

**Apex CoVantage, LLC**

**Job 18031 University of Michigan**

**EPUB Conversion Design Document**

**Revision History**

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# Project Overview

## Summary

The University of Michigan Press is a vital component of UM Library's Michigan Publishing, which is the primary academic publishing division of the University. In partnership with our authors and series editors, we publish in a wide range of humanities and social science disciplines. University of Michigan Press champion the Library's research and scholarly communication missions through our global digital and print publishing and distribution programs.

As a part of its digitization and publishing program, UM has engaged Apex as a production partner to convert titles into EPUB3 format. At the outset of this engagement, Apex will be providing EPUB3 format conversion service for UM, which involves EPUB2 and web-ready PDF inputs and producing EPUB3 deliverables as per the specification agreed by UM.

## Project Scope

Apex will provide conversion services for 1,075 books to the University Press. The books are generally 300-page scholarly monographs with negligible math and non-Latin alphabets, about one-quarter of which have an average of ten tables. Apex will work with files in various formats supplied by the University, including EPUB 2.0/2.0.1, EPUB 3.0, born-digital PDFs – and convert all into EPUB 3.0.1 files that will include consistent HTML5 structural semantic tagging, navigation, and HTML tables in accordance with requirements for the University’s Fulcrum book platform.

## Communications Matrix

Below is the communications matrix for the project in steady state. There are a number of other participants from both Apex and UM during the onboarding and start-up process.

Table : Communications Matrix

|  |  |  |
| --- | --- | --- |
| **Role** | **Apex** | **UM** |
| Project Management | Arthic Leo A E (arthicleo@aci.apexcovantage.com) | Jason Colman (taftman@umich.edu) |
| Technical Issues | Greg Suprock (gsuprock@apexcovantage.com) | Jeremy Morse (jgmorse@umich.edu) |
| Commercial Matters | Joel Mills (jmills@apexcovantage.com) | Jason Colman (taftman@umich.edu) |
| Executive Escalation | Pardha Karamsetty (pkaramsetty@apexcovantage.com) | Charles Watkinson (watkinc@umich.edu) |

## Delivery Schedule

Below is the delivery schedule for the received 1075 titles. Apex will process and deliver all the 1075 titles within 6 months and the final cut-off date would be November 26, 2018.

Table : Delivery Schedule - 2018

|  |  |
| --- | --- |
| **Month** | **Number of titles** |
| August 2018 | 200 |
| September 2018 | 280 |
| October 2018 | 300 |
| November 2018 | 295 |

The final EPUB3 outputs will be quality checked by UM by end of this year and may provide the feedback to Apex by early next year. However, Apex will request UM to do a full quality check for the first set of 20 titles and received feedback. The feedback will be used to evaluate specifications, processes and the quality benchmark.

* **Accepted Deliverables** will be delivery to UM.
* **Rejected Deliverables**: Returned to Apex for correction. Corrected Deliverables returned to UM within 2-5 business days. Deliverables can be “Rejected” only for Apex errors where the deliverable is out of compliance with the quality criteria specified in Table 5: Quality Criteria.

In the event that UM Accepts a Deliverable, but wishes to make further edits (not Apex errors), this will be considered an **Accepted Rework**. Apex expects Accepted Rework to be infrequent and additional charges apply in this case.

## Batch and Work Package Definitions

A batch consists of a single file. The work package is also a single file.

## Logistics

All work tracked internally at Apex through ProTrak.

Source files downloaded by Apex via FTP transfer as a zip archive.

Delivery files transferred to UM via FTP transfer as a zip archive. Please see below for the FTP credentials.

**Username:** umich

**Password:** nag1hch1$

Apex will archive source and delivery files for six (6) months after final delivery Source and delivery files will be deleted at the end of the six-month period. In case of republishing after the six month archive period, UM would resupply the full set of EPUB files delivered to UM and changes.

## Source Materials

Inputs into the EPUB conversion process will include either one of the following:

EPUB2 file

EPUB3 file

Web-ready PDF

## Project Deliverables

The delivery files for each file will be an EPUB3 file as per the specification.

## Quality Specification

Below are the Quality Metrics to be used for evaluating the deliverables.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item #** | **Type** | **Description** | **Rate** |
| 1 | Structural Accuracy | * ePub File naming convention * Directory structure * ePub checker 4.0.2 validation * NCX (NAV) and Book Order should be same | 100% |
| 2 | CSS & DTD Validation | * ToC.ncx, contents.opf and all xhtmls should be error free * CSS Should be error free | 100% |
| 3 | Validation for Readium app rendering in Windows | * Cover image renders properly * All TOC chapters are linked properly * Figures are properly sized * No blank pages * Each Chapter should start on new page | 100% |
| 5 | Metadata - Tagging Accuracy | * Refer section 3.6 | 100% |
| 6 | Metadata - Character Accuracy | * Refer section 3.6 | 100% |
| 7 | Image Accuracy | * Refer section 3.20 | 100% |
| 8 | Image Placement Accuracy | * Ensure all images/tables placement | 99.90% |
| 9 | Image Character Accuracy (for alt tag) | * Extracted Text of Composite PDF or, * Raw OCR text (Hardcopy) | 99.50% |
| 10 | Tagging accuracy | * All XHTML tagging | 99.95% |
| 11 | Text character accuracy – Web-ready PDF | * Extracted Text of Composite PDF or, * Raw OCR text (Hardcopy) | 99.95% |
| 12 | Text character accuracy – EPUB2 and EPUB3 | * Extracted Text of EPUB | 100% |

## Quality Acceptance Process

For the first set of 20 files, UM will provide notice of acceptance/rejection once review and mutually agreed by both the parties. Review of the remaining 1055 files by UM will be in the first quarter of 2019.

## Reports and Documentation

Reports generated from ProTrak as standalone spreadsheets, and, shared to UM.

### Performance Metrics

1. Schedule - Weekly, Monthly, Project-to-Date
   * % on-time - Receipt to EPUB3 output (Schedule TBD)
   * % on-time - Corrections to EPUB3 output (Schedule TBD)
   * % on-time – Query Resolution (within 1 business day)
2. Quality - Weekly, Monthly, Project-to-Date
   * % Rejection for Final Delivery
   * % Accepted-Rework

### Summary Report

The summary report will give an overview of the following information.

* 1. Titles behind schedule
  2. Outstanding queries by UM
  3. Priority title Status

## Meetings

UM and Apex will participate in a Biweekly Conference Call (project status, issues, other topical matters).

## Directory and File Naming Conventions

### Source to Apex

UM sources for production are EPUB2, EPUB3 and PDF files.

Credentials: Shared internally at Apex

### Deliveries to UM

File delivery is by FTP to UM.

Credentials: Shared internally at Apex

The final EPUB3 output naming convention will be the 13-digit ISBN number.

# 

# Source Description

## Source File Descriptions

UM had delivered the source files to Apex in EPUB2, EPUB3 and Web-ready PDF formats.

### EPUB2 Submission

EPUB2 files delivered in epub format. The total EPUB2 source titles is 704.

### EPUB3 Submission

EPUB3 files delivered in epub format. The total EPUB3 source titles is 342.

### Web-ready PDF Submission

Web-ready PDF files delivered in editable PDF format. The total PDF source titles is 29.

# Target Specification – EPUB3

## EPUB Version

EPUB version 3.0.1 is the recommended technical specification for EPUB created for submission to Fulcrum. Please note this document does not repeat conformance requirements contained in the official specification. However, recommended features regarding file and directory structure, naming conventions, treatments for images, treatments for metadata, and other such file preparation details are included.

The full EPUB 3.0.1 specification is located here: <http://idpf.org/epub/301>.

* International Digital Publishing Form (IDPF) guidelines for reflowable digital books and publications.
* ePub validated against ePubCheck version 4.0.2 (<http://code.google.com/p/epubcheck/>)
* XHTML files compliant with XHTML 1.1 DTD
* XHTML files validated with CSE HTML validator version 10.0

## Element Specification

The following matrix details recommendations how to convert different elements. The treatments are optional for third-party partners to University of Michigan.

### Standard Functionality Levels (ePub 3) for PDF source

|  |  |
| --- | --- |
| **Element** | **Conversion** |
| Parts/Chapters | All Heading Levels |
| Graphics + Captions | Image + Text |
| Tables + Captions | Text |
| Sidebars | Text |
| Display Math | MathML |
| In-line Math | Text (if keyable) / MathML (non-keyable) |
| Lists | Text |
| Footnotes/Endnotes | Bi-directional text |
| Poems | Text |
| Plays/Dialog | Text |
| Non-keyboard Characters | Unicode |
| Drop cap | Text |
| Cover | Image |
| Title Page | Text |
| About the Author | Text |
| Acknowledgements | Text |
| Copyright Page | Text |
| Table of Contents | Bi-directional |
| Lists of Tables/Figs, etc. | Text with bi-directional links |
| Dedications/Epigraphs | Text |
| Foreword/Introduction/Preface | Text |
| References/Bibliography | Text |
| Glossary/Appendix | Text |
| Index | Text with links |

**Note:** If the input is ePub, then output should be in the same format.

## File Name

The EPUB3 output file name will be the 13-digit ISBN number of the same input file name for Apex Production.

The use of the 13-digit ISBN number of the source file is optional for third-party partners to University of Michigan. However, file naming conventions must be consistent across titles submitted to the university.

## Folder Structure

The following folder structure is required for Apex deliverables to the University of Michigan. The folder structure below is optional for third-party partners to University of Michigan. However, folder structure conventions must be consistent across titles submitted to the university.

The EPUB should conform to the following directory structure and naming convention.

**/META-INF**

**container.xml**

**/OEBPS**

**/xhtml/*xxy*\_*Filename*.xhtml**

**content.opf**

**/fonts**

***Fontname*.*fontextension***

**/images**

**cover.*imgextension***

***figname*.*imgextension***

**/styles**

**page-template.xpgt**

***stylesheet*.css**

**toc.ncx**

**mimetype**

Where,

***xx*** = A sequential numeric book part identifier beginning with 00 and incrementing by 1 (e.g., 00, 01, 02, 03, and so on)

***y*** *=* An optional alphabetic section identifier used when book parts contain large numbers of image files (e.g., 01a, 01b, 01c, and so on)

***Filename***= A human readable book part name (e.g., Nav, Cover, Title, Contents, Chapter01

***Fontname*** = A font file name (e.g., MinionPro-Regular)

***fontextension*** = A font file extension (e.g., ttf)

***figname* =** Figure name.

***imgextension*** *=* An image file extension (e.g., jpg, png)

***stylesheet*** *=* A human readable CSS stylesheet name.

### Optional File Inclusions

Additional inclusions supporting alternative EPUB Reader systems, such as ibooks and the com.apple.ibooks.display-options.xml file, is permissible and will not interfere with the Fulcrum viewer.

If such files are in source, they will be in the deliverable EPUB3.

## EPUB Package

The EPUB3 output contains the following folders and files.

* XHTML files
* Image files
* toc.ncx
* mimetype
* container.xml
* content.opf
* Stylesheet (CSS)
* Embedded Fonts (Only if approved by customer)

## Metadata

### Dublin Core

Dublin Core metadata is required for the following items:

* Title
* Creator
* Language
* Rights
* Publisher
* Identifier
* Source (Required when the EPUB is a derivative of a print source.)

**Example code:**

<dc:title>A Mid-Republican House from Gabii</dc:title>

<dc:creator>Rachel Opitz</dc:creator>

<dc:creator>Marcello Mogetta</dc:creator>

<dc:creator>Nicola Terrenato</dc:creator>

<dc:language>en-US</dc:language>

<dc:rights>© University of Michigan Press</dc:rights>

<dc:publisher>University of Michigan Press</dc:publisher>

<dc:identifier id="BookID">9780472999002</dc:identifier>

<dc:sourceid="src-id">urn:isbn:9780472999999</dc:source>

<meta refines="#src-id" property="dcterms:issued">2000-01-01</meta>

<dc:date>2018-03-03</dc:date>

## Accessibility Metadata

Include the two types of accessibility metadata structure defined in the current EPUB environment as listed below.

ONIX: <http://kb.daisy.org/publishing/docs/metadata/onix.html>

Use ONIX only when creating a separate ONIX metadata XML to place in the /meta folder of the EPUB.

Schema: <http://kb.daisy.org/publishing/docs/metadata/schema-org.html>

## HTML Meta Header

For Apex created EPUBs, the follow meta tags will be placed inside the <head> tag in all the XHTML files. The meta tags are optional for third-party partners to University of Michigan.

<meta name="viewport" content="initial-scale=1.0,maximum-scale=5.0"/>

<meta content=" " name=" " role="section" />: The chapter id should be provided as value for content attribute and the type of the section should be provided under name attribute. For example:

<meta content="dedication" name="dedication" role="section" />

<meta content="chapter04" name="chapter04" role="section" />

## Bookmark

Bookmark each ePUB as follows:

* Cover
* Title
  + Note: If there are multiple title pages, label the bookmarks “Title Page” and “Original Title Page”.
* Half Title
* Copyright
  + Note: If there are multiple copyright pages (e.g., the Routledge Revivals imprint which contains the original copyright page usually from the 1800s), the bookmarks are to be labeled “Copyright Page” and “Original Copyright Page”.
* Dedication
* Table of Contents
  + Note to Production: If the Table of Contents is missing for a title, raise a JIRA ticket to see if the client can resupply the file. If not, construct the bookmarks from the Chapter Titles.
* All book sections listed in the Table of Contents
* All Lists of Tables, Figures, Illustrations, Maps, etc.
* Appendices
* Indexes

## Html Title

HTML titles are a best practice recommendation, and, required for Apex EPUB deliveries. However, HTML titles are optional for third-party partners to University of Michigan.

Assigning meaningful titles is a recommended best practice for <title> elements in the EPUB. Such titles help all users to find and navigate through the documents, and, are essential for screen reader users.

Example 1 — One chapter/part per HTML

<html …>

<title>Chapter 1 — Hobo's Guide to the Universe</title>

Example 2 — Multiple HTML files for one chapter/part

If a document is split into multiple HTML files, the following method should be followed.

<html …>

<title>Chapter 1 - Continued (2 of 3) — Hobo's Guide to the Universe</title>

## Headings

Apply heading tags as per the HTML element for the headings. Based on the heading levels, apply heading tags ranging from h1 to h6 as needed.

### Numbered headings

<section role="doc-part">

<h1>Book One: 1805</h1>

<section role="doc-part">

<h2>Part 1</h2>

<section role="doc-chapter">

<h3>Chapter 1</h3>

### Separate heading and subtitle

The title and subtitle are contained in separate elements, but grouped in a header element to better associate them. Use the role doc-subtitle to identify the subtitle.

<section role="doc-chapter">

<header>

<h1>ORIGIN OF THE WORLD.—FIRST DYNASTY.</h1>

<p role="doc-subtitle">URANUS AND GÆA. (Cœlus and Terra.)</p>

</header>

### Merged heading and subtitle

When the subtitle is contained within the same heading element as the title, identify it in a span with the role of doc-subtitle.

<section role="doc-chapter">

<h1>ORIGIN OF THE WORLD.—FIRST DYNASTY.

<span role="doc-subtitle">URANUS AND GÆA. (Cœlus and Terra.)</span></h1>

## Tables

Tag tables as per the table structure. If any of the tables exceeding more than 5 columns are captured as image to accommodate the device restriction [Insert Cross-reference for Image treatment of tables], then the table should be coded with proper table tagging and referred to the particular table image through aria-label attribute. This will help the screen reader users to perceive the full table information as an alternative to the image.

### Irregular header

The following table has headers that span columns and rows:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Shipping.** | | **Stock.** | **Wages.** | | **Weights.** | | **Name of Colony.** |
| **Book, page.** | **Appx, page.** | **Book, page.** | **Appx, page.** | **Book, page.** | **Appx, page.** |
| … | | | | | | | |

To make these headings accessible, use colgroup elements with the scope attribute:

<table border="1">

<colgroup span="2"/>

<colgroup span="1"/>

<colgroup span="2"/>

<colgroup span="2"/>

<colgroup span="1"/>

<thead>

<tr>

<th id="ship" colspan="2" scope="colgroup">Shipping.</th>

<th id="stock" rowspan="2" scope="colgroup">Stock.</th>

<th id="wages" colspan="2" scope="colgroup">Wages.</th>

<th id="wt" colspan="2" scope="colgroup">Weights.</th>

<th id="name" rowspan="2" scope="colgroup">Name of Colony.</th>

</tr>

<tr>

<th scope="col">Book, page.</th>

<th scope="col">Appx, page.</th>

<th scope="col">Book, page.</th>

<th scope="col">Appx, page.</th>

<th scope="col">Book, page.</th>

<th scope="col">Appx, page.</th>

</tr>

</thead>

…

</table>

### Complex headings

The following table shows a distance chart with the start destinations defined in the first row and at the end destination at the end of each subsequent row:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Vancouver** | **Calgary** | **Saskatoon** | **Winnipeg** | **Toronto** | **Montreal** | **St. John’s** |  |
| 7323 | 6334 | 5838 | 5010 | 3141 | 2602 |  | **St. John’s** |
| 4271 | 3743 | 3232 | 2408 | 539 |  | 2602 | **Montreal** |

Use scope="col" to make the start destinations the column headers and scope="row" to make the end destinations the row headers:

<table border="1">

<tr>

<th scope="col">Vancouver</th>

<th scope="col">Calgary</th>

<th scope="col">Saskaton</th>

<th scope="col">Winnipeg</th>

<th scope="col">Toronto</th>

<th scope="col">Montreal</th>

<th scope="col">St. John's</th>

<td></td>

</tr>

<tr>

<td class="center">7323</td>

<td class="center">6334</td>

<td class="center">5838</td>

<td class="center">5010</td>

<td class="center">3141</td>

<td class="center">2602</td>

<td class="center"></td>

<th scope="row">St. John's</th>

</tr>

<tr>

<td class="center">4271</td>

<td class="center">3743</td>

<td class="center">3232</td>

<td class="center">2408</td>

<td class="center">539</td>

<td class="center"></td>

<td class="center">2602</td>

<th scope="row">Montreal</th>

</tr>

</table>

### Layered headings

The following table combines headers from the top of each column and beginning of each row:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table IX.4 Income Distribution Among Families 1929-1997 | | | | | | |
| **% Families** | **1929** | | **1970** | | **1997** | |
| **Lowest 20%** | 3.5% | 3.5% | 5.5% | 5.5% | 4.2% | 4.2% |
| … | | | | | | |

The headers attribute is used to provide the IDs of the cells that contain the relevant heading text:

<table border="1">

<caption>Table IX.4 Income Distribution Among Families 1929-1997</caption>

<tr>

<th id="t4-pct">% Families</th>

<th id="t4-1929" colspan="2">1929</th>

<th id="t4-1970" colspan="2">1970</th>

<th id="t4-1997" colspan="2">1997</th>

</tr>

<tr>

<th id="t4-low20">Lowest 20%</th>

<td headers="t4-1929 t4-low20">3.5%</td>

<td headers="t4-1929 t4-low20">3.5%</td>

<td headers="t4-1970 t4-low20">5.5%</td>

<td headers="t4-1970 t4-low20">5.5%</td>

<td headers="t4-1997 t4-low20">4.2%</td>

<td headers="t4-1997 t4-low20">4.2%</td>

</tr>

…

</table>

## Lists

Tag list items with proper list tags. Do not use other elements such as <p>. By tagging the list items with proper list elements, the screen reader users can perceive meaningful information and will know that they are reading list items.

### Unordered list

<ul>

<li>Credit, consumer, 164</li>

<li>Cross-functional contact, 10-11</li>

<li>Culture

<ul>

<li>buyer behavior and, 85</li>

<li>defined, 85, 98, 118</li>

…

</ul>

</li>

…

</ul>

Excerpt from: Core Concepts of Marketing — John Burnett

### Definition list

Definition list tagging is required for Apex EPUB deliveries, but considered optional for third-party partners to University of Michigan.

<dl>

<dt><def>Exchange function</def></dt>

<dd>

Sales of the product to the various members

of the channel of distribution.

</dd>

<dt><def>Physical distribution function</def></dt>

<dd>

Moves the product through the exchange

channel, along with title and ownership.

</dd>

<dt><def>Marketing channel</def></dt>

<dd>

Sets of independent organizations involved

in the process of making a product or

service available for use or consumption

as well as providing a payment mechanism

for the provider.

</dd>

…

</dl>

Excerpt from: Core Concepts of Marketing — John Burnett

## Links

The recommended best practice is to include links as meaningful text if the surrounding text is inadequate to define the purpose of the link. By providing meaningful text interpretation, the screen reader user can understand the purpose of the link and decide if they need to navigate to that particular link.

### Links spec

All the cross-references such as table of contents, notes and footnotes are two-way linked. Other references such as page, section, figure, etc., are one-way linked. The web address and email address links are active.

### Link with full context of destination

The user can determine the destination of the link from the text of the <a> element alone.

<p>For more information, refer to <a href="#…">Section 1.1 of Web Publications</a></p>

### Link with alternate text

Adding alternate text is an optional best practice if neither of the above conditions are met. Use the title attribute to provide additional context.

<a href="#…" title="The EPUB specifications">click here</a>

### Visual distinctive linking

**Bold Text Option:** By specifying bolder, either a medium font or a bold one will make links visually stand out from their surrounding text.

a {

text-decoration: none;

font-weight: bolder;

color: rgb(51,102,204);

}

**Dotted Border Option:** A dotted border is placed under all links to highlight them instead of a line.

a {

text-decoration: none;

padding-bottom: 0.3rem;

border-bottom: 0.1rem dotted rgb(100,100,100);

}

## Images

The images should have an alternate text for the screen reader users. By providing an alternate text for non-visual content, the screen reader users can perceive information about the image through the alternate text provided by us.

### Significant simple image (no description required)

<img

src="covers/9781449328030\_lrg.jpg"

alt="Accessible EPUB 3 - First Edition" />

### Extended description via hyperlink

Extended description inclusion and linking via a hyperlink are optional unless provided in the source.

The following example uses simple hyperlinks to link to a note at the end of the chapter.

The descriptions could also be located in a separate file, but this might have a performance impact for users (i.e., it will require the reading system to unload and reload each document each time the user follows a link).

An image could also be used to minimize the appearance of the link, but some reading systems have issues with such links.

<figure id="fig-01">

<img

src="graphics/water-cycle.jpg"

alt="The hydrologic cycle, showing the

circular nature of the process as water

evaporates from a body of water and

eventually returns to it"/>

<figcaption>

The hydrologic cycle. <a role="doc-noteref"

href="#desc-01">Description</a>

</figcaption>

</figure>

…

<h2>Image Descriptions</h2>

<aside role="doc-footnote" id="desc-01">

<p><a role="doc-backlink"

href="#fig-01">Figure 1.</a> — The diagram shows

the processes of evaporation, condensation,

evapotranspiration, water storage in ice and snow, and

precipitation. A large body of water …

</p>

</aside>

### Decorative image

An empty alt attribute is complemented by the role presentation to indicate that the image contains no information for users.

<img

src="graphics/gothic-border.png"

role="presentation"

alt=""/>

## Footnotes and Endnotes

In general, the footnotes and endnotes are highly recommended to place at logical break of the book such as end of the chapter or end of the book, which will help the screen reader users to read the primary text. Also, the two-way link provided for the footnotes and endnotes reference numbers in between the primary text will help the screen reader users to navigate if they require.

Footnote and endnote tagging per the following examples is required for Apex EPUB deliveries, but considered optional for third-party partners to University of Michigan.

### Footnotes in the body

<p>

In that

year<a href="#ft2f" epub:type="noteref">2</a>

there were 67 mills engaged in the manufacture of

cotton goods …

</p>

<aside id="ft2f" epub:type="footnote">

<p>

2 The manufacturing statistics for 1900 which

follow are not those given in the Twelfth

Census, but are taken from the

<em>Census of Manufactures</em> …

</p>

</aside>

<p>…</p>

### Endnote section

<section epub:type="endnotes">

<h2>End Notes</h2>

<ol>

<li id="en001" epub:type="endnote">

According to the usual nomenclature, the

branch flowing S.W. is called the Chattooga;

this unites with the Tallulah to form the

Tugaloo, which …

</li>

…

</ol>

</section>

### Back-linking notes

<li id="en001" epub:type="endnote">

<a href="#en01-ref" title="note reference 1">1</a>

According to the usual nomenclature, the …

</li>

## Content Numbering

### Page Break Numbering

Page numbers should follow the EPUB3 Accessibility Guidelines. <https://idpf.github.io/a11y-guidelines/content/xhtml/pagenum.html>

**Example coding:**

<span id="p1" class="page" epub:type="pagebreak" role="doc-pagebreak" aria-label="1">Page 1 &#8594;</span>

### Paragraph Numbering

Paragraph numbering requires adding a class identifier and id value to a <p>.

Note: Paragraph numbering is optional, but recommended when present in the source document.

Example coding:

<p class=”numberedpara” id="para11" title="Para11"/>

### Line Numbering

Line numbering requires adding a class identifier and id value to a <p>.

Example coding:

<p class=”numberedline” id="line11" title="Line11"/>

## Chapter Split

When chapters contain a large number of images and the total file size of the images exceeds 2 Mb, then consider splitting the chapter into a series of html files. This will create smaller files for faster download and rendering within the Fulcrum EPUB system. Inside each html file, please include the yellow highlighted metadata updated by section to represent relationships between all files for a chapter. The example snippet below is for file chapter2a. The reason for the metadata inclusion is to provide information so that UM is able to parse files to allow only chapters to display.

<html xmlns="http://www.w3.org/1999/xhtml" xmlns:epub="http://www.idpf.org/2007/ops" xml:lang="eng">

<head>

<title>More</title>

<link rel="stylesheet" href="../Styles/stylesheet.css" type="text/css"/>

<meta name="viewport" content="initial-scale=1.0;maximum-scale=5.0"/>

<meta content="chapter2" name="chapter2a" role="section" />

</head>

<body>

<div>

<h3 class="subhead" id="sub4"><em>The Mid-Republican Period: The House</em></h3>

## CSS Stylesheet

### Standard CSS

If possible, use following standard CSS for EPUB3 conversion. Add unique styles per book as needed as additional styles at the bottom of the standard CSS.



### CSS Units

* Font-size should always be defined in %
* Do not use fixed values (**mm, cm, in, pt** or **pc**) in CSS file.
* Control the **font style** over the css (avoid inline styles)
* Create external style sheet

\* It is necessary to validate CSS (refer http://www.css-validator.org/).

\*\* Do not capture <i> (capture as <em>)

\*\* Do capture <b> for bold text in XHTML files

### Colors

The best practice is to avoid using color to differentiate the information of a text. For example, if the color of a text provides a meaning to the content, then there should be some alternate method to convey the information to screen reader user.

### Background Images

Setting the contrast between the background colors and images will help readers who have difficulty in distinguishing contrasts. Color contrast of 4:5:1 is the best practice followed in the industry. Check contrast using the following link. <https://webaim.org/resources/contrastchecker/>.

### Hidden Content

There should not be any hidden content available in the EPUB files.

Exception: Code long-descriptions as a separate instance in a file and it is permissible to have it remain hidden text.

### CSS Property Reference

EPUB 3 user agents that visually render content may provide support for the CSS properties listed below, but inclusion is optional. Properties not listed may still be used (e.g., from evolving CSS 3 modules), but content authors should use due diligence and assess the impact on rendering and accessibility when using such properties.

### CSS 2.1

Table 1. Acceptable Styles

| **Property** | **Considerations** |
| --- | --- |
| [background](http://www.w3.org/TR/CSS21/colors.html#propdef-background) | * The background property is a shorthand for defining one or more properties. Refer to each individual background-\* property for potential issues. Note that background properties are largely unsupported at this time outside of fixed layouts. |
| [background-attachment](http://www.w3.org/TR/CSS21/colors.html#propdef-background-attachment) |  |
| [background-color](http://www.w3.org/TR/CSS21/colors.html#propdef-background-color) | * Ensure sufficient contrast with text color |
| [background-image](http://www.w3.org/TR/CSS21/colors.html#propdef-background-image) | * Ensure sufficient contrast with content color (text and graphic) * High mix of gradients and colors in images can make reading overlaid text difficult |
| [background-position](http://www.w3.org/TR/CSS21/colors.html#propdef-background-position) |  |
| [background-repeat](http://www.w3.org/TR/CSS21/colors.html#propdef-background-repeat) |  |
| [border](http://www.w3.org/TR/CSS21/box.html#propdef-border)  [border-top](http://www.w3.org/TR/CSS21/box.html#propdef-border-top)  [border-right](http://www.w3.org/TR/CSS21/box.html#propdef-border-right)  [border-bottom](http://www.w3.org/TR/CSS21/box.html#propdef-border-bottom)  [border-left](http://www.w3.org/TR/CSS21/box.html#propdef-border-left) | * These border properties are shorthands for defining one or more properties. Refer to each individual border-\* property for issues |
| [border-collapse](http://www.w3.org/TR/CSS21/tables.html#propdef-border-collapse) |  |
| [border-color](http://www.w3.org/TR/CSS21/box.html#propdef-border-color)  [border-top-color](http://www.w3.org/TR/CSS21/box.html#propdef-border-top-color)  [border-right-color](http://www.w3.org/TR/CSS21/box.html#propdef-border-right-color)  [border-bottom-color](http://www.w3.org/TR/CSS21/box.html#propdef-border-bottom-color)  [border-left-color](http://www.w3.org/TR/CSS21/box.html#propdef-border-left-color) | * An element’s border color must never be the sole means of conveying information about the nature of its content. See the [Color info page](http://kb.daisy.org/publishing/docs/css/color.html) |
| [border-spacing](http://www.w3.org/TR/CSS21/tables.html#propdef-border-spacing) |  |
| [border-style](http://www.w3.org/TR/CSS21/box.html#propdef-border-style)  [border-top-style](http://www.w3.org/TR/CSS21/box.html#propdef-border-top-style)  [border-right-style](http://www.w3.org/TR/CSS21/box.html#propdef-border-right-style)  [border-bottom-style](http://www.w3.org/TR/CSS21/box.html#propdef-border-bottom-style)  [border-left-style](http://www.w3.org/TR/CSS21/box.html#propdef-border-left-style) |  |
| [border-width](http://www.w3.org/TR/CSS21/box.html#propdef-border-width)  [border-top-width](http://www.w3.org/TR/CSS21/box.html#propdef-border-top-width)  [border-right-width](http://www.w3.org/TR/CSS21/box.html#propdef-border-right-width)  [border-bottom-width](http://www.w3.org/TR/CSS21/box.html#propdef-border-bottom-width)  [border-left-width](http://www.w3.org/TR/CSS21/box.html#propdef-border-left-width) | * When using color to convey meaning, ensure borders are thick enough that visual users can discern the color |
| [bottom](http://www.w3.org/TR/CSS21/visuren.html#propdef-bottom)  [left](http://www.w3.org/TR/CSS21/visuren.html#propdef-left)  [right](http://www.w3.org/TR/CSS21/visuren.html#propdef-right)  [top](http://www.w3.org/TR/CSS21/visuren.html#propdef-top) | * User agent support for absolute and fixed positioning is not guaranteed * Content should not be positioned in a way that makes its discoverability problematic for users with low vision and/or using zooming software |
| [caption-side](http://www.w3.org/TR/CSS21/tables.html#propdef-caption-side) |  |
| [clear](http://www.w3.org/TR/CSS21/visuren.html#propdef-clear) |  |
| [color](http://www.w3.org/TR/CSS21/colors.html#propdef-color) | * See the [Color info page](http://kb.daisy.org/publishing/docs/css/color.html) for the range of considerations when coloring text and graphical content |
| [counter-increment](http://www.w3.org/TR/CSS21/generate.html#propdef-counter-increment)  [counter-reset](http://www.w3.org/TR/CSS21/generate.html#propdef-counter-reset) |  |
| [cursor](http://www.w3.org/TR/CSS21/ui.html#propdef-cursor) | * Avoid changing the cursor such that clickable elements are no longer distinguishable |
| [display](http://www.w3.org/TR/CSS21/visuren.html#propdef-display) | * Setting the display property to the value none removes the element from rendering both visually and to assistive technologies. It is not a mechanism for hiding content from visual display that should be rendered by ATs. |
| [empty-cells](http://www.w3.org/TR/CSS21/tables.html#propdef-empty-cells) | * Setting the empty-cells property is not required for HTML5 tables, as borders are rendered (do not insert placeholder text such as dashes or non-breaking spaces) * For forwards compatibility with EPUB 2 user agents, the property should be set to the value show to ensure table borders are drawn around empty cells |
| [float](http://www.w3.org/TR/CSS21/visuren.html#propdef-float) | * Elements should not be floated in a way that makes their discoverability problematic for users with low vision and/or using zooming software * Ensure sufficient margins exist around floated content so that it is clearly distinguishable from the content that flows around it * When floating primary content to the right, ensure that it is not positioned in the markup to accommodate the float (i.e., it occurs at the logical reading point so that it makes sense in non-visual playback contexts) |
| [font](http://www.w3.org/TR/CSS21/fonts.html#propdef-font) | The font property is a shorthand for defining one or more properties. Refer to each individual font-\* property for issues |
| [font-family](http://www.w3.org/TR/CSS21/fonts.html#propdef-font-family) | * Avoid fonts that do not provide sufficient character differentiation, such as sans-serif fonts that represent capital I, lower-case L and the number 1 as identical (or near-identical) characters (e.g., Arial). * Avoid cursive and highly ornamented fonts that can be difficult for users to decipher * Try to limit the number of fonts used in any given publication and use families consistently (e.g., one family for headings and one for body content) * Give preference to fonts that provide sufficient kerning between characters |
| [font-size](http://www.w3.org/TR/CSS21/fonts.html#propdef-font-size) | * Use relative sizes such as percentages and ems to facilitate scaling * Ensure default font size does not affect legibility of the prose (e.g., avoid specifying x-small, xx-small and equivalent font sizes) |
| [font-style](http://www.w3.org/TR/CSS21/fonts.html#propdef-font-style) | * Use CSS to apply italics only for decorative purposes (similar to using the i element). Use em tags if the words are to be stressed * Avoid lengthy use of decorative italics, as italicized words can be harder to read than roman face |
| [font-variant](http://www.w3.org/TR/CSS21/fonts.html#propdef-font-variant) |  |
| [font-weight](http://www.w3.org/TR/CSS21/fonts.html#propdef-font-weight) | * Use CSS to apply bolding only for decorative purposes (similar to using the b element). Use strong tags if the words are to be stressed * Avoid lengthy use of decorative bolding, as bolded words can be harder to read than roman face |
| [height](http://www.w3.org/TR/CSS21/visudet.html#propdef-height) | * Assistive technologies typically ignore content that has 0 height and/or width set on its containing element, so do not use this property to hide content that is only intended for non-visual playback. |
| [letter-spacing](http://www.w3.org/TR/CSS21/text.html#propdef-letter-spacing) | * The letter-spacing property can be used to increase the kerning between letters to improve the readability of tightly constructed fonts * Whitespace should never be added between the letters of a word that is not intended to be spelled out. Always use this property to visually expand the spacing between characters when such spacing is necessary |
| [line-height](http://www.w3.org/TR/CSS21/visudet.html#propdef-line-height) | * Use caution when changing line heights. Slight increases in the line height can improve overall readability, but too much space between lines can have the opposite effect (e.g., it becomes harder to distinguish paragraphs) * Avoid shrinking the line height to compress content |
| [list-style](http://www.w3.org/TR/CSS21/generate.html#propdef-list-style) | The list-style property is a shorthand for defining one or more properties. Refer to each individual list-style-\* property for issues |
| [list-style-image](http://www.w3.org/TR/CSS21/generate.html#propdef-list-style-image) | * Avoid using images to convey the meaning of a list. If the image is important to comprehension of the items, ensure that a semantic is attached to the list to convey that meaning. If the list represents a figure or aside, use the appropriate container element and include a caption |
| [list-style-position](http://www.w3.org/TR/CSS21/generate.html#propdef-list-style-position) |  |
| [list-style-type](http://www.w3.org/TR/CSS21/generate.html#propdef-list-style-type) | * Do not change the nature of a list using the list-style-type property (e.g., to not use the property to give an unordered list the appearance of ordering) |
| [max-height](http://www.w3.org/TR/CSS21/visudet.html#propdef-max-height)  [max-width](http://www.w3.org/TR/CSS21/visudet.html#propdef-max-width)  [min-height](http://www.w3.org/TR/CSS21/visudet.html#propdef-min-height)  [min-width](http://www.w3.org/TR/CSS21/visudet.html#propdef-min-width) |  |
| [orphans](http://www.w3.org/TR/CSS21/page.html#propdef-orphans)  [widows](http://www.w3.org/TR/CSS21/page.html#propdef-widows) |  |
| [outline](http://www.w3.org/TR/CSS21/ui.html#propdef-outline)  [outline-color](http://www.w3.org/TR/CSS21/ui.html#propdef-outline-color)  [outline-style](http://www.w3.org/TR/CSS21/ui.html#propdef-outline-style)  [outline-width](http://www.w3.org/TR/CSS21/ui.html#propdef-outline-width) | * Outlines surround borders and serve a similar function. The issues with each are the same. See the corresponding border properties for more information * Ensure when using both borders and outlines that sufficient contrast is maintained between them if they both visually convey information. |
| [overflow](http://www.w3.org/TR/CSS21/visufx.html#propdef-overflow) | * Avoid using the hidden value, as content may not be visible, especially when zoomed |
| [padding](http://www.w3.org/TR/CSS21/box.html#propdef-padding)  [padding-top](http://www.w3.org/TR/CSS21/box.html#propdef-padding-top)  [padding-right](http://www.w3.org/TR/CSS21/box.html#propdef-padding-right)  [padding-bottom](http://www.w3.org/TR/CSS21/box.html#propdef-padding-bottom)  [padding-left](http://www.w3.org/TR/CSS21/box.html#propdef-padding-left) |  |
| [page-break-after](http://www.w3.org/TR/CSS21/page.html#propdef-page-break-after)  [page-break-before](http://www.w3.org/TR/CSS21/page.html#propdef-page-break-before)  [page-break-inside](http://www.w3.org/TR/CSS21/page.html#propdef-page-break-inside) |  |
| [position](http://www.w3.org/TR/CSS21/visuren.html#propdef-position) | * Absolute positioning should not be used to re-order content differently than it is laid out in the markup * Elements should not be absolutely positioned in a way that makes their discoverability problematic for users with low vision and/or using zooming software * Note that the fixed value is not included in the EPUB 3 Style Sheets profile and its use is not recommended (see the [oeb-page-head and oeb-page-foot](http://idpf.org/epub3/latest/contentdocs#sec-css-oeb-head-foot) custom properties for including static headers and footers) |
| [quotes](http://www.w3.org/TR/CSS21/generate.html#propdef-quotes) |  |
| [table-layout](http://www.w3.org/TR/CSS21/tables.html#propdef-table-layout) |  |
| [text-align](http://www.w3.org/TR/CSS21/text.html#propdef-text-align) | * Avoid justifying text, as the uneven spacing that occurs between words can reduce the readability for some people. |
| [text-decoration](http://www.w3.org/TR/CSS21/text.html#propdef-text-decoration) | * Use the del element to semantically mark deleted text |
| [text-indent](http://www.w3.org/TR/CSS21/text.html#propdef-text-indent) | * A sometimes used trick to hide text for assistive technologies is to use a large negative value, but like negative margins this technique is not reliable in user agents and may cause issues depending on the user’s preferred text direction |
| [text-transform](http://www.w3.org/TR/CSS21/text.html#propdef-text-transform) | * Avoid lengthy decorative use of capitalization as it can make words difficult to distinguish and read |
| [vertical-align](http://www.w3.org/TR/CSS21/visudet.html#propdef-vertical-align) |  |
| [white-space](http://www.w3.org/TR/CSS21/text.html#propdef-white-space) |  |
| [width](http://www.w3.org/TR/CSS21/visudet.html#propdef-width) | * Assistive technologies typically ignore content that has 0 width and/or height set on its containing element, so do not use this property to hide content that is only intended for non-visual playback. |
| [word-spacing](http://www.w3.org/TR/CSS21/text.html#propdef-word-spacing) | * Increasing word spacing can help improve readability of tightly constructed fonts * Use this property in preference to adding non-breaking spaces to increase the space between words |
| [z-index](http://www.w3.org/TR/CSS21/visuren.html#propdef-z-index) |  |

Table 2. Not Recommended Classes

| **Property** | **Considerations** |
| --- | --- |
| [clip](http://www.w3.org/TR/CSS21/visufx.html#propdef-clip) | * Although clipping content to 1 pixel is sometimes used on the Web to hide content, support for the property and its reliance on absolute positioning makes the practice not recommended in EPUBs |
| [content](http://www.w3.org/TR/CSS21/generate.html#propdef-content) | * Any content inserted using this property should be purely presentational, as it typically won’t be available to assistive technologies |
| direction | * The direction property is not supported in EPUB 3. HTML5 markup, such as the [bdi](http://www.w3.org/TR/html/text-level-semantics.html#the-bdi-element) and [bdo](http://www.w3.org/TR/html/text-level-semantics.html#the-bdo-element) elements and [dir](http://www.w3.org/TR/html/dom.html#the-dir-attribute) attribute, should be used to express directionality |
| [margin](http://www.w3.org/TR/CSS21/box.html#propdef-margin)  [margin-top](http://www.w3.org/TR/CSS21/box.html#propdef-margin-top)  [margin-right](http://www.w3.org/TR/CSS21/box.html#propdef-margin-right)  [margin-bottom](http://www.w3.org/TR/CSS21/box.html#propdef-margin-bottom)  [margin-left](http://www.w3.org/TR/CSS21/box.html#propdef-margin-left) | * Note that user agents typically restrict the ability to modify body margins * Changing margins to move content off screen, common on the Web, is not guaranteed to work in user agents. This practice is also known to cause problems depending on the user’s preferred reading direction and the placement of the content so is not recommended for that reason, as well |
| [visibility](http://www.w3.org/TR/CSS21/visufx.html#propdef-visibility) | * Hidden content is not available to assistive technologies, so do not use this property to hide content from visual rendering that is intended to be read out |
| azimuth  cue  cue-after  cue-before  elevation  pause  pause-after  pause-before  pitch  pitch-range  play-during  richness  speak  speak-header  speak-numeral  speak-punctuation  speech-rate  stress  voice-family  volume | * Properties from the [CSS 2.1 Aural style sheets informative appendix](http://www.w3.org/TR/CSS21/aural.html) should not be used in EPUB 3. The ‘aural’ media type was deprecated by the same appendix, and the [CSS 3 Speech module](http://kb.daisy.org/publishing/docs/css/reference.html#css3speech) defines the properties for the new ‘speech’ type. |

### CSS 2.1 Pseudo-Classes

| **Pseudo-Class** | **Considerations** |
| --- | --- |
| [:active](http://www.w3.org/TR/CSS21/selector.html#dynamic-pseudo-classes) |  |
| [:first-child](http://www.w3.org/TR/CSS21/selector.html#first-child) |  |
| [:focus](http://www.w3.org/TR/CSS21/selector.html#dynamic-pseudo-classes) |  |
| [:hover](http://www.w3.org/TR/CSS21/selector.html#dynamic-pseudo-classes) | The :hover pseudo-selector should never be used, as it is not device independent and may not be activatable by many users as ebook users typically do not have mice. |
| [:lang](http://www.w3.org/TR/CSS21/selector.html#lang) |  |
| [:link](http://www.w3.org/TR/CSS21/selector.html#link-pseudo-classes) |  |
| [:visited](http://www.w3.org/TR/CSS21/selector.html#link-pseudo-classes) |  |

### CSS 2.1 Pseudo-Elements

|  |  |
| --- | --- |
| **Pseudo-Element** | **Considerations** |
| [:before](http://www.w3.org/TR/CSS21/selector.html#before-and-after) and [:after](http://www.w3.org/TR/CSS21/selector.html#before-and-after) | * Not all assistive technologies announce text injected using the :before and :after pseudo-elements. * Since the expected behavior is to announce the injected text, avoid the using the pseudo-elements for decorative purposes. * Users without CSS support will not have access to the injected text. |
| [:first-letter](http://www.w3.org/TR/CSS21/selector.html#first-letter) |  |
| [:first-line](http://www.w3.org/TR/CSS21/selector.html#first-line-pseudo) |  |

## Images

### Image File Types

Acceptable file types include JPG, PNG and SVG (as per EPUB3 guidelines).

### Recommended Criteria

|  |  |
| --- | --- |
| Resolution | Minimum 72 dpi |
| Compression | JPG Medium |
| Color space | 24-bit color (RGB) or Grayscale |
| Format | JPG for grayscale and color pictures and photographs. |
| Reading orientation | Position per reading order. Rotated landscape images in print versions are rotated for presentation in the EPUB. |
| Size | Reference Standard CSS |
| Presentation | Maximum File Size should not exceed 1 Mb. Reprocess images greater than 1Mb in size by applying higher compression (not to exceed JPG Medium) or resampling to reduce the DPI. |
| Exception note | 1. If a file is less than 1Mb and jpg, use jpg as is. 2. If a file is equal to or greater than 1Mb in size apply the following treatment in Photoshop CC 3. Image Size > Adjust dpi to 96 dpi with Resample set to Bicubic Sharper (Reduction) 4. Save As JPEG, Quality Setting to 8 (High), Optimized 5. The above can be batch processed. |

**Note**: For EPUB source files, retain the images as per the source EPUB file with the aforementioned properties.

### Cover Image

#### The cover must consist of an XHTML file containing nothing but an image. The image must be styled to take up the entire height of the screen. This can be achieved using the CSS below (just an example) or follow sample CSS if available:

img.cover

{

height: 100%

}

#### Declare the cover in metadata (OPF) (mandatory).

#### Capture cover related metadata as follows in .opf file:

<meta name="cover" content="cover-image" />

<item id="cover-image" href="images/cover.jpg" media-type="image/jpeg"/>

#### Minimum width of the cover should be more than 600 px and minimum height of the cover should be 800 px captured proportionately.

#### If the cover size of the source EPUB file is too small, then retain the cover per the source EPUB cover. Do not increase the size of the source EPUB cover.

#### The cover image needs to fit the page when viewed in Readium ereader to cover as much white space as possible.

### Image/Graphic Placement

For any object rendered as an image/graphic that occurs in the midst of a paragraph and interrupts text, it shall be placed either at the end of the preceding paragraph or the beginning of the nearest following paragraph within the specific page. Final placement of the image is dependent on the closest paragraph’s proximity. The image must stay within the page marker it occurs on in the source PDF. If an image interrupts text, and no paragraph tag that starts or ends on the same page, then keep the image in its original location.

## Fonts

If the input EPUB file contains fonts, then retain them in the output EPUB3 files. For web-ready PDF input files, do not embed fonts, unless otherwise requested by customer.

## Formatting

Retain as much as possible of the formatting of the source EPUB and PDF files in the output EPUB3 file.

## Boxed Text

Treat as text + images in reading order.

## Marginalia and Sidebars

Treat as text + images in reading order.

## Reading Order

Retain the reading order of the EPUB source files in the EPUB3 output. For the PDF source files, then match the source reading order in the EPUB3 output.

## DPUB ARIA Semantics

Apply DPUB ARIA semantic attributes according to the type of content. Refer the link for code samples: <https://www.w3.org/TR/dpub-aria-1.0/>

|  |  |
| --- | --- |
| doc-abstract | A short summary of the principle ideas, concepts and conclusions of the work, or of a section or excerpt within it. |
| doc-acknowledgments | A section or statement that acknowledges significant contributions by persons, organizations, governments and other entities to the realization of the work. |
| doc-afterword | A closing statement from the author or a person of importance, typically providing insight into how the content came to be written, its significance, or related events that have transpired since its timeline. |
| doc-appendix | A section of supplemental information located after the primary content that informs the content but is not central to it. |
| doc-backlink | A link that allows the user to return to a related location in the content (e.g., from a footnote to its reference or from a glossary definition to where a term is used). |
| doc-biblioentry | A single reference to an external source in a bibliography. A biblioentry typically provides more detailed information than its reference(s) in the content (e.g., full title, author(s), publisher, publication date, etc.). |
| doc-bibliography | A list of external references cited in the work, which may be to print or digital sources. |
| doc-biblioref | A reference to a bibliography entry. |
| doc-chapter | A major thematic section of content in a work. |
| doc-colophon | A short section of production notes particular to the edition (e.g., describing the typeface used), often located at the end of a work. |
| doc-conclusion | A concluding section or statement that summarizes the work or wraps up the narrative. |
| doc-cover | An image that sets the mood or tone for the work and typically includes the title and author. |
| doc-credit | An acknowledgment of the source of integrated content from third-party sources, such as photos. Typically identifies the creator, copyright and any restrictions on reuse. |
| doc-credits | A collection of credits. |
| doc-dedication | An inscription at the front of the work, typically addressed in tribute to one or more persons close to the author. |
| doc-endnote | One of a collection of notes that occur at the end of a work, or a section within it, that provides additional context to a referenced passage of text. |
| doc-endnotes | A collection of notes at the end of a work or a section within it. |
| doc-epigraph | A quotation set at the start of the work or a section that establishes the theme or sets the mood. |
| doc-epilogue | A concluding section of narrative that wraps up or comments on the actions and events of the work, typically from a future perspective. |
| doc-errata | A set of corrections discovered after initial publication of the work, sometimes referred to as corrigenda. |
| doc-example | An illustration of a key concept of the work, such as a code listing, case study or problem. |
| doc-footnote | Ancillary information, such as a citation or commentary, that provides additional context to a referenced passage of text. |
| doc-foreword | An introductory section that precedes the work, typically not written by the author of the work. |
| doc-glossary | A brief dictionary of new, uncommon or specialized terms used in the content. |
| doc-glossref | A reference to a glossary definition. |
| doc-index | A navigational aid that provides a detailed list of links to key subjects, names and other important topics covered in the work. |
| doc-introduction | A preliminary section that typically introduces the scope or nature of the work. |
| doc-noteref | A reference to a footnote or endnote, typically appearing as a superscripted number or symbol in the main body of text. |
| doc-notice | Notifies the user of consequences that might arise from an action or event. Examples include warnings, cautions and dangers. |
| doc-pagebreak | A separator denoting the position before which a break occurs between two contiguous pages in a statically paginated version of the content. |
| doc-pagelist | A navigational aid that provides a list of links to the pagebreaks in the content. |
| doc-part | A major structural division in a work that contains a set of related sections dealing with a particular subject, narrative arc or similar encapsulated theme. |
| doc-preface | An introductory section that precedes the work, typically written by the author of the work. |
| doc-prologue | An introductory section that sets the background to a work, typically part of the narrative. |
| doc-pullquote | A distinctively placed or highlighted quotation from the current content designed to draw attention to a topic or highlight a key point. |
| doc-qna | A section of content structured as a series of questions and answers, such as an interview or list of frequently asked questions. |
| doc-subtitle | An explanatory or alternate title for the work, or a section or component within it. |
| doc-tip | Helpful information that clarifies some aspect of the content or assists in its comprehension. |
| doc-toc | A navigational aid that provides an ordered list of links to the major sectional headings in the content. A table of contents may cover an entire work, or only a smaller section of it. |

## Accessibility

Apply the following points to make the output accessible (recommended practice).

* Image should be provided with alt text (if provided by customer) and decorative images should be left blank
* All the elements should be marked with appropriate tags. See links for more detail.

<http://kb.daisy.org/publishing/>

<https://idpf.github.io/a11y-guidelines/>

* Color contrast should be 4.5:1 which can be checked through ACE epub accessibility checker
* Zoom the text to 200% and ensure that the epub file remains readable without any text cut issues
* Text should not be captured as image
* Each HTML page should have proper title and the title should reflect the page title
* Language of the page should be defined and any other language text inside the content should be defined with proper language code

# Production Procedure – EPUB to EPUB3

#### [Section intentionally left blank.]

# Production Procedure – PDF to EPUB3

#### [Section intentionally left blank.]