



EPUB 3: What does it offer and is it ready?

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Introduction

— [Scott Prentice, President of Leximation, Inc.

— [Specializing in FrameMaker plugin development as well as structured FrameMaker conversions, consulting, and development. FrameMaker user/developer since 1991.

— [Developed DITA-FMx, a FrameMaker plugin for efficient DITA authoring and publishing.

— [Consulting for custom Help systems, creative/functional web applications, and EPUB solutions.

EPUB basics

- [An EPUB is an ebook file format that can be read on almost every device and platform
- [A collection of XHTML, XML, CSS, and media files wrapped up in a “zip” archive
- [Requires a “reader” application or dedicated reader device

History of the EPUB format

— [EPUB specification is maintained by IDPF

— [Initial EPUB format approved in 2007, superseding Open eBook standard

— [EPUB 2.0.1 approved 2010

— [EPUB 3 approved October 2011

— [EPUB 3 Fixed Layout format approved May 2012

— [EPUB 3 Dictionaries and Indexes Working Groups, in progress

What's New in EPUB 3?

— [Content files now based on HTML 5 (XHTML 5)

— [New HTML5-based TOC component (NAV)

— [Ability to embed multimedia (both audio and video)

— [Media overlays provide ability to “read-along” by syncing audio to the highlighting of words

— [Scripting support allows dynamic interaction with content

— [Better SVG graphic support

What's New in EPUB 3? (2)

— [Better support for fonts and page layout via CSS 2.1/CSS 3

— [EPUB-specific CSS extensions

— [Better support for Asian language documents

— [MathML support

— [Fixed layout support

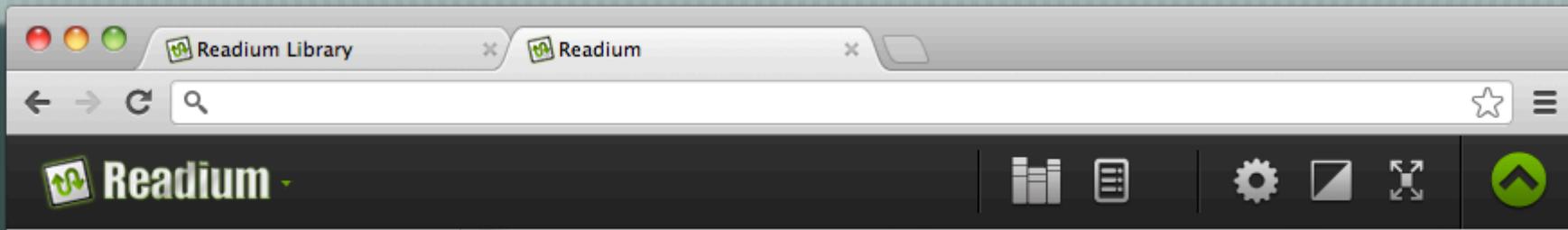
— [Semantic inflection (epub:type attribute values)

HTML 5: Navigation

— [`<nav>` tag specifies the TOC hierarchy and links

— [Other optional `<nav>` tags can be used to define additional navigation hierarchies (LOT, LOI, etc.)

— [Replaces the EPUB 2 NCX file (NCX should be included as fallback for older readers)



Contents

- EPUB 3 Feature Testing
- Basic HTML5 Tags
- Footnotes
- Video and epub:trigger
- MathML
- SVG Testing
- Gury

List of Tables

- Table 1: New Information
- Table 2: Old Information
- Table 3: More Information

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:epub="http://www.idpf.org/2007/ops">
  <head>
    <link rel="stylesheet" type="text/css" href="stylesheet.css"/>
  </head>
  <body>
    <nav epub:type="toc" id="toc">
      <h1>Contents</h1>
      <ol>
        <li><a href="front-cover.xhtml">EPUB 3 Feature Testing</a></li>
        <li><a href="chapter1.xhtml">Basic HTML5 Tags</a></li>
        <li><a href="chapter2.xhtml">Footnotes</a></li>
        <li><a href="chapter3.xhtml">Video and epub:trigger</a></li>
        <li><a href="chapter4.xhtml">MathML</a></li>
        <li><a href="chapter5.xhtml">SVG Testing</a></li>
        <li><a href="chapter6.xhtml">Gury</a></li>
      </ol>
    </nav>
    <nav epub:type="lot" id="lot">
      <h1>List of Tables</h1>
      <ol>
        <li><a href="chapter1.xhtml">Table 1: New Information</a></li>
        <li><a href="chapter2.xhtml">Table 2: Old Information</a></li>
        <li><a href="chapter3.xhtml">Table 3: More Information</a></li>
      </ol>
    </nav>
  </body>
</html>
```

HTML 5: Multimedia

— [`<audio>` and `<video>` tags provide multimedia support

— [For audio support, MP3 is required and MP4 is recommended

— [For video support, readers may use H.264 or VP8 codecs (but neither is required!)

— [The `epub:trigger` tag adds user controls

Browser tabs: Radium Library, Radium

Address bar: Search icon, star icon, menu icon

Navigation bar: Radium logo, list icon, settings icon, close icon, full screen icon, back icon

Video



Play/Resume Pause Mute Unmute

EPUB3 Test

Video

A landscape photograph identical to the one in the browser window, but with a large white play button icon centered over it. The video player has black bars on the left and right sides.

Play/Resume Pause Mute Unmute

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HTML 5: Layout Enhancements

— [`<header>` and `<footer>` tags provide containers for book-specific content (although, not as useful as one would hope)

— [`<aside>` tag provides a container for “out of the flow” or tangential content, like footnotes

— [These tags require CSS tagging or semantic inflection (`@epub:type`) for proper rendering

— [`<bdi>` and `<bdo>` for bidirectional content (don't use CSS)

IV. John Prentys was Rector of Winterborn, Bradston, Aug. 22, 1713, and Prebendary of York, North Newbold, which he resigned Aug. 22, 1723. A few other early names are in the Great Britain branches.

The name in America is believed to have been originally spelled *Prentice*.² Some branches since spell it *Prentiss*, and some *Prentis*. In the the different b or written by th erwise written Prentice, of Ne did Henry the Some branche Prentis and Pr Prentice. Man branches have to *tiss* or *tice*, necessary in tr spelled each w

2

On old records in New England, names of individuals were often written by town clerks, etc., from *their* mode of spelling, from the *sound* of a name. The original Roxbury and Cambridge branches spelled Prentice. Valentine, of Roxbury, name was spelled there on the records *tice*; but after his son, John the "smith," went to New London, Ct., that name there is spelled Prentis, and is so continued in that branch, though some of the subsequent families of it have since spelled *tiss* and *tice*.

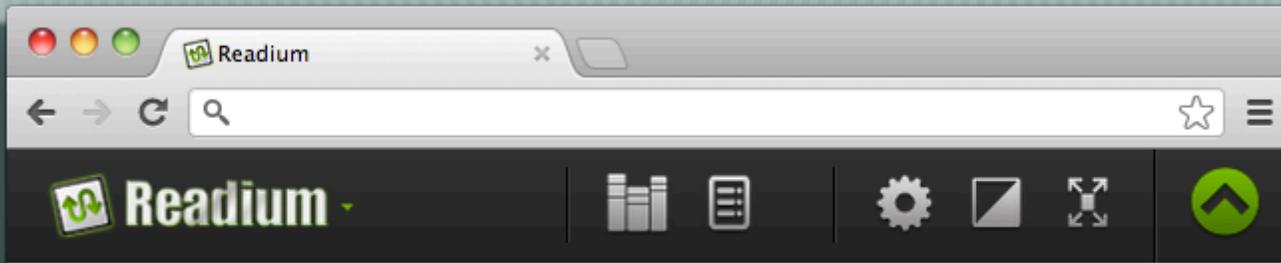
The first one of the name yet found recorded in America was Valentine Prentice, who came over from Nazing, Essex County, Eng, with the apostle "Eliot," in 1631, with his wife, Alice, and son, John Prentice (another child died on the passage), and settled in Roxbury, Mass. It is supposed that Valentine, of Roxbury, Robert, of Roxbury, Henry, of Cambridge, and Capt. Thomas, of Cambridge and Newton, were in some way connected. The descendants of Valentine, Henry and Capt. Thomas will be given in the following pages, and Robert, and descendants further on.

CAMBRIDGE, MASS., BRANCH

1. HENRY PRENTICE, "planter," of Cambridge, Mass., was there before 1640, and probably born in England. He was a mem-

HTML 5: MathML and SVG

- [Readers should fully support MathML for the display of mathematic equations via the `<math>` tag
- [SVG fragments may be embedded in XHTML documents with the `<svg>` tag
- [SVG documents may be referenced in `` tags
- [SVG documents can be included directly in the EPUB spine



MathML test

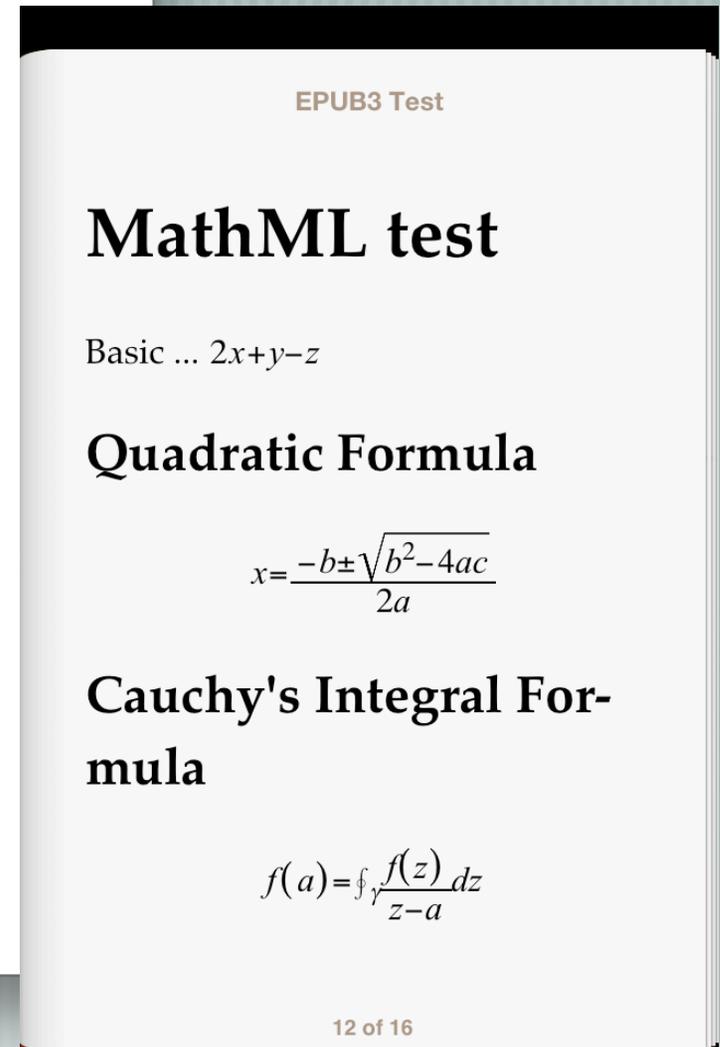
Basic ... $2x + y - z$

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Cauchy's Integral Formula

$$f(a) = \oint_{\gamma} \frac{f(z)}{z - a} dz$$



EPUB3 Test

MathML test

Basic ... $2x+y-z$

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Cauchy's Integral Formula

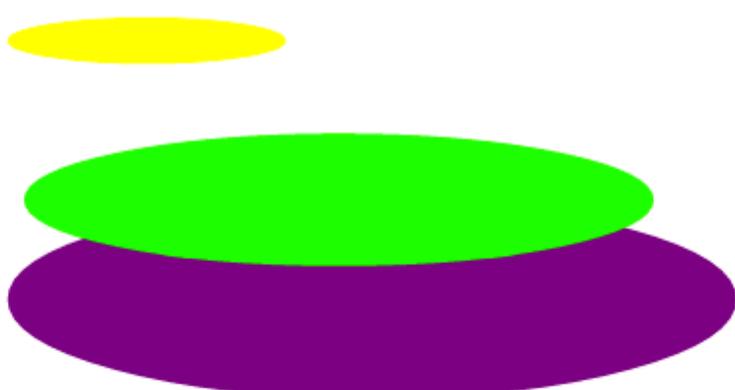
$$f(a) = \oint_{\gamma} \frac{f(z)}{z - a} dz$$

Readium Library x Readium x

← → ↻ 🔍 ☆ ☰

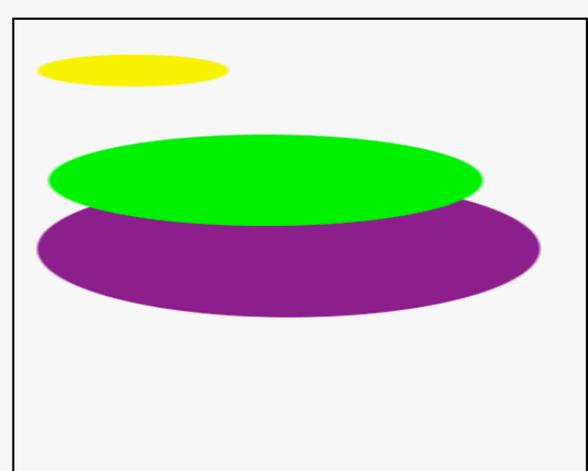
Readium

SVG Testing



EPUB3 Test

SVG Testing

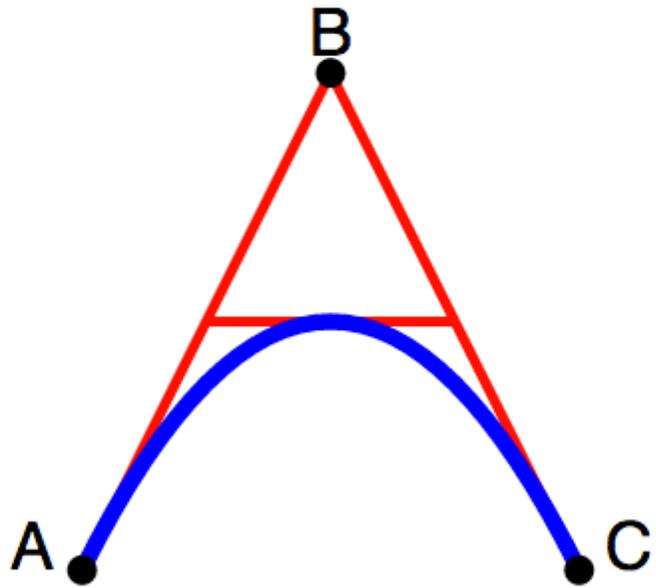


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Browser tabs: Radium Library, Radium

Address bar: Search icon, star icon, menu icon

Navigation bar: Radium logo, icons for library, list, settings, zoom, and back



EPUB3 Test

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HTML 5: Scripting Support

— [In EPUB 2 scripting was discouraged, that's no longer the case with EPUB 3

— [Enables interactive and dynamic layout capabilities

— [Make use of JavaScript libraries such as jQuery

— [`<canvas>` tag used for rendering of dynamic graphics

— [`epubReadingSystem` object allows scripts to query reading system capabilities

Readium Library x Readium x

← → ↻ 🔍 ☆ ☰

Readium [Icons: Bookshelf, List, Gear, Split, Fullscreen, Home]

jQuery and Gury

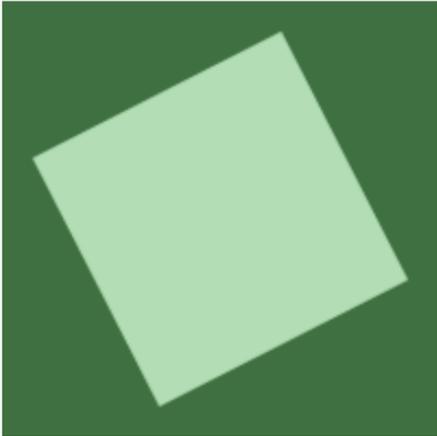
Hmm...



EPUB3 Test

jQuery and Gury

Hmm...



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Media Overlays

— [“Read-aloud” feature matches up specific tags in the HTML content with offsets in an included audio file

— [Mapping between tags in HTML file and audio segments is done with a SMIL file

— [Implementation of feature support will vary by reader

CHAPTER 1. LOOMINGS.

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.

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.

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;

Media Overlays (code)

```
<?xml version="1.0" encoding="UTF-8"?>
<smil
  xmlns="http://www.w3.org/ns/SMIL"
  xmlns:epub="http://www.idpf.org/2007/ops"
  version="3.0">
<body>
  <seq id="id1"
    epub:textref="chapter_001.xhtml"
    epub:type="bodymatter chapter">
    <par id="heading1">
      <text src="chapter_001.xhtml#c01h01"/>
      <audio src="audio/mobydick_001_002.mp4"
        clipBegin="0:00:24.500"
        clipEnd="0:00:29.268"/>
    </par>
    <par id="word1">
      <text src="chapter_001.xhtml#c01w00001"/>
      <audio src="audio/mobydick_001_002.mp4"
        clipBegin="0:00:29.268"
        clipEnd="0:00:29.441"/>
    </par>
    ...
  </seq>
</body>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<html
  xmlns="http://www.w3.org/1999/xhtml"
  xmlns:epub="http://www.idpf.org/2007/ops">
<head>
  <title>Moby-Dick</title>
  <link rel="stylesheet"
    href="css/stylesheet.css" type="text/css"/>
  <meta charset="utf-8"/>
</head>
<body>
  <section>
    <h1 id="c01h01">Chapter 1. Loomings.</h1>
    <p>
      <span id="c01w00001">Call</span>
      <span id="c01w00002">me</span>
      <span id="c01w00003">Ishmael.</span>
      ...
    </p>
  </section>
</body>
```

CSS 2.1

— [EPUB 3 supports all of CSS 2.1 properties except:

— unicode-bidi

— direction

— position: fixed

— [EPUB display property values (not new):

— oeb-page-head

— oeb-page-foot

CSS 3

CSS 3 support includes these modules:

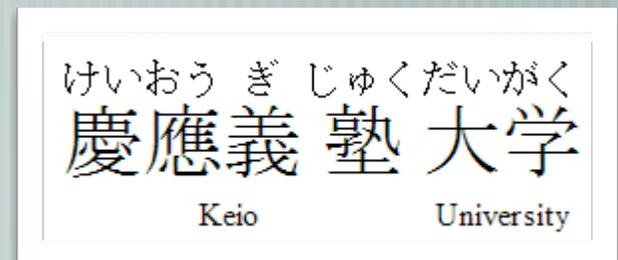
- Speech*
- Fonts
- Text*
- Media Queries
- Writing Modes (except direction and unicode-bidi)
- Namespace
- Multi-Column Layout
- Ruby*

* Only “-epub-” prefixed versions of some properties

tate-chu-yoko



ruby



Fixed Layout Support

- [EPUB 3 Fixed Layout specification was approved in May
- [Provides for non-reflowing (pre-paginated) documents
- [Ideal for documents where precise pagination and layout properties are required
- [Comic books, children's books, art books, magazines, other specialized documents



Courtesy of Liz Castro:

<http://www.pigsgourdsandwikis.com/2012/07/epub-3-has-finally-arrived.html>

Authoring/Conversion Tools

— [Authoring and conversion tools that “support” EPUB 3:

— Adobe InDesign CS6

— Adobe RoboHelp 10

— BlueGriffon EPUB Edition

— ComponentOne Doc-To-Help 2012

— SyncRO Soft oXygen XML Editor 14

— DocBook to EPUB XSLT

— Apple iBooks Author .. ?

Reader Support

— [Reading systems that “support” EPUB 3 features:

— Apple iBooks (iOS)

— AZARDI Desktop 11 (Mac, Windows, Linux) and
AZARDI OL (browser)

— Kobo reader and Kobo app (iOS)

— Radium (Google Chrome browser plugin)

— Plus a few “educational” readers

EPUB 2 or EPUB 3?

- [EPUB 3 reading systems should support EPUB 2 documents

- EPUB 2 files should work properly in all readers

- [EPUB 2 reading systems should support “simple” EPUB 3 documents that include the NCX (TOC)

- Should support basic HTML 5 content in an EPUB 3

- EPUB-3-specific features will likely not work

EPUB 2 or EPUB 3? (2)

— [Until there is better reader support for EPUB 3 ..

— Stick with EPUB 2 documents

— Or very basic EPUB 3 documents

— Unless you know that your target audience is using an EPUB 3 reader that supports your features

Resources

[EPUB 3 specification - idpf.org/epub/30

[EPUB 3 Fixed Layout Format specification - idpf.org/epub/fxl

[CSS 3 Module Info - www.css3.info/modules

[Liz Castro - www.pigsgourdsandwikis.com

[Ebook Ninjas Podcasts - ebookninjas.com

[Resources - www.epubtest.com/resources.php

[Follow #eprdctn on Twitter

[Scott Prentice <[scott AT leximation.com](mailto:scott@leximation.com)> - www.leximation.com