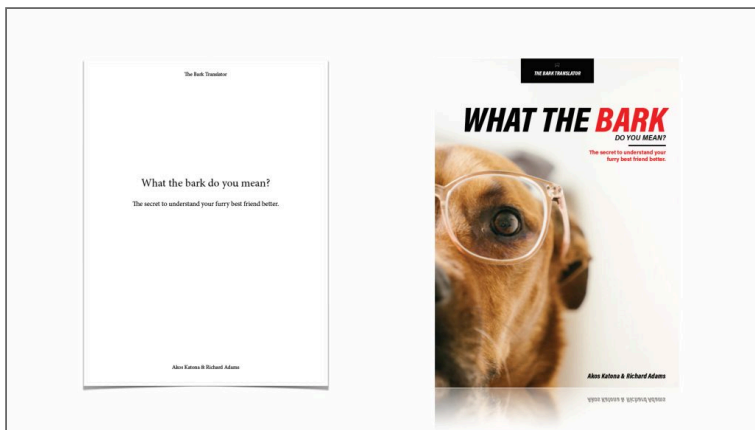
4. Draw a basic layout of your cover and one of the chapter title pages, including text, full-width photos, and part-width photos with text wrap.

Cover Design

Thanks to Akos Katona, FCAD Catalyst Research Hub, for contributing to this section.

The cover is so important for conveying the title, author, and other information about an eBook. Keep in mind that the title should be visible when viewed as a thumbnail in an eBook catalog.

This example shows how, as compared to simple text, an eye-catching cover design can enhance the eBook's appearance and also convey its message and improve sales.



These before-and-after book covers were created by designer Akos Katona for his guest lecture in Ryerson’s summer 2019 eBooks class. Note how the photo and type design increase in impact and legibility of the “after” cover. For his design, Akos chose a royalty-free image with enough white space to set the title type with good contrast.

Research

A key consideration for a cover is the tone of the eBook. For example the sample eBook cover for *What the Bark* above takes a humorous tone in looking at the psychology of dogs. A popular-market eBook about canine nutrition in health or a veterinary textbook about diseases and illnesses of dogs would take respectively more serious tones.

Designer Akos Katona recommends researching the topic of the eBook and compiling various photos and type faces into a “mood board,” a collage of related photos, fonts, and logos. The mood board can be a valuable tool in exploring the tone that the publisher wants the eBook to take. To compile resources he gets photos from [Unsplash](#) [[New Window](#)] or [Pixabay](#) [[New](#)

[Window](#)], fonts from Adobe Typekit and Google Fonts, and icons and vector artwork from The Noun Project and [Vecteezy](#) [\[New Window\]](#).

eBook cover requirements vary by publisher and platform and are constantly evolving as new devices become available. Monica Dube discussed various cover requirements in her January 2019 article, “[Complete Guide to Book Cover Sizes—Why Do They Matter?](#) [\[New Window\]](#)”

Cover Resolution Requirements	
Format	Resolution
ePub/Adobe InDesign*	1024×768px
Apple iBooks	2500px longest side
Amazon Kindle	1600px shortest side
Pressbooks	2500×3750px

*

author-recommended

Following are some recommended steps to design an eBook cover:

Procedure

1. Determine the size of cover you need in pixels, e.g., for Pressbooks it's 2500×3750 pixels.
2. Take a photo or choose a royalty-free image that expresses the theme of the eBook. The resolution

should be at that required by the eBook format, and the photo should have a lot of white or pale color at the top so the title type can be set with good contrast.

3. If the image could stand to be lighter, apply a Gradient Overlay gradient in Photoshop (Layers Palette > fx > Gradient Overlay, see below).
4. Import the image into Illustrator and name the layer Background.
5. Add another layer on top of the Background and call it Type.
6. Choose a royalty-free font (e.g., [Google Fonts \[New Window\]](#)) that conveys the theme of the book and is also easy to read in thumbnail size.
7. In Illustrator, pick up (measure) colors from the image using the Eyedropper tool, import into Color Themes, and add several related colors to your Swatches using a scheme of your choice (e.g., analogous, complimentary, triad, . . .). Use the colors to set the title, author, institution, and other information. (Details below.)
8. Make a triangle or other shape at the top or at the corner with the edition or series.
9. Export the book cover at the required resolution using the File > Export > Save for Web dialog box.

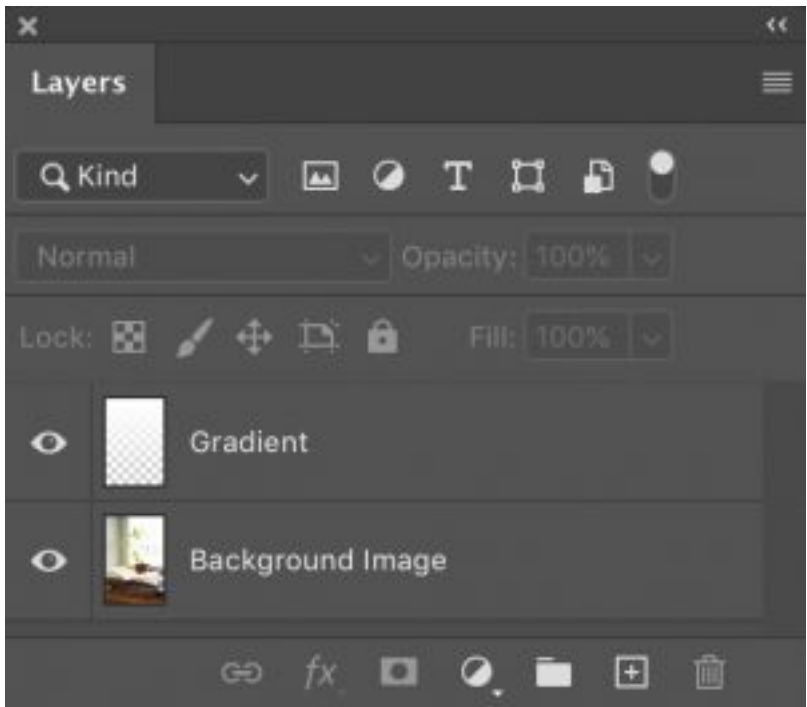
Photoshop

The following illustrations show how a stock image was prepared for use as a cover photo by applying a gradient in Photoshop to lighten the background, creating more contrast for the title. The original image was 3239×4315 pixels and was exported at 2500×3750 pixels for Pressbooks.



Cover image before application of gradient in Photoshop to lighten the upper part and make space for the title. (Photo by Fang Wei Lin on Unsplash.com.)

Cover p
allow fo

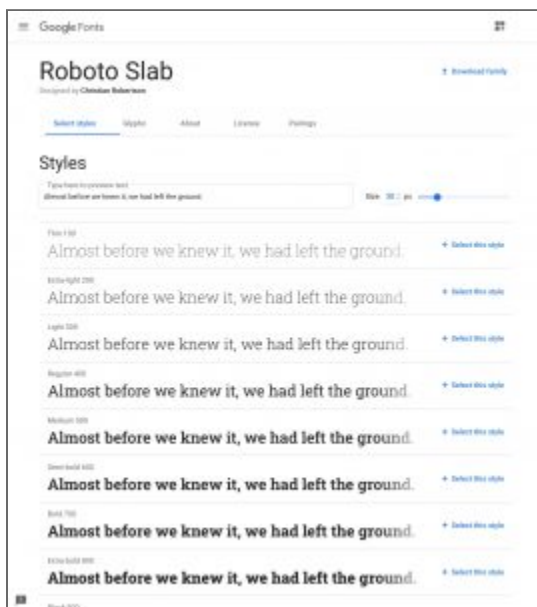


Photoshop Layers palette showing the original image (“Background Image”) and gradient from white to transparent.

Photosh
applied

Fonts

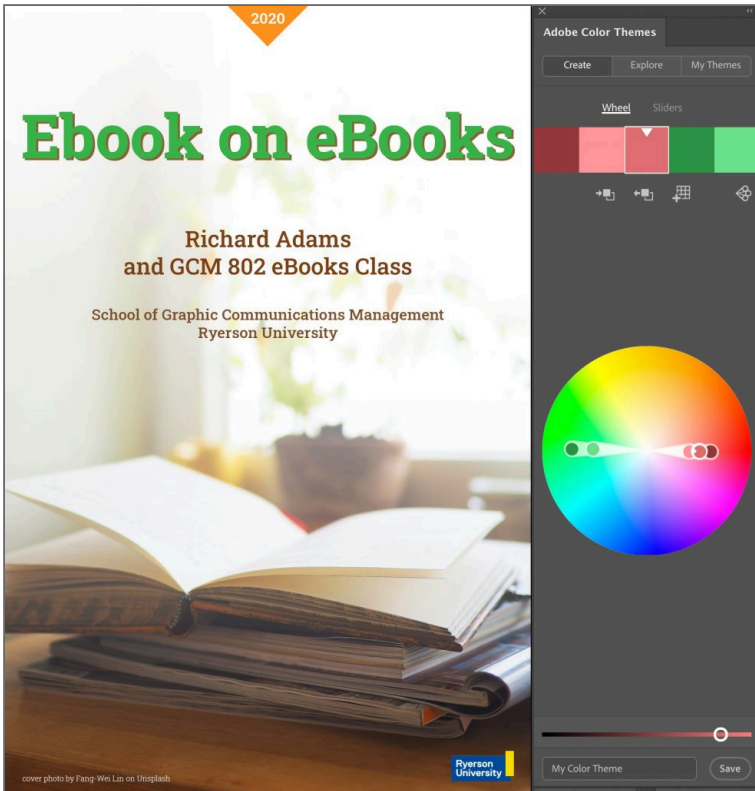
Google fonts (google.com/fonts) is a great source of royalty-free fronts to use on eBooks covers.



Screen capture of Google Fonts showing the Roboto Slab font used for the cover.

Illustrator

The edited cover image was placed in Adobe Illustrator and set as the background layer. The color of the orange bookmark was measured with the Eyedropper tool and imported into the Color Themes palette. The Complementary color scheme was selected and the green color was used for the title.



Finished cover and Complementary color theme in Illustrator

Organizing Files

Compiling multiple versions of photos, fonts, and logos will result in a collection of files that may be linked to page layout or illustration documents. To keep all these assets together and in one place, it's advisable to create a folder for each cover job.

Design Critique

Thanks to Prof. Bettina Tabel, HdM-Stuttgart, for contributing the idea of design critiques.

When designing a cover or eBook interior page, it can be useful to get a design critique from an objective third party. Following is a list of questions to consider:

Book Cover

1. What is the purpose of the eBook? Audience? Is this clear from the title and design?
2. From the title and cover photo (if any), are the subject and theme of the book clear?
3. Does the color scheme fit the target group and the subject? Should the color scheme be neutral, pastel, bright, complementary, analogous, or other theme?
4. Is the font selection appropriate to the eBook's title and audience?
5. Is the font legible (size, contrast)? Could it benefit from a drop shadow or complimentary-colored background?
6. If the cover has one or more photos, have the image rights been clarified?
7. Are photos sized appropriately to the cover and according to the publisher's or platform's requirements?

Interior Pages

1. Is the text legible—large enough to read, and with space between paragraphs?
2. Are headings distinct and separated from sections?
3. Do special effects (drop caps, callouts, sidebars) contribute to the theme of the book without being distracting?
4. Are photos large enough for readers to see detail? If the reader touches a photo, does it link to a larger version?
5. Are chapter and section separations clearly indicated?


moby-dick-design-lad

1
2
3

Call Me Ishmael

Call me Ishmael. Some years ago—never mind how long precisely—having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen and regulating the circulation. Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos get such an upper hand of me, that it requires a strong moral principle to prevent me from deliberately stepping into the street, and methodically knocking people's hats off—then, I account it high time to get to sea as soon as I can. This is my substitute for pistol and ball. With a philosophical flourish Cato throws himself upon his sword; I quietly take to the ship. There is nothing surprising in this. If they but knew it, almost all men in their degree, some time or other, cherish very nearly the same feelings towards the ocean with me.

Page 1

4


Manhattoes

There now is your insular city of the Manhattoes, belted round by wharves as Indian isles by coral reefs—commerce surrounds it with her surf. Right and left, the streets take you waterward. Its extreme downtown is the battery, where that noble mole is washed by waves, and cooled by breezes, which a few hours previous were out of sight of land. Look at the crowds of water-gazers there.

5

Circumambulate

Circumambulate the city of a dreamy Sabbath afternoon. Go from Corlears Hook to Coenties Slip, and from thence, by Whitehall, northward. What do you see?—Posted like silent sentinels all around the town, stand thousands upon thousands of mortal men fixed in ocean reveries. Some leaning against the spiles; some seated upon the pier-heads; some looking over the bulwarks of ships from China; some high aloft in the rigging, as if striving to get a still better seaward peep. But these are all landsmen; of week days pent up in lath and plaster—


Page 2

Example of a poorly designed content page

Problems with the example above:

1. Small heading and text size in default view
2. Insufficient separation between heading and text
3. Boring, overused Times Roman font—difficult to read
4. Photo should be set to 100% of page width to be easier to see
5. Insufficient separation between paragraphs

mobly-dick-design



Manhattoes

There now is your insular city of the Manhattoes, belted round by wharves as Indian isles by coral reefs—commerce surrounds it with her surf. Right and left, the streets take you waterward. Its extreme downtown is the battery, where that noble mole is washed by waves, and cooled by breezes, which a few hours previous

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Circumambulate

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Page 3
Page 4
1 page left in this chapter

Well designed content page

Instructional Video



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://pressbooks.library.ryerson.ca/ebooks/?p=279>

Tutorial 3 • Web-Based eBook

RICHARD ADAMS

A manually-created, web-based eBook may be a good solution for short books of, say, 6 pages or less. We will be using this web eBook to demonstrate HTML tags and CSS styles that are useful for creating special effects when editing the XHTML in eBooks.

Orientation to the Web Page

1. Open Dreamweaver or a free HTML editor, then open the HTML file for the web eBook. Note how the page has been designed with a fixed layout that looks like an 8.5×11" page.
2. If you're new to HTML, note the use of the tags to mark all the sections and text, including `<p>` paragraph, `<h1>` to `<h6>` headings, `` image, and `<div>` division for objects and grouping other tags.

3. Also note the `<style>` tag in the `<head>` of the document and how it is used to select specific tags and apply specific styles. Tags can be selected by their tag type or by labeling them with an ID (used once per page) or class (used multiple times in a page).

HTML Tags for ePub	
<code><p></code>	paragraph
<code><h1>...<h6></code>	heading 1 (largest) to heading 6 (smallest)
<code></code>	image, e.g., <code></code>
<code><figcaption></code>	caption

HTML Identifiers for CSS Styling		
Identifier	Example in HTML	Selector in CSS
tag, e.g., <code><p></code>	<code><p></code>	<code>p</code>
ID	<code><p id="first-para"></code>	<code>#first-para</code>
class	<code></code>	<code>.body-fig</code>

Styles for Text and Images*text**image*

font-family:

font-size:

width:

font-style:

height:

font-weight:

float:

line-height:

margin:

color:

Creative Styles

Let's apply some creative styles to the web eBook.

1. Decorative Title Font

Find a decorative Truetype font on google.com/fonts, such as the font “Rye” in the screen capture. Add the .ttf file to the web page folder and bring it into the page by adding an @font-face rule to the <style> statement:

```
@font-face {
    font-family: Rye;
    src: url("Rye-Regular.ttf");
}
```

In the style sheet, specify the font for the `<h1>` tag:

```
h1 {
    font-family: Rye;
}
```

2. Drop Cap

For the drop cap, enclose the first letter in a `` tag, then style the span so the letter is 3 times normal size (3em or 300%), float left, and put the required margin around it. You could also use a different font. If drop cap has too much space at the bottom, e.g., it's only 2 lines high but occupies 3 lines, you could move the third line up using negative margin.

```
span {
    font-size: 3em;
    float: left;
    margin: 0 6px -3px 0;
}
```

3. Image with Text Wrap

Place the image of the whale caricature into the page using the `` tag. Label the `` tag with a class, like ``, because you will want to style other images differently. Style the `.left-float` class to the width that you want and `float: left;`, then add margin to create space around the image. Other suitable image styles include border and box-shadow (the box-shadow style will be deleted if used in Pressbooks).

```
.left-float {
```

```
width: 512px;  
float: left;  
margin: 0 12px 6px 0;  
border: 1px solid dimgray;  
box-shadow: 3px 2px 6px gray;  
}
```

4. Full-Width Image

Place the drawing of the whale into one column. Set width to occupy the whole column. You can also add a border and a drop shadow (text-shadow) to the image.

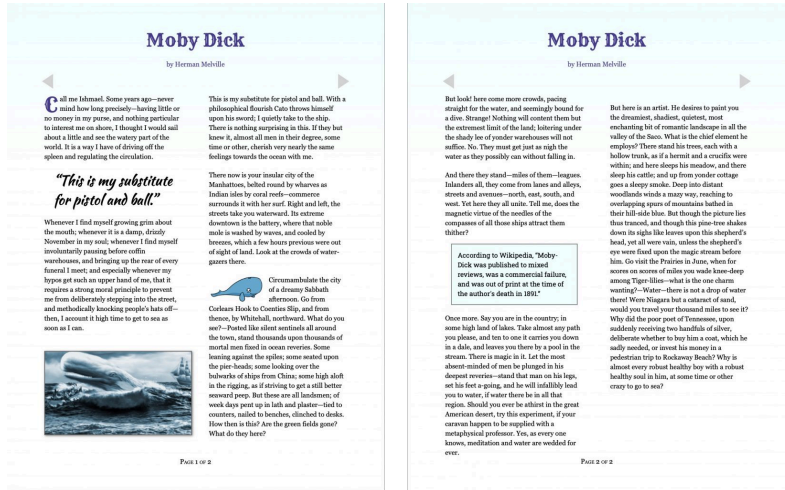
5. Callout or Pull Quote

A callout or pull quote is a sentence or phrase from the text that's set in larger type. It breaks up the text and calls attention to phrase in question. To create a callout, enclose the text in `` or `<div>` tags, or in a `<p>` paragraph with a unique ID or class, set to the width of the column, and specify font-family and font-size. Use margin and padding to make space around and text inset.

In the sample callout and sidebars shown in the Moby Dick web-based eBook, the columns are 396px wide so the callout and sidebar paragraphs were set to 324px. The paragraph was centered in the column with the style “margin: 0 auto;” and font size, background, and border were also specified.

6. Sidebar

A sidebar presents short information that's an aside to the main story. It also breaks up the text and adds interest. Set up similar to a callout or pull quote.



Example of a [2-page web-based eBook](#) with special effects.

```
<div id="page">
#page {
width: 1024px;
height: 1325px;
}
```

```
<div id="text">
#text {
width: 820px;
height: 984px;
}
```



Page structure of the web-based eBook, showing the div element “page” that creates the page and the div element “text” for the text.



XHTML tags and CSS code for the drop-cap, callout, full-width image, and image with text wrap.

Moby Dick

by Herman Melville

But look! here come more crowds, pacing straight for the water, and seemingly hoveled for a dive. Stranger! nothing will content them but the extreme limit of the land, lurking under the shadowy lee of yonder warehouses will not suffice. No. They must get just as nigh the water as they possibly can without falling in.

And there they stand—miles of them—huguenots, Indians all. They come from lanes and alleys, streets and avenues—north, east, south, and west. Yet here they all unite. Tell me, does the magnetic virtue of the needles of the compasses of all those ships attract them thither?

According to Wikipedia, "Moby-Dick was published to mixed reviews, was a commercial failure, and was out of print at the time of the author's death in 1891."

Once more. Say you are in the country; in some high land of lakes. Take almost any path you please, and on to some it carries you down in a dale, and leaves you there by a pool in the stream. There is magic in it. Let the most absent-minded of men be plunged in his deepest reverie—stand that man on his legs, set his foot a-going, and he will infallibly lead you to water, if water there be in all that region. Should you ever be edified in the great American desert, try this experiment, if your caravan happens to be supplied with a metaphysical professor. Yes, as every one knows, meditation and water are wedded for

ever.

But here is an artist. He desires to paint you the dreamiest, shallowest, quietest, most exclusive bit of romantic landscape in all the valley of the Sun. What is the chief element he employs? There stand his trees, each with a hollow trunk, as if a hermit and a crucible were within; and here drops his mandow, and there sleep his cattle; and up from yonder cottage goes a deep smoke. Deep into distant woodlands winds a mazy way, reaching to overlapping spurs of mountains half-died in their hill-side blue. But though the picture lies thus traced, and though this pine-tree shakes down its riggs like leaves upon this shepherd's head, yet all were vain, unless the shepherd's eye were fixed upon the magic stream before him. Go visit the Prairie in June, when far scores on scores of miles you wade knee-deep among Tiger lilies—what is the one dream waiting?—Water—there is not a drop of water there! Were Niagara but a curtain of sand, would you travel your thousand miles to see it? Why did the poor poet of Tennesse, upon suddenly receiving two handfuls of silver, deliberate whether to buy him a coat, which he sadly needed, or invest his money in a pedestrian trip to Rockaway Beach? Why is almost every robust healthy boy with a robust healthy soul in him, at some time or other crazy to go to sea?

```
<span class="sidebar">
.sidebar {
  font-family: 'Roboto Slab';
  width: 324px;
  margin: 16px auto;
  padding: 16px;
  background: azure;
  border: 1px solid gray;
}
```

Page 2 of 2

Page 2 of the web eBook with code for the sidebar.

Instructional Video



A YouTube element has been excluded from this version of the text. You can view it online here: <https://pressbooks.library.ryerson.ca/ebooks/?p=244>

Tutorial 4 • Adding Special Effects with HTML/CSS and Sigil

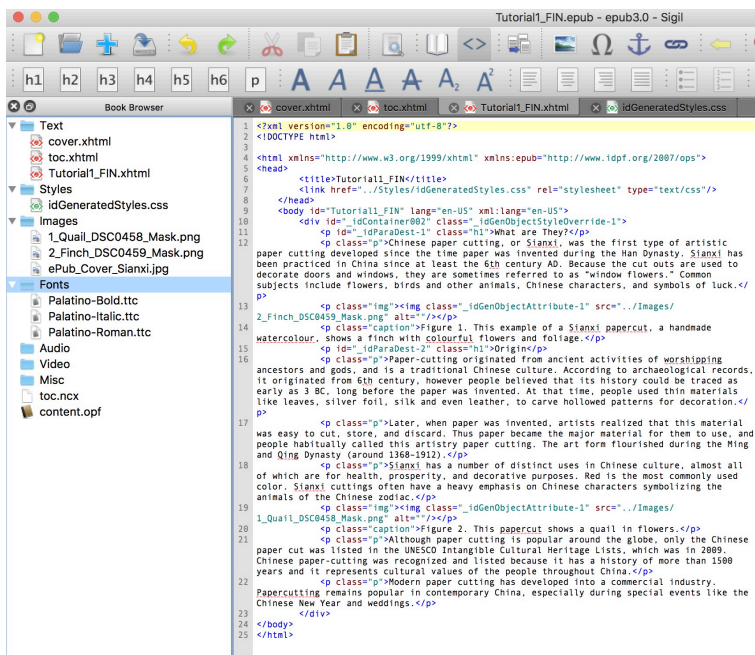
RICHARD ADAMS

Sigil (<https://sigil-ebook.com>) is a free, open-source app for editing eBooks that was developed by Google. An eBook is actually a compressed file with separate folders for its contents. The compressed file can be opened, edited, and saved using Sigil.

Open eBook in Sigil

1. Copy the eBook file that you created in Tutorial 1.
2. Launch Sigil and open the .epub file.
3. Note the structure of the eBook file:
 - Separate folders contain the HTML files, CSS, images, fonts, and media.

- The text is identified with HTML tags, classes, and IDs.



Epub opened in Sigil to show file structure and use of HTML tags and CSS styles.

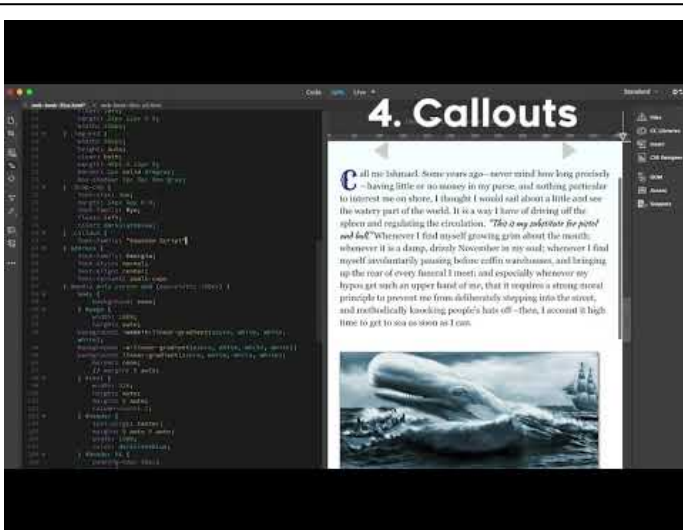
Style the ePub

1. Using your knowledge of HTML and CSS to identify objects, apply some innovative styles to the ePub, e.g.:
 - Create a text wrap by adding a “float” style to the image.
 - Create a dropcap on the first paragraph using the

p::first-letter selector.

Save your styled ePub and open in iBooks. Compare its appearance with the original.

Instructional Video



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://pressbooks.library.ryerson.ca/ebooks/?p=196>

Tutorial 5 • ePub from PressBooks

RICHARD ADAMS

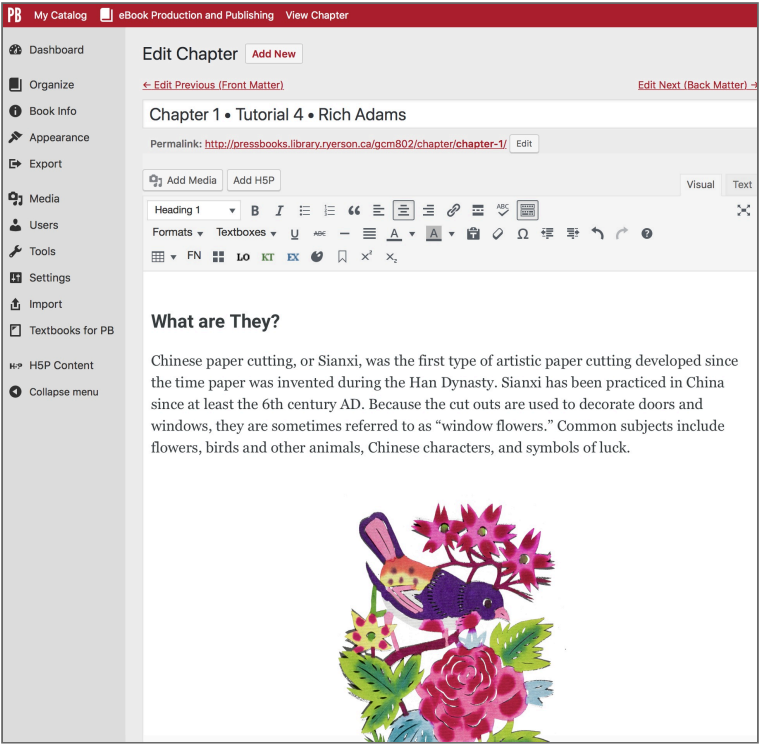
PressBooks (<https://pressbooks.com>) is an authoring platform that can export eBooks in PDF, EPUB, and MOBI (Amazon) formats. PressBooks is a plugin for the WordPress content-management and web site development system. The Ryerson Library maintains a PressBooks installation at <http://pressbooks.library.ryerson.ca>. WordPress and PressBooks both enable users to write content in “Visual” (preview) and “Text” (HTML code) views, switchable with tabs at the top right of the document. Users can also upload images, videos, and audio for insertion into an eBook.

Log In

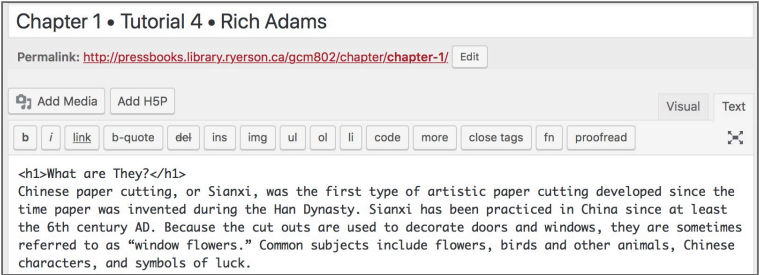
1. Log in to <http://pressbooks.library.ryerson.ca>.
2. Create your own chapter in the GCM802 book.

Create an eBook

1. Paste the text from Tutorial 1 into the Visual tab of your chapter.
2. Style the body text as Paragraph and headings as Heading 1.
3. Upload the photos using the Add Media button. Note that you can center them and add a caption in the Edit dialog box.
4. Note that you can switch to the Text tab and see the HTML code that PressBooks has applied to your text and images.



Screen capture of PressBooks in Visual view.



Screen capture of PressBooks in Text view. Note the h1 heading tag that was applied to the heading.

Export to .epub

1. When finished editing your eBook, go to the Export tab and export .epub.
2. Open the ePub in iBooks and check its appearance.



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://pressbooks.library.ryerson.ca/ebooks/?p=203>

Tutorial 6 • Apple Pages, Amazon Kindle Create, and Adobe PDF

RICHARD ADAMS

Apple Pages

As eBooks gained popularity in 2010, Apple took advantage of the iPad's color display and processing power by releasing an eBook format called iBooks and creating the iBooks Store. An authoring program, iBooks Author, adapted from Pages, made it easy for authors to include sophisticated media—including photo galleries, panoramic views, 3D objects, animations, and videos. iBooks Author saved files as type .iba (iBooks Author) and exported to the .ibooks format, a type of ePub with additional proprietary coding. The market for sophisticated media in eBooks was not as great as Apple had thought, so ten

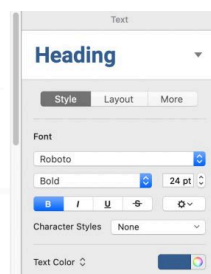
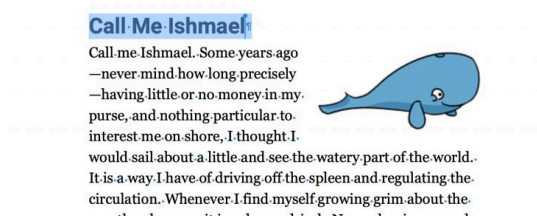
years later they discontinued support of iBooks Author and the iBooks format. Today Pages exports to ePub but does not have InDesign's sophisticated controls for image size and placement.

Making an ePub in Apple Pages

Apple Pages can be used to make both reflowable and fixed-layout eBooks. The program supports a variety of media, including photos, audio, video, and embedded video. As of the 2021 version, it no longer supports animation or 3D objects. Hopefully Apple will update Pages to include the variety of media supported by iBooks author, including 3D objects in .dae (Google Collada) format, image galleries, panoramic views, and 360° views of rotatable objects.

- a. Save your text in a Word .doc or .docx file and open in Pages.
- b. Create the cover in Illustrator, Photoshop, or InDesign and save as JPEG.
- c. Use the Body style for text, Heading for headings, and choose font, font size, and font color as desired, and update the styles.
- d. To set up a table of contents, go to View > Table of Contents > Edit and select the heading style(s) to be included.
- e. Drag-and-drop text-wrapped images into the text, set size, and in the Format panel select Arrange and choose the type of text wrap and spacing. Note that images can be

- anchored to the text or to the page.
- f. Drag-and-drop full-width images into the text, set to the width of the margins.
 - g. Export to ePub by selecting File > Export To > EPUB, choose the cover image, select Reflowable or Fixed-Layout, and click Advanced Options > Use Table of Contents.
 - h. View your ePub in iBooks or other program.



Styles palette in Pages

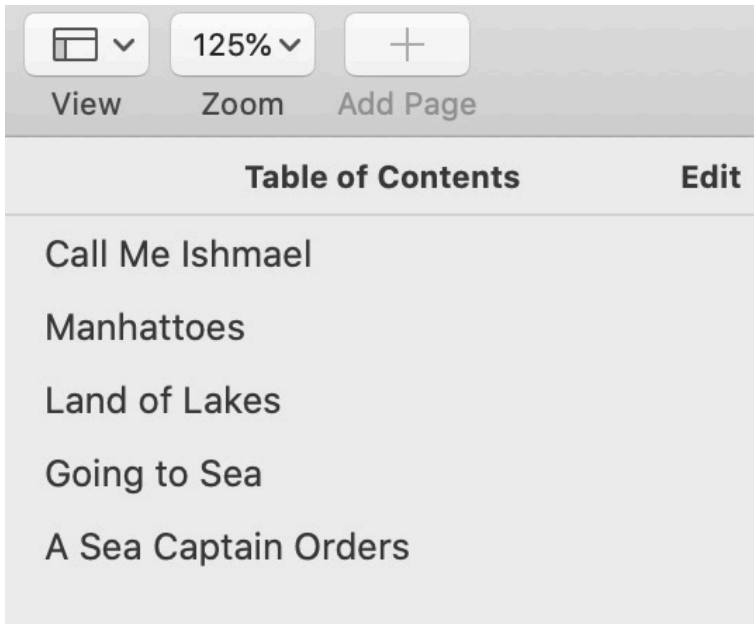
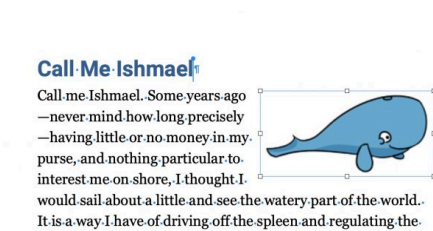
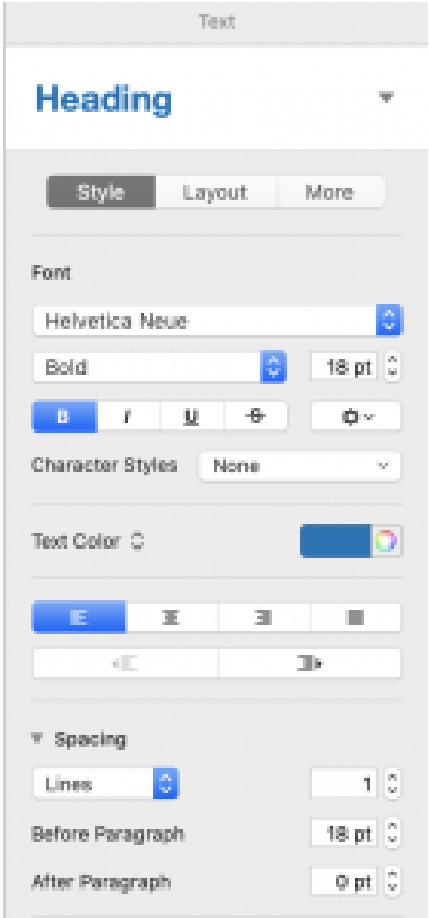


Table of Contents palette in Pages

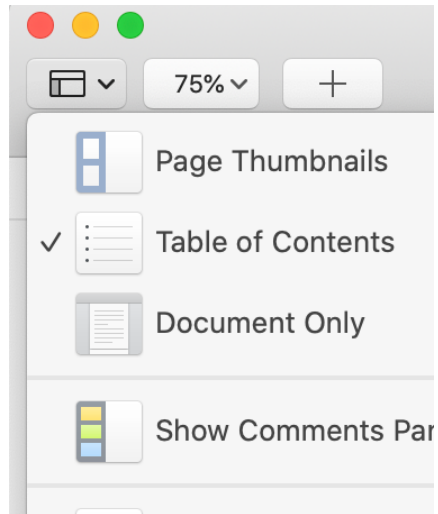


Arrange Image palette in Pages

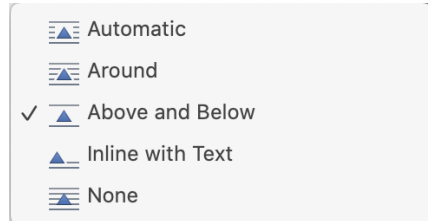
Design Features in Pages		
Feature	Description	Screen cap
Headings	Define text with the Heading ¶ style, redefine font, size, and color as desired	

TOC

View > TOC,
click Edit to
add ¶ Styles,
check TOC on
export

**Full-width image**

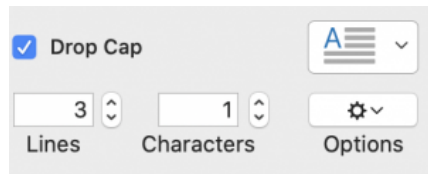
Drag-and-drop
image into
text, set width
to margins,
add border if
desired, set
Arrange to
Above and
Below

**Text-wrap image**

Drag-and-drop
image into
text, set width,
set Arrange to
Around. Note:
Text can wrap
to transparent
PNGs.

Drop-cap

Set Style >
Check Drop
Cap, define
lines, color,
background
shape if
desired.



Ornament	Create ¶ Style for ornament, centered, ornament font, larger font size
Sidebar	Set font, size, left and right indent, border, offset ("padding")
Callout	Similar to Sidebar but usually without border

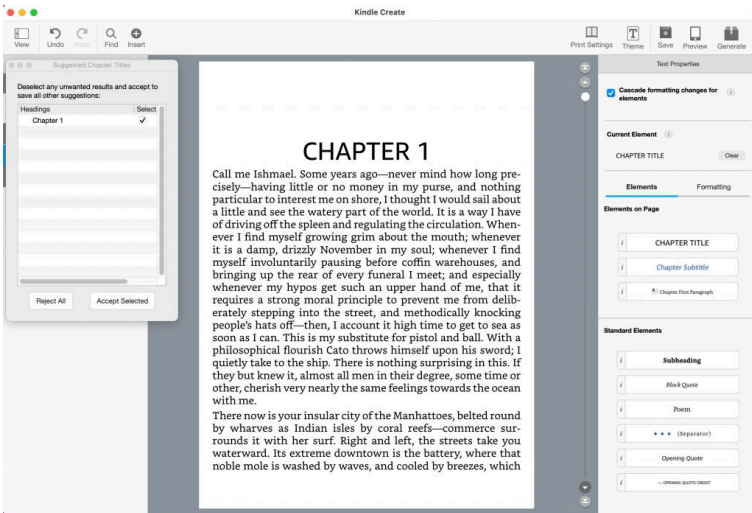
Amazon Kindle and Kindle Create

Its dominating market share has allowed Amazon to take advantage of the eBooks market. The Amazon Kindle is a series of low-cost eBook readers that support Amazon's Kindle Package Format (.kpf), along with .epub, .mobi, .pdf, and .html. Amazon's eBooks are sold in Kindle package format (.kpf). Epub and other eBook formats can be converted to .kpf using online conversion sites, or preferably by writing the eBook in Amazon's Kindle Create app (Mac/Win).

Kindle Create

Kindle Create is a simple page layout program for creating Kindle Publishing Format (.kpf) files. KPF files can be read on Amazon Kindle devices and on iOS/Android and Mac/Windows with the Kindle App. Kindle Create has limited text and image

formatting controls that coincide with the relative simplicity of the Kindle eReaders.



Page in Amazon Kindle Create, Amazon’s page layout program for creating Kindle eBooks.

Making a Kindle File in Kindle Create

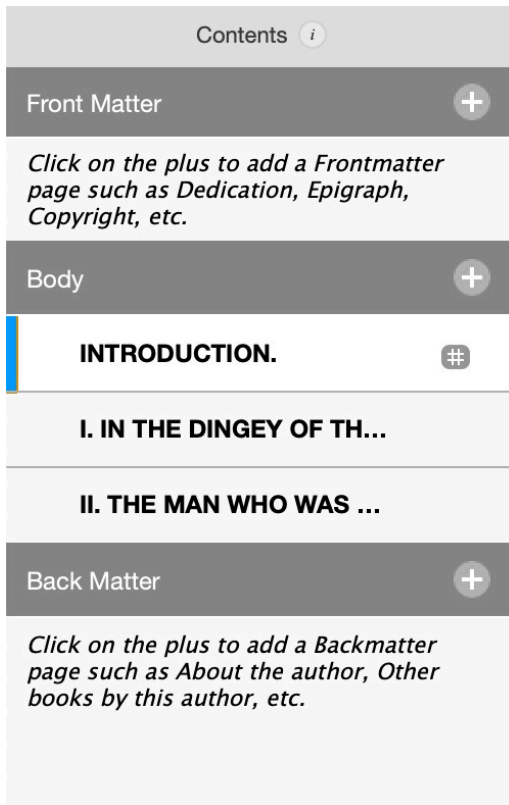
1. Download Kindle Create (Mac/Win, search for “download amazon kindle create”).
2. Place the text you want to set in Word, e.g., copy 2–3 chapters of a classic book from The Gutenberg Project. (Be sure to avoid text with paragraph returns at the end of each line.)
3. Open Kindle Create and select Create New > Choose File (.doc, docx) > browse to the Word document and open.
4. Note that Kindle Create has relatively few formatting

options: Theme and Elements on Page (Chapter Title, Chapter Subtitle, Chapter First Paragraph). Chapter First Paragraph has the option to add a drop-cap. Several other Standard Elements are available in the menu.

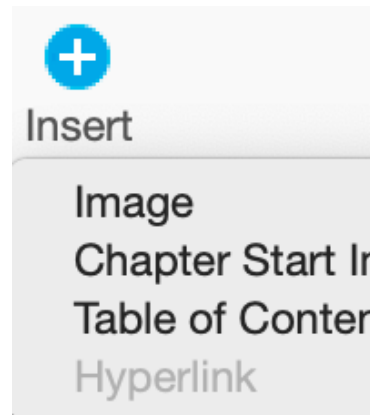
5. Set the chapter titles as Elements on Page > CHAPTER TITLE.
6. In the Table of Contents palette at left, add the chapter titles to the table of contents.

Adding Images

1. With the Insert menu at left, Kindle Create can add two types of images:
 - Chapter Start Image—a banner across the top of the title page
 - Image—includes full-width images, or fractional width that can be inline or with text wrap. Images can be set to small, medium, large, or full size.
2. Captions cannot be written in Kindle Create.



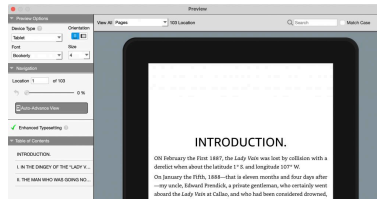
Kindle Create Table of Contents.



Kindle Create Insert Image. Chapter Start Image inserts a banner image across the top of the first page.

Preview

1. While formatting your text and image, you can preview how the eBook will look on a Kindle (B&W or color) using the Preview button.



Adobe PDF

Adobe's Portable Document Format (PDF) is the result of Adobe cofounder Dr. John Warnock's idea of creating a document format that anyone could create and read, independent of the platform, fonts, and software used to create it. PDF is a non-reflowable format that transitions from print layouts to electronic media. Interactive PDFs can contain interactive tables of contents, indexes, navigation buttons, and forms. Common uses of

The Invisible Man

The stranger came early in February, one wintry day, through a biting wind and a driving snow, the last snowfall of the year, over the down, walking from Bramblehurst railway station, and carrying a little black portmanteau in his thickly gloved hand. He was wrapped up from head to foot, and the brim of his soft felt hat hid every inch of his face but the shiny tip of his nose; the snow had piled itself against his shoulders and chest, and added a white crest to the burden he carried. He staggered into the "Coach and Horses" more dead than alive, and flung his portmanteau down. "A fire," he cried, "in the name of human charity! A room and a fire!" He stamped and shook the snow from off himself in the bar, and followed Mrs. Hall into her guest parlour to strike his bargain. And with that much introduction, that and a couple of sovereigns flung upon the table, he took up his quarters in the inn.

page 2

Sample interactive PDF with navigation buttons (bottom right) for previous page, home (first page), and next page.

PDFs are instruction manuals, user guides, and other

documentation. These may have been created originally for print layouts to enclose in packages, and the manufacturer also wants to include them on its web site.

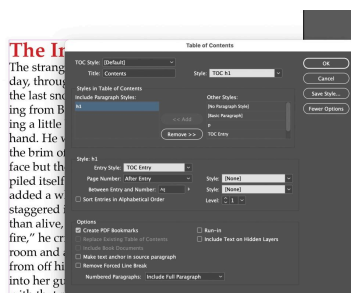
Features of Interactive PDF eBooks

Two useful features of interactive PDFs are interactive tables of contents (TOC) and navigation buttons. When users click on interactive TOC entries, they are taken to the page with the respective title. Navigation buttons usually include next page, previous page, and first page, and could also include buttons for the TOC and index.

Creating an Interactive TOC

1. To create an interactive TOC, headings to be included should be in a heading paragraph style, e.g., h1.

Making an interactive table of contents for a PDF.

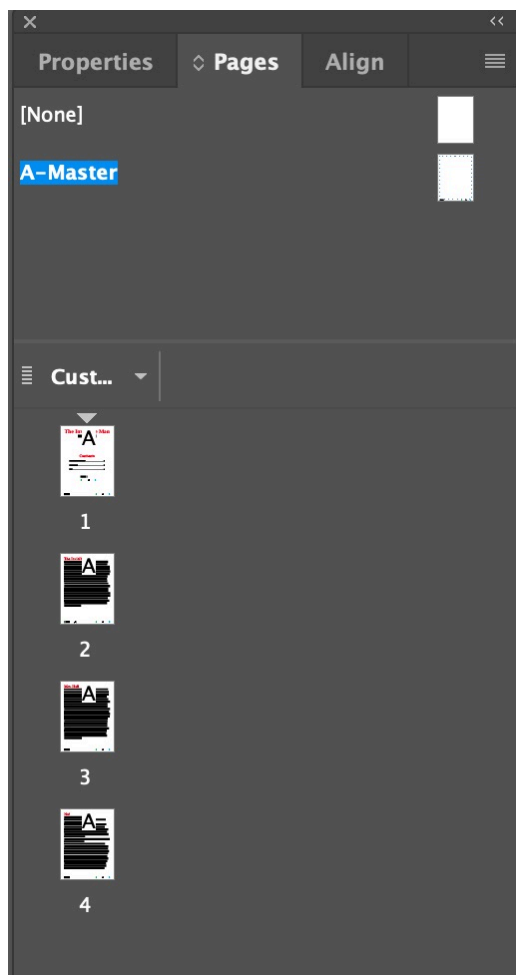


2. Open the Layout > Table of Contents and designate h1 to be included in the TOC.
3. Check “Create PDF Bookmarks”
4. Click OK to create a TOC and place it in the Clipboard. The TOC will include all text in the h1 style and the page on which it occurs.
5. Click on the page where you want to start the TOC.

6. When the InDesign document is exported to PDF, the TOC entries will become links that users can click and navigate to the respective page.

Creating Navigation Buttons

1. Navigation buttons placed on the master page will be copied to subsidiary pages. To create navigation buttons going to the next page, previous page, and home, first draw or place an icon, such as a forward arrow, on the master page. Items on the master page will be copied to all subsidiary pages. (To delete an unwanted master page item from a page, CMD+SHIFT+click on the item and then press Delete.)
2. Open the Window > Interactive > Buttons and Forms palette. Click on the forward arrow icon and select Type: Button; Name: (name the button); Event: On Release or Tap; and add an Action “Go to Next Page.”
3. Other actions include Previous Page, First Page, Destination, etc.



Interactive navigation buttons placed on the master page (“A-Master”) will be copied to subsidiary pages, which saves placing the buttons on each page and programming them.

Go To Destination
 Go To First Page
 Go To Last Page
 Go To Next Page
 Go To Previous Page
 Go To URL
 Show/Hide Buttons and
 Sound
 Video
 EPUB Only
 Animation
 Go To Page
 Go To State
 Go To Next State
 Go To Previous State
 PDF Only
 Clear Form
 Go To Next View
 Go To Previous View
 Open File
 Print Form
 Submit Form
 View Zoom

InDesign actions for buttons.

Tutorial 7 • Animation

RICHARD ADAMS

Animation in eBooks generally refers to vector graphics, with their small file sizes and scalability. These can add interactivity to an eBook, provided they are not overdone to the point of being distracting. Animation is most appropriate for colour eBooks (i.e., ePub and iBooks) that are designed to read on colour tablets.

eBook animations generally include three types, i.e., you want to:

- make an object, like a vehicle graphic, move when the page loads, when touched, or when a button is pressed
- make a graphic, such as an animal or object, jiggle or shake when pressed
- illustrate a complex mechanical movement, such as

for a technical book

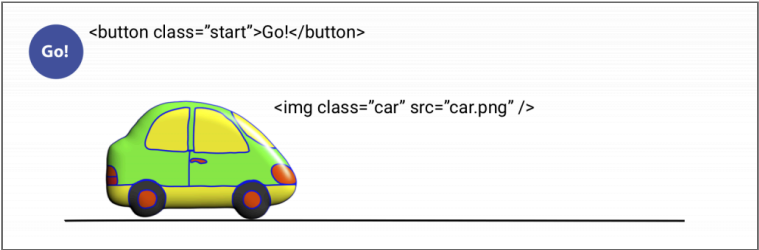


Diagram showing HTML tags for a sample animation done with CSS and JavaScript

	Animation Type			
Document	<i>InDesign</i>	<i>Hype</i>	<i>jQuery</i>	<i>CSS</i>
ePub FXL	?	N/C	?	?
Mobi	N/C	N/C	N/C	N/C
iBooks	N/C	? easy	? difficult	? difficult

N/C = not compatible

CSS

CSS animation is simple to implement but can only animate the object in question, like the car above. If you want to have a button start the animation or otherwise have user control, you would have to use JavaScript to connect the button with

the object. For CSS animation the object must have position: absolute; or position: relative;. You can control the left and top coordinates, along with other styles like size (width, height), color, opacity, and rotation.

To make a CSS animation you will need (1) a named `@keyframes` rule specifying the change points in the animation as percents of the timeline, and (2) a tag, ID, or class connecting to the `@keyframes` rule with the “animation-name” style, “animation-duration” in seconds (s), and other styles.

Users can start a CSS animation by touching or clicking on it if the “animation-play-state” is set to “paused” by default and set to “running” using a `:hover` or `:active` pseudoselector.

CSS Styles for Animations	
rotate	transform: rotate(0deg);
flip horizontal	transform: scale(-1);

```
.car {
    animation-name: letsgo;
    animation-duration: 3s;
    animation-fill-mode: forwards;
    animation-iteration-count: 1;
    position: absolute;
```

```

} @keyframes letsgo {
    0% {left: 100px;}
    100% {left: 700px;}
}

```

jQuery

The best way to implement user interaction in an animation is to use jQuery, an opensource library of JavaScript functions that was started by a group of MIT computer scientists. To use jQuery you have to load the jQuery library (jquery-3.3.1.min.js) and the jQuery user interface (UI, jquery-ui.js). jQuery uses the class assigned to the button and the object to link the two. jQuery is somewhat technical but is supported by ePub.

```

$(function() {
    $('start').click(function() {
        $('car').animate({left: '+=1200px'}, 1000);
    });
});

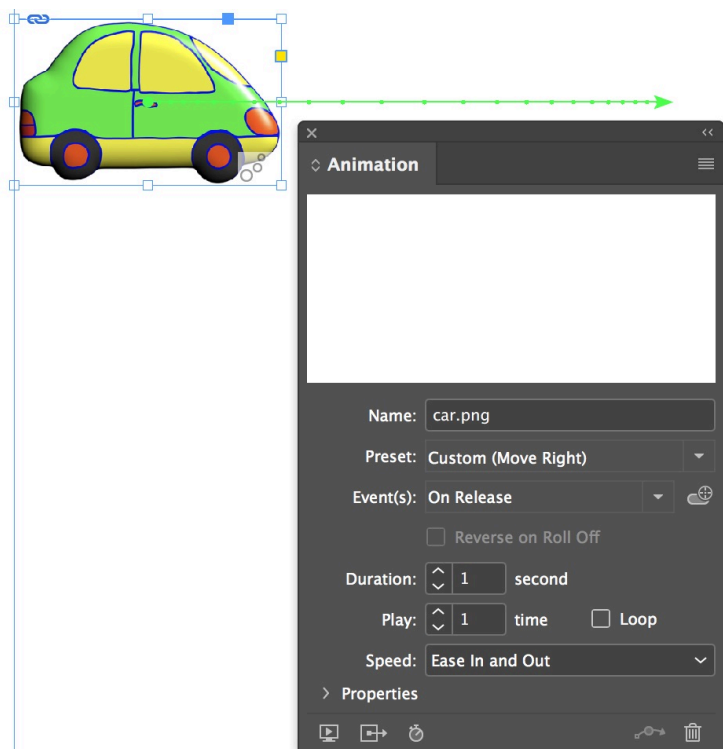
```

In this example, we are animating the left coordinate of the “car” class by adding 1200px to the current value, which moves it off the screen, and doing the animation in 1000 microsec., or 1 sec.

The animation is triggered when the user clicks the button, class ‘start.’

InDesign

InDesign animations can be created using the Window > Interactive > Buttons and > Animation panels:

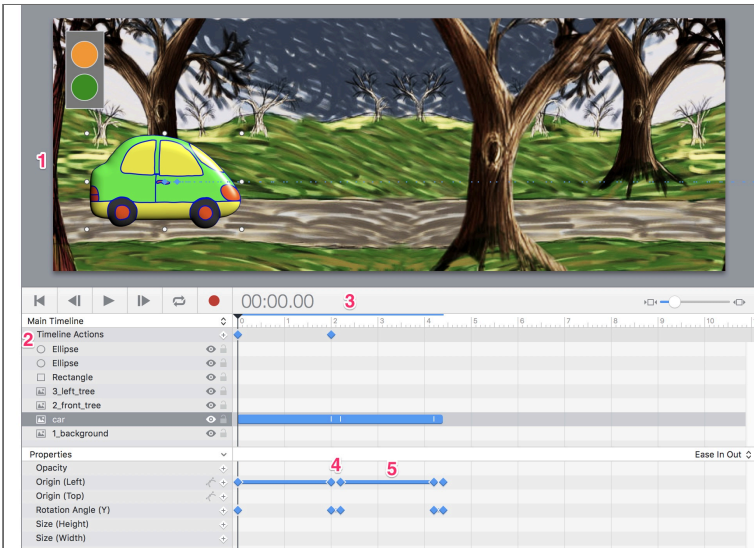


1. Use the Interactive > Animation panel to animate the “car.png” graphic to “Move Right,” then adjust the distance using the green motion guide.

2. Use the Interactive > Animation panel to animate the “car.png” graphic to “Move Right,” then adjust the distance using the green motion guide.

Tumult Hype

Tumult Hype (www.tumult.com/hype) is a vector-graphic animation program for MacOS similar to Adobe's Flash and Animate. Hype has an easy-to-use interface and simple procedure for placing an animation into a web page or iBook. The publisher offers a fully functional demo for 14 days.



Screen capture of an animation in Tumult Hype. (Car from pngtree.com.)

Components in Tumult Hype

Component	Function
1 stage	document or pasteboard for the animation
2 layers and properties	each object goes on a separate layer and is affected by CSS properties in the list
3 timeline with playhead	controls timing of the animation
4 keyframes	main points of change in the animation
5 tweens	transitions between keyframes

New Document

1. Make a new document in Hype. Set the stage size to the width and height of the background image (864324px).
2. Drag-and-drop the background image onto the stage.
3. Drag-and-drop the car image onto the “road,” size appropriately, and place at the left edge of the scene.
4. With the Elements, draw a rectangle with coloured circles that will be made into buttons.

Animation

1. The animation sequence in Hype is: timeline > keyframe > position. To animate the car, first select it. Put the Play Head at 00:00.00 sec. and place a Keyframe for the Origin (Left) Property at that point.
2. Move the timeline to 2 sec. (or the length of time you want the car to take to get off the screen) and place another Keyframe > Origin (Left) at that time.
3. Move the car to the right, off the stage.
4. Play the animation in Hype to see how it works.

Buttons

1. To give users control over the animation, select the green circle that you drew. In the Actions Inspector at right (hand symbol), click on On Mouse Up (Touch End) > Action > Continue Timeline.
2. To keep the animation from starting by itself, bring the Play Head to the 00:00.00 position. Set Timeline Actions > Action > Pause Timeline.
3. To test your animation, click the Preview button, which will open it in the browser of your choice. Check that the button works and that the animation plays as expected.

Additional Steps

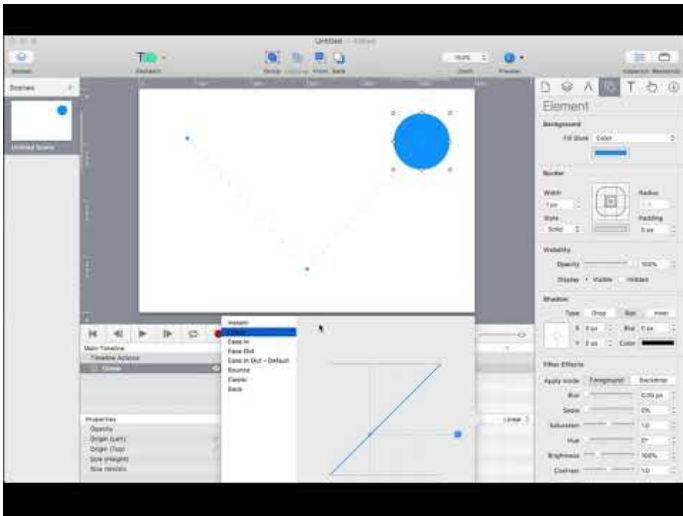
1. To make the car turn around at the end of the animation, add a Keyframe for Rotation Angle (Y) and set to 180°.
2. Add another Timeline Action > Pause Keyframe to make the animation stop before the car turns around.
3. Add more seconds to the timeline to make the car drive back to the starting point and turn around again.
4. Program a second button to bring the car back.

Export Animation

A Hype animation can be placed into an Apple iBook by exporting to Apple Widget (.wdgt) format. Just drag-and-drop the .wdgt file into iBooks Author.

The animation can be placed into a fixed-layout ePub by exporting as Animated GIF, however this format offers no user control.

Instructional Video



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://pressbooks.library.ryerson.ca/ebooks/?p=217>

Tutorial 8 • Video Editing with iMovie

RICHARD ADAMS

iMovie is a free editing program for Mac OS and is available on the App Store. The program provides an easy-to-use interface for editing videos—deleting parts of the video, adding titles and transitions, deleting audio, and adding voiceovers.

Key Functions in iMovie

Component	Function
trim clip	Modify > Split Clip
fade from/to black	Transitions > Fade to Black (“From” at beginning)
title	Titles > choose format (start on black or on video)
speed up/slow down	Modify > Fast Forward or Modify > Slow Motion
save	File > Share > File

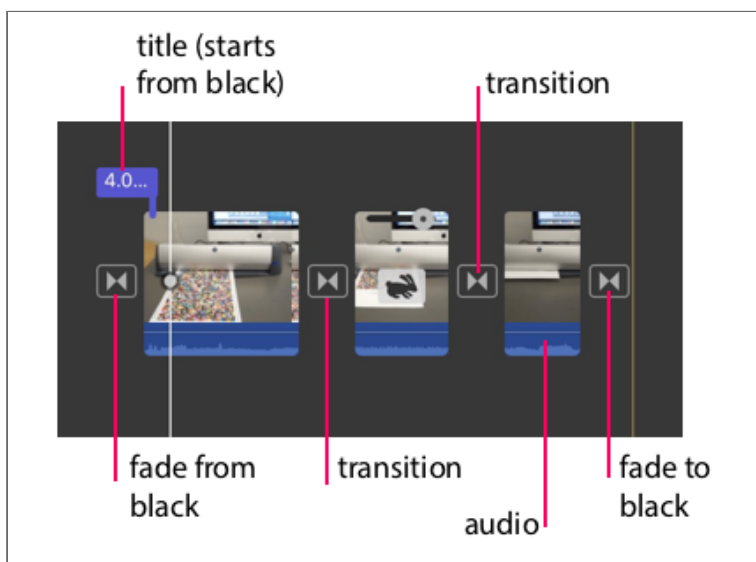
Recording Video

Record a video with a DSLR camera set to video or with a smartphone. For ePub 720-pixel resolution should be adequate. Save the video clip to disk.

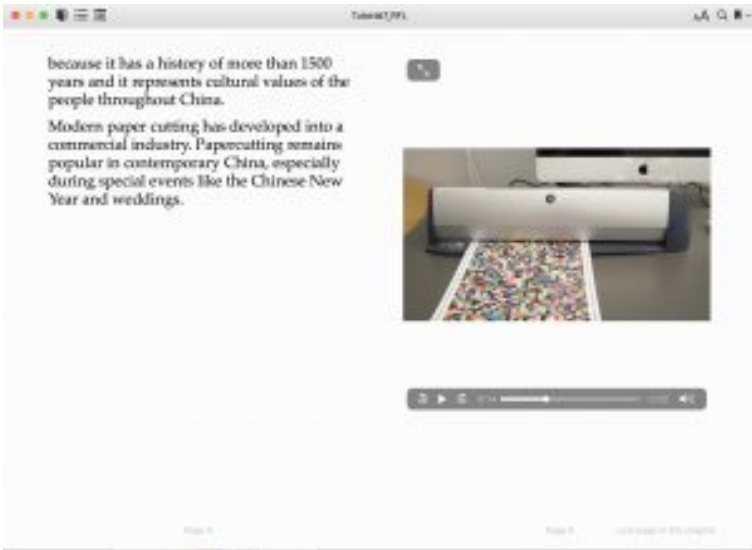
Editing

1. Open iMovie, import your clip, and drag it to the editing area.
2. To delete parts of your clip that you don’t want, move the Playhead to the place you want to trim the video and select Modify > Split Clip. Then select the unwanted portion and delete.

3. Add a Fade from Black at the beginning and Fade to Black at the end (both are called “Fade to Black”).
4. Add a title by choosing one from the Title Gallery. The title can start on the Fade from Black or on the video itself.
5. iMovie can crop videos, but the original aspect ratio (height to width) must be maintained.



Edited video in iMovie showing effects applied.



Reflowable ePub with video

Voiceover

1. To add narration (voiceover), record the narration in Apple QuickTime Player (File > New Audio Recording) and save to disk.
2. Drag the audio recording file into the movie and place underneath the clip where you want it to start.
3. If you want to remove the existing sound, select the clip, choose Modify > Detach Audio, and then select and delete the audio portion.

Export

To save your movie for inclusion in your ePub or iBook, select File > Share > File. Choose the quality level that you want.

Place

1. To place your video in a fixed-layout or reflowable ePub, place the video file on its own page in the InDesign file and then export to ePub.
2. To place in an iBook, drag-and-drop the video file into an iBooks Author page.

Instructional Video



A YouTube element has been excluded from this

version of the text. You can view it online here:

<https://pressbooks.library.ryerson.ca/ebooks/?p=230>

Tutorial 9 • Excel Business Functions

RICHARD ADAMS

This tutorial explains some of the Excel functions identified by Ben Dugas, product manager at eBook publisher Rakuten Kobo, during a guest lecture he presented in the 2018 summer eBooks class.

CONCATENATE

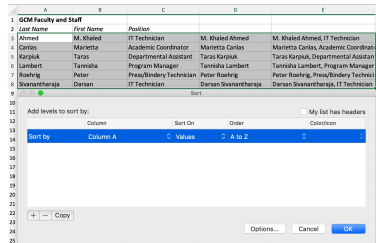
The CONCATENATE function combines two or more columns into one. Text (including spaces) goes in quotes and is separated from variables by “&,” e.g., “=CONCATENATE(B3&”

“&A3”).

D3	A	B	C	D	E
1	ISCM Faculty and Staff				
2	Last Name	First Name	Position		
3	Ahmed	M. Khalid	IT Technician	M. Khalid Ahmed	M. Khalid Ahmed, IT Technician
4	Carles	Marietta	Academic Coordinator		
5	Karpalak	Tara	Departmental Assistant		
6	Lambert	Tamsila	Program Manager		
7	Roehrig	Peter	Press/Bindery Technician		
8	Sowerthorpe	Darran	IT Technician		

SORT

The SORT function (Data > Sort) can be used to order spreadsheet entries alphabetically or numerically.



VLOOKUP

The VLOOKUP function provides a way to look up data in an Excel table. VLOOKUP can be combined with ActiveX interactive objects to create dynamic lookups.

1. Open the file, “vlookup.xlsx.” Note that the file contains a list of sales representatives and their annual sales.
2. To the right of the last column, in cell G2, create a field called “ID” and to the right of that, in cell H2, set the first value to “1.”
3. Below the “ID” and “1” cells, in cell G3, create another field, “Sales,” and to the right of that, in cell H3, insert an “=VLOOKUP” function, which has 4 arguments:
 - cell containing the desired value (H2)
 - cells containing the data range (B3:E9)

- column in the range with the desired data to report (4)
 - whether an approximate match is acceptable to the desired value (FALSE)
4. The function should read
=VLOOKUP(H2,B3:E9,4,FALSE)
 5. Note that Excel reports the sales volume for Sales Representative #1.
 6. To make an interactive VLOOKUP, turn on the Developer Tab in Excel (Preferences > View > Developer Tab).
 7. Insert a “Spinner” (up/down arrow) to the right of the VLOOKUP fields.
 8. Right-click the Spinner and set Format Control to Cell Link H2. Also set the appropriate Minimum and Maximum values.
 9. Click on another cell. Note that the Spinner will increase or decrease the lookup value in Cell H2.

ID	First Name	Last Name	Sales	ID		1
1	Emily	Smith	\$64,901	Sales	\$64,901	
2	James	Anderson	\$70,855			
3	Mia	Clark	\$188,657			
4	John	Lewis	\$97,566			
5	Jessica	Walker	\$58,339			
6	Mark	Reed	\$125,180			
7	Richard	Lopez	\$91,632			

PivotTables

PivotTables (Insert > PivotTable) are a powerful tool for creating

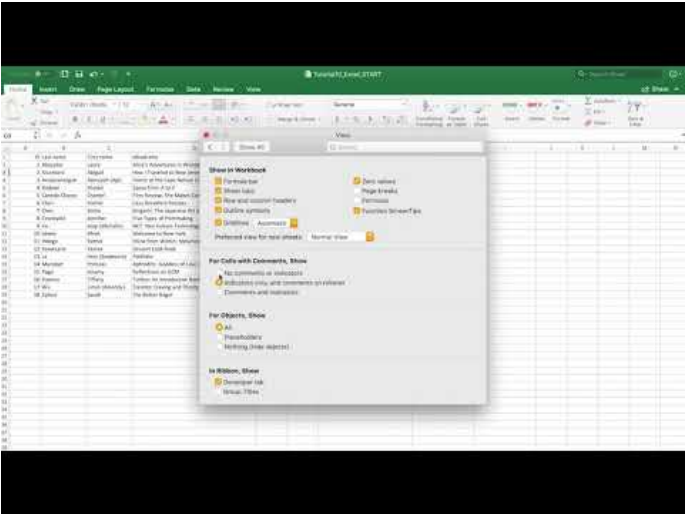
summaries from large amounts of data that would otherwise be too vast to interpret.

1. Open the file “pivot-table.xlsx.” Note that Sheet 1 contains 214 rows of sales figures for fruits and vegetables by country and date—lots to digest!
2. Create a pivot table that lists the total amount of each fruit exported by all countries.
3. Place the cursor on the first cell of the table.
4. Select Insert > PivotTable, click button for Table or Range. When you put the cursor in the field Table/Range, Excel selects the entire table for the input and asks you where to put the table. Select a cell to the right of the table. Note that a PivotTable object appears, along with a sidebar of PivotTable Fields.
5. In the sidebar, rearrange the Field Names as shown in the screen capture below, i.e., Filters: Country; Rows: Product; Values: Sum of Amount.
6. Note that the PivotTable is dynamic—the dropdown arrow in the PivotTable can be used to select the country for the report.

The screenshot shows an Excel spreadsheet with a PivotTable and the PivotTable Fields task pane. The PivotTable is located in the range B10:D100 and displays the following data:

Product	Amount
Apple	10,000
Banana	10,000
Orange	10,000
Pineapple	10,000
Strawberry	10,000
Watermelon	10,000
Apple	10,000
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Instructional Video



A screenshot of a Microsoft Excel spreadsheet. A 'View' dialog box is open, showing options for displaying data. The dialog box has four sections: 'Show in Workbook' (with options like 'Formulas bar', 'Gridlines', 'Row and column headers', 'Data bars', 'PivotTable', 'PivotTable Selections'), 'For Cells with Comments, Show' (with options like 'No comments or comments only', 'Comments only', 'Comments and formulas'), 'For Objects, Show' (with options like 'All', 'Formulas', 'Comments'), and 'In Ribbon, Show' (with options like 'Comments tab', 'Formulas tab'). The background shows a list of authors and titles in columns A through D.

A YouTube element has been excluded from this version of the text. You can view it online here: <https://pressbooks.library.ryerson.ca/ebooks/?p=336>

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Tutorial 10 • Online Portfolio

RICHARD ADAMS

An online portfolio is a good way to catalog and publicize your eBooks from one location. The graphic below shows the HTML tags and CSS styles used to make the sample portfolio.

The portfolio can contain links to online eBook files, such as Ryerson's Pressbooks publishing platform, or to actual eBook files that you place on your server.

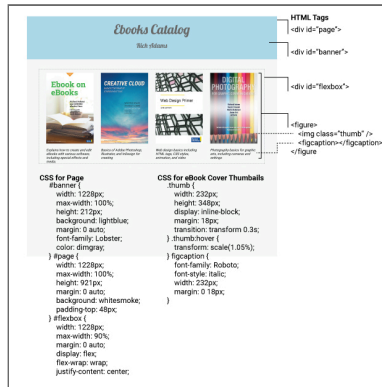
Procedure

To make the portfolio:

1. Save thumbnail-sized JPG or PNG images of your eBook covers. The size used here is 464×696px which were sized to 50% or 232×348px in Dreamweaver. These covers were designed in Adobe

Illustrator and exported with the File > Export for Web dialog box, which enables the final resolution to be set and previewed.

2. The web page is a fixed-size page of 1228px wide by 921px high and with a light grey (“whitesmoke”) background.
3. Inside the “page” is an invisible <div> grouping tag labeled with the ID “flexbox,” 1228px wide, that uses the “[flexible box \[New Window\]](#)” layout (for the illustration, the <div> tag was outlined with a dashed border to make it visible). The flexbox layout enables you to add more thumbnails that will arrange themselves in order on the page, depending upon their number and size.
4. Each tag with its thumbnail is grouped with its caption <figcaption> using a <figure> grouping tag, as shown at the middle right of the diagram. This enables you to put a brief description under each thumbnail.
5. All the tags are linked using <a href> tags to their respective eBooks on the Ryerson Library’s Pressbooks system. You could also place .epub and other files on your server and link to the files so that readers could download the them. The tags are set to open in new tabs or windows so readers do not have to leave the catalog page.



Part 3 • Student Contributions

Purpose

This chapter is for students in the summer 2019 GCM 802 class to add summaries of their “Hot Topics” and “Cool Tech” discussions. Please note that the Ryerson Library publishes eBooks with a Creative Commons “Share and Share Alike with Attribution” (CC-BY) open-source copyright license, meaning others can reuse and edit the work, as long as they attribute the original author. For this reason, the Library is very strict about ensuring that they have the right to reproduce written work and accompanying graphics under this license.

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license. Also Adobe gives a blanket license to reproduce screen captures from its programs, provided that the screen capture is attributed to Adobe and that the dialog box or menu is not cropped.

Accessible Design

LOREN AMARAL

Contributed by Loren Amaral, GCM '21

In a time where inclusion is more prominent than ever, it's important that we do our part as creatives to inform ourselves and promote the use of accessible design. Accessible design can be seen in every industry from automotive, to design, and retail, to name a few. Within each of these industries, if each designer is practising accessible design, then they are ultimately learning to improve their target market's user experience. Before we begin, it is highly recommended that you look into certifying yourself with [The Accessibility for Ontarians with Disabilities Act \(AODA\) \[New Window\]](#) course, in order to learn more about accessibility and how you can introduce it to your own processes.

What is it?

In order to define “Accessible Design” we must first look at three concepts pertinent to this topic:

1. Accessible Design: is the process in which the needs of people with disabilities are specifically considered.
 - Example: If a medical clinic recognizes that their clients are primarily older and have a difficult time navigating their front steps, they should consider accessible design by investing in a ramp or elevator.
2. Universal Design: is a broader concept, in which the design of products and environments are usable by all people, to the greatest extent, without the need for specialized design.
 - Example: Doors, curbsides, and windows are examples of accessible design that allow for users such as baby strollers, delivery workers, and people with disabilities.
3. Usable Design: is a form of testing within the design process. It is defined as the “effectiveness, efficiency, and satisfaction” process. This is when engineers test their designs through user experiences to further learn and improve operational functions.
 - Examples: Surveys, reviews, user stories,

etc.

Now that we've reviewed these concepts, we can better define accessible design as "The combination of the technical and the user experience (UX)."

Accessible Product Design

This is a relatively recent invention called a Timer Cap, which allows users to set a timer on their pill bottles. This is useful for those that are forgetful, or for those that can't open consume pills until a specific time.



TimerCap® has a built-in timer that counts the time since it was last opened. (Courtesy of Amazon.ca)

Users

Accessible Design would not be possible without recognizing its users, and more specifically, people with disabilities. In Ontario alone, 15% of our population has been diagnosed with some form of disability. These disabilities take a wide variety of forms, ranging from mobile to emotional, and are most prominent in those age 75 and older. One perspective to consider

when designing: Ask yourself, “Will I be able to read this when I’m 75?”

Print vs. Digital Accessibility in Publishing

Ultimately there are plenty of amazing things about the print industry and the tactile experience it offers users. Below is an example of accessible print design, in which a milk company has added bold labels and a 3D braille finishing to their cartons, allowing visually-impaired users to identify the products.



Braille milk packaging. (Courtesy of Ateriet.)

While there are many accessibility print solutions, it is apparent that electronic publications offer a *different* form of accessible aid. Electronic publications offer a solution by those bound by “Print Disabilities” which can be effects of blindness, low-vision, dyslexia, mobility impairment, etc. Statistically, 1 in 8 people struggle to read conventional print, so when only 5% of

eBooks are made in an accessible format, this makes it difficult for “print disabled” users to read.

This is why more suitable format should be available such as eBooks, audible readers, podcasts, etc. There are many added benefits and features that make these mediums accessible to users such as; text-to-speech, changing font size and colour, reading in braille and bookmark navigation.

There are many added benefits when considering accessibility in design. The first benefit is that websites are proven to be easier and cheaper to maintain, and they actually rank higher in search engines. Another added benefit is that the more accessible you are, the more users will be able to experience your designs and offer feedback to further improve. The con associated with accessibility in design is that creative options are limited, as there must be strict quality control in order to ensure a standard across all platforms.

Accessible Design Tips

- **Contrast**

It’s important that there is a clear distinction between the background and foreground within the design. It’s very trendy to see these low contrast designs such as KKW or Kylie Skin, but it’s not ideal for accessibility. Based on accessibility guidelines, the contrast percentage depends on the foreground object and size. They state that normal text should have a 4.5:1 ratio,

whereas larger text (14pt +) should have a 3:1 ratio. [A11Y Color Contrast Validator \[New Window\]](#) allows you to upload images or input colour values to check whether your colour palette is accessible by industry standards.

- **Typography**

The next tip is typography, which plays a huge role in accessible design. To start, when choosing the size of the type, it is advised to stay above 12pt and to have the capability to size the type by 200% if required. When looking at typeface families, try to stay away from decorative typefaces as they can be difficult to read. It is also advised that for readability purposes, to use serif fonts for print work, and sans-serif fonts for online work. The font [Open Dyslexic \[New Window\]](#) was designed to help those with dyslexia read large amounts of text.

OpenDyslexic Font

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- **Hierarchy and TOC**

This is a great tool to know if you're making accessible documents or working with Adobe Acrobat for instance. Most applications allow you to make some type of interactive TOC by using Paragraph Styles to organize the document and making accessible for e-readers. Attached is a link on how to use [paragraph styles \[New Window\]](#) and the Interactive [TOC tool in InDesign \[New Window\]](#), just in case you need a refresher. As well, in the Adobe Acrobat program, there's a great accessible tool that allows you to organize the text and images throughout the document so that e-readers can accurately translate.

- **Imagery**

The final tip is related to imagery and graphics. Opacity and sizing are pretty general rules to follow, making sure it's visible to users as best as possible. Alt-tags are also really important for e-readers to translate the document properly by describing images and graphics. Image Captions are also a great way to make images accessible.

Sources

- <https://www.washington.edu/doit/what-difference-between-accessible-usable-and-universal-design#header>
- <https://www.marsdd.com/wp-content/uploads/2014/01/Towards-an-Accessible-Future-Ontario-Innovators-in-Accessibility-and-Universal-Design1.pdf>
- <https://www.oreilly.com/library/view/accessible-epub-3/9781449329297/>
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- <https://www.rnib.org.uk/information-everyday-living-reading-ebooks-and-digital/accessibility-ebooks>

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Chapter 1

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Chapter 4

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Tutorial 2

Books with plant photo by Fang Wei Lin on Unsplash.com.

Tutorial 7

Green car caricature courtesy of PNGTree.com.

Accessible Design

TimerCap photo courtesy of Amazon.ca.

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