

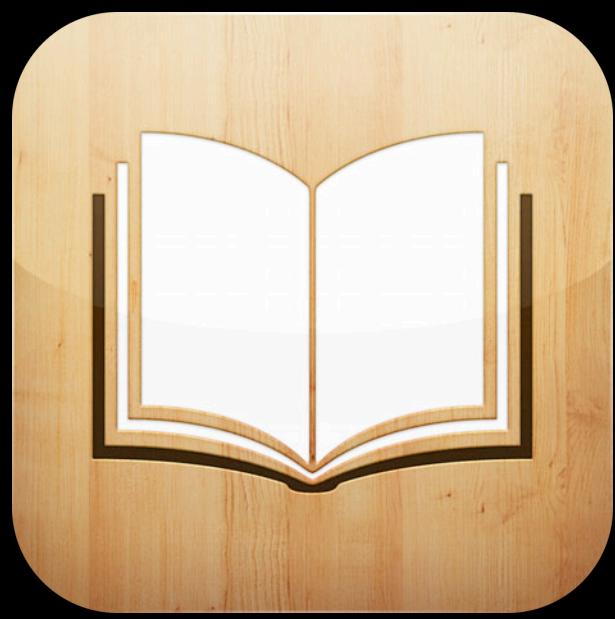
# HTML, CSS, and DOM for Book Authors

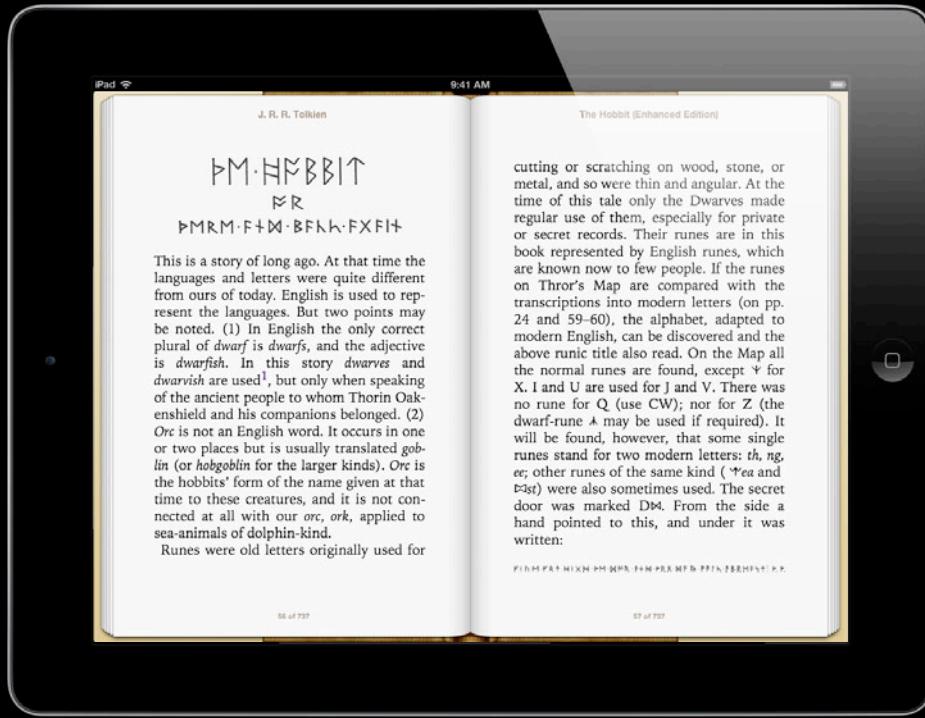
Session 515

Edward O'Connor

Safari Web Technology Engineer

These are confidential sessions—please refrain from streaming, blogging, or taking pictures





## Flowing Books



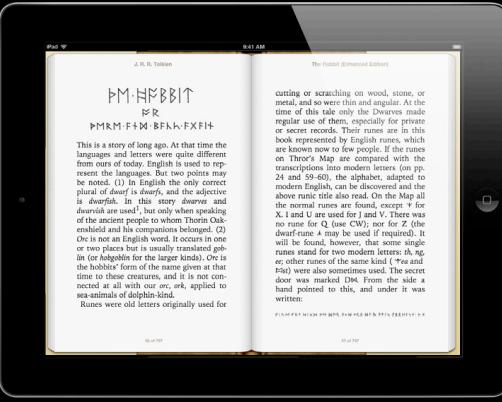
## Fixed Layout Books



## Fixed Layout Books



## Multi-Touch Books





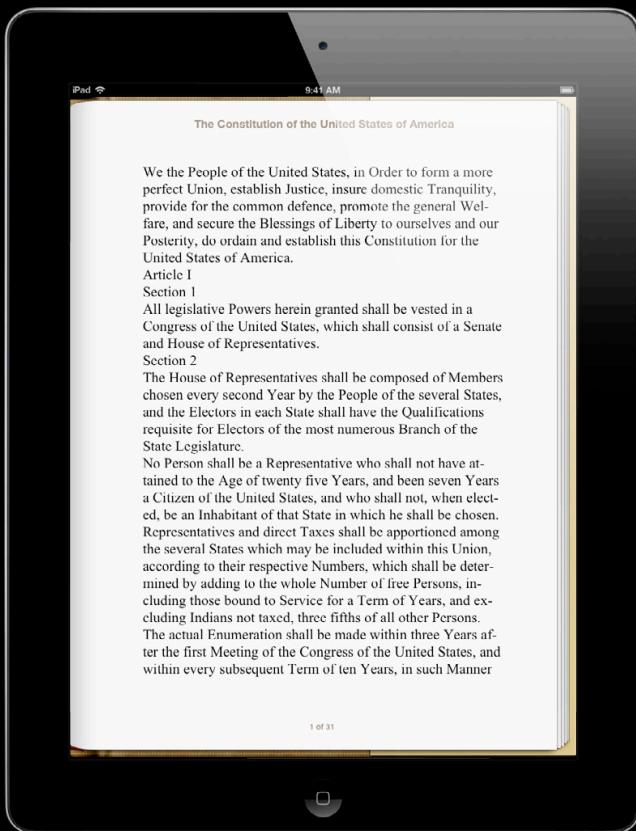
# What You Will Learn

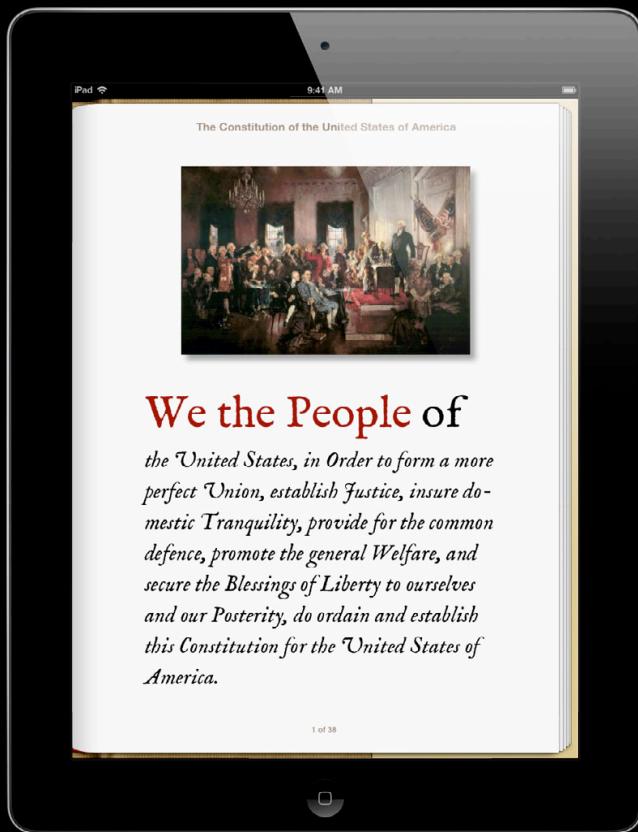
## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

# Gorgeous Text and Images

Styling traditional books for digital display





## We the People of

*the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.*

# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

# Structure and HTML

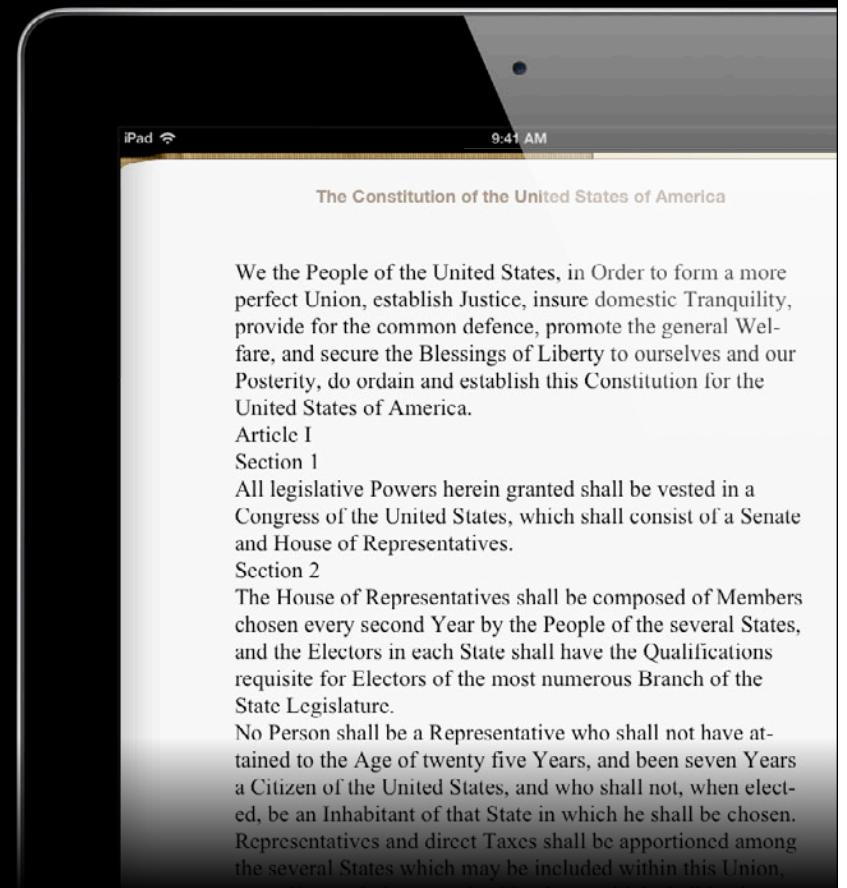
- Use meaningful elements

We the People [...] do ordain and establish this Constitution for the United States of America.<br/>

Article I<br/>

Section 1<br/>

All legislative Powers herein granted [...]



# Structure and HTML

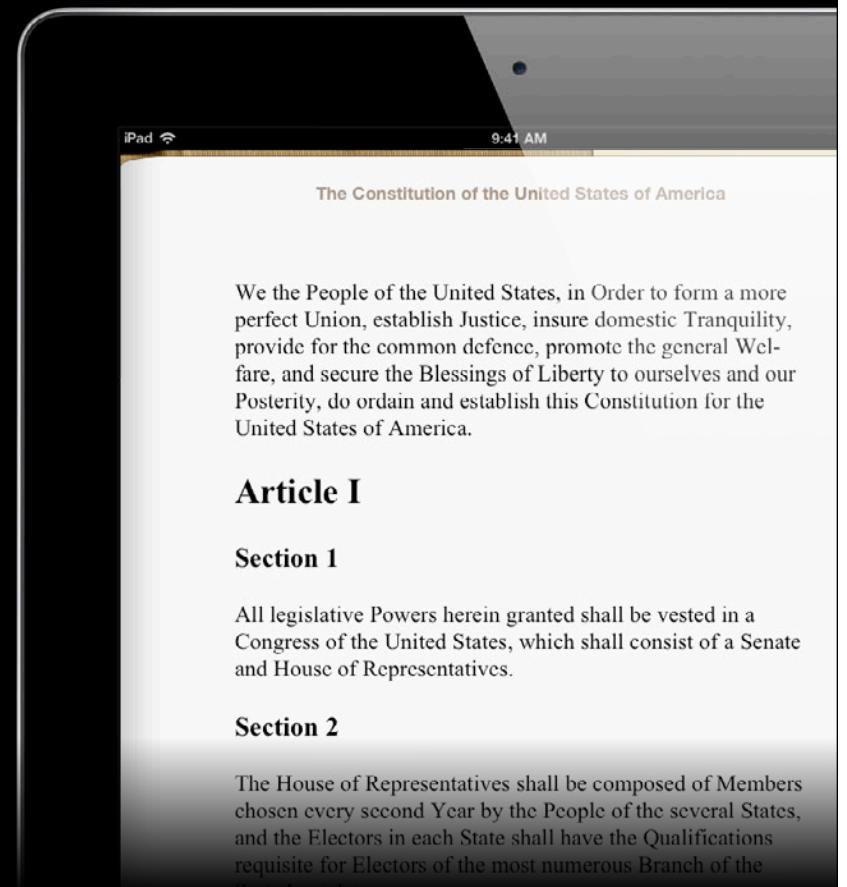
- Use meaningful elements

```
<p>  
We the People [...] do ordain and establish  
this Constitution for the United States  
of America.  
</p>
```

```
<h2>Article I</h2>
```

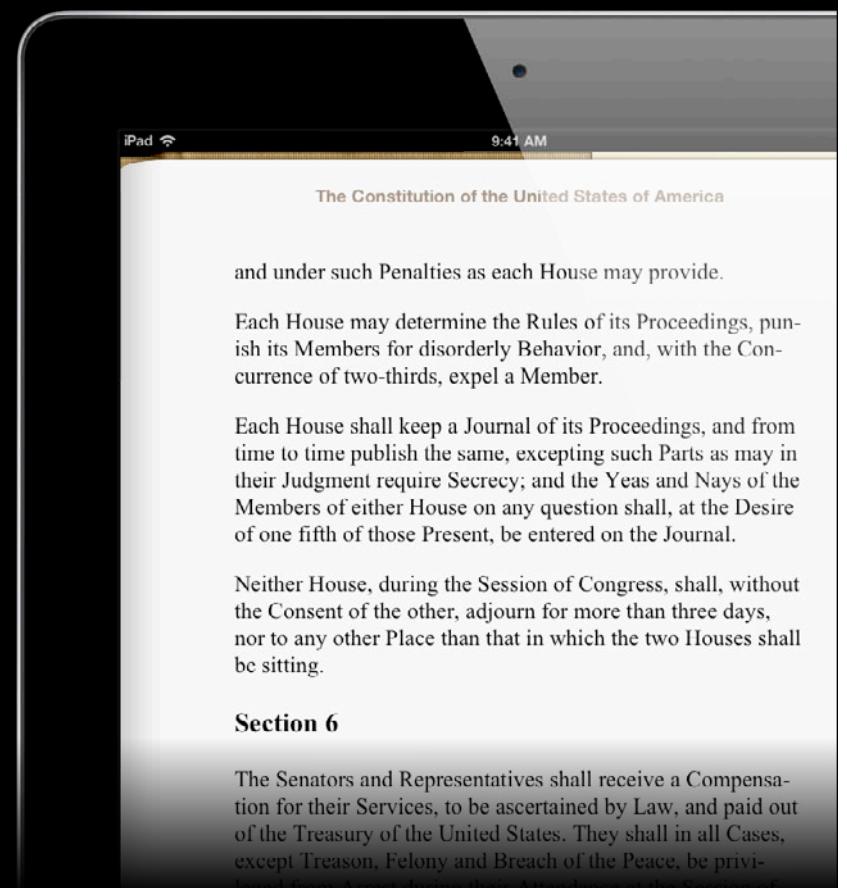
```
<h3>Section 1</h3>
```

```
<p>  
All legislative Powers herein granted [...]
```



# Structure and HTML

- Indentation
- Margins



# Styling Text

## CSS

- How things should look
- Link to the stylesheet in the head of your XHTML document

```
<head>
  ...
  <link rel="stylesheet" href="style.css" />
</head>
```

# Styling Text

## CSS

- How things should look
- Link to the stylesheet in the head of your XHTML document

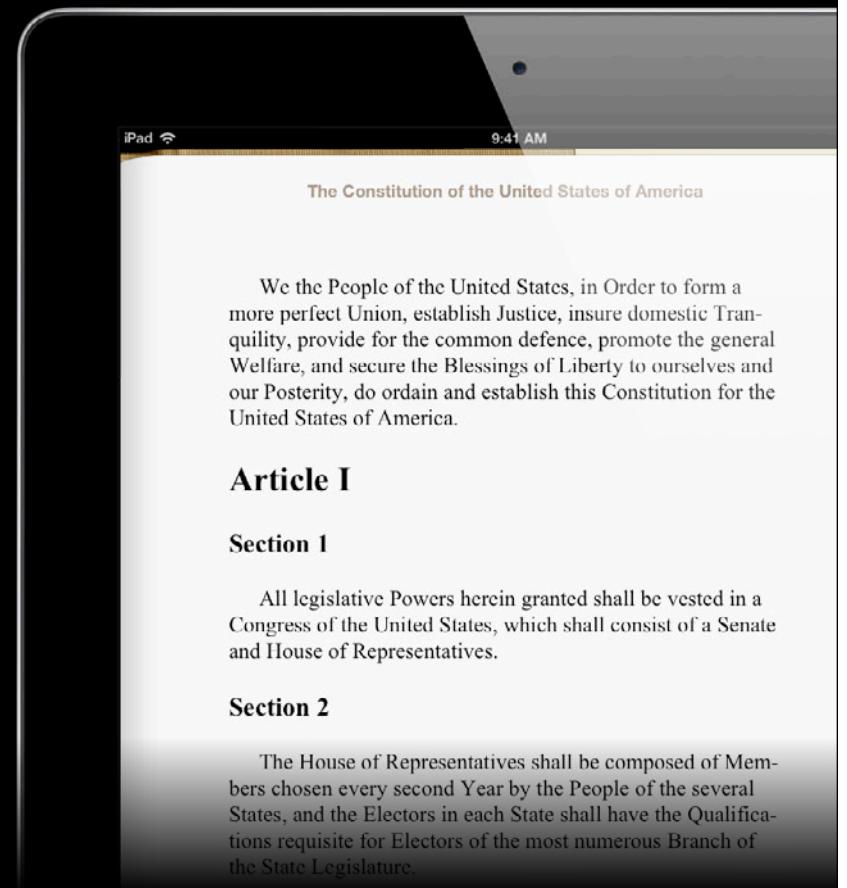
```
<head>
  ...
  <link rel="stylesheet" href="style.css" />
</head>
```

# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

```
p {  
    text-indent: 30px;  
}
```

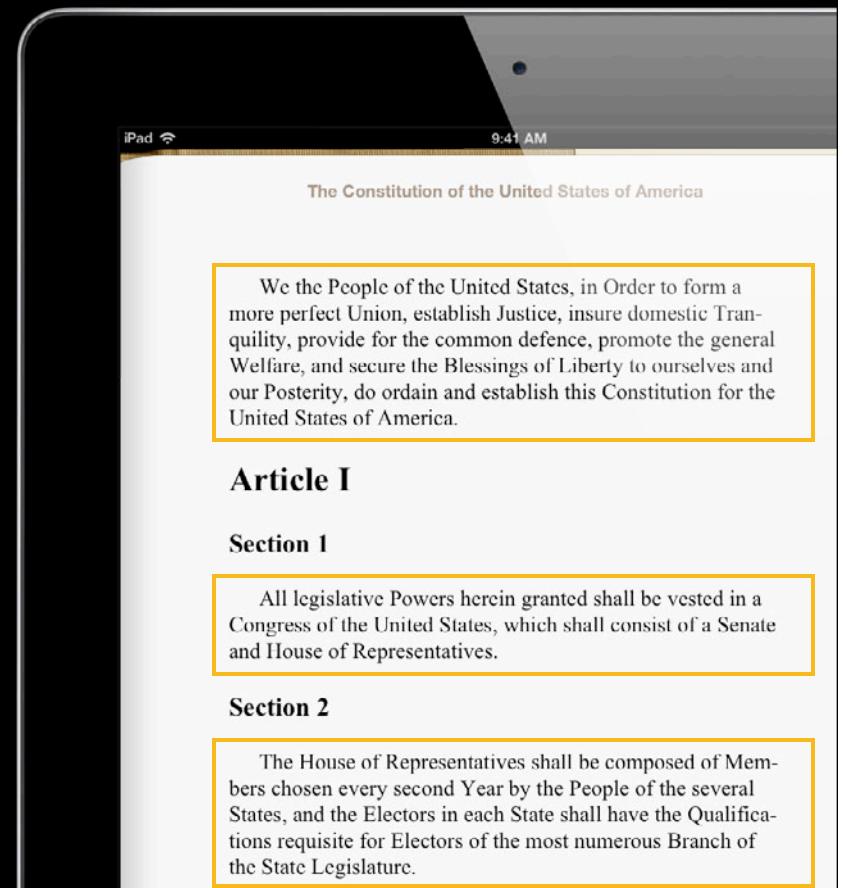


# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

```
p {  
    text-indent: 30px;  
}
```



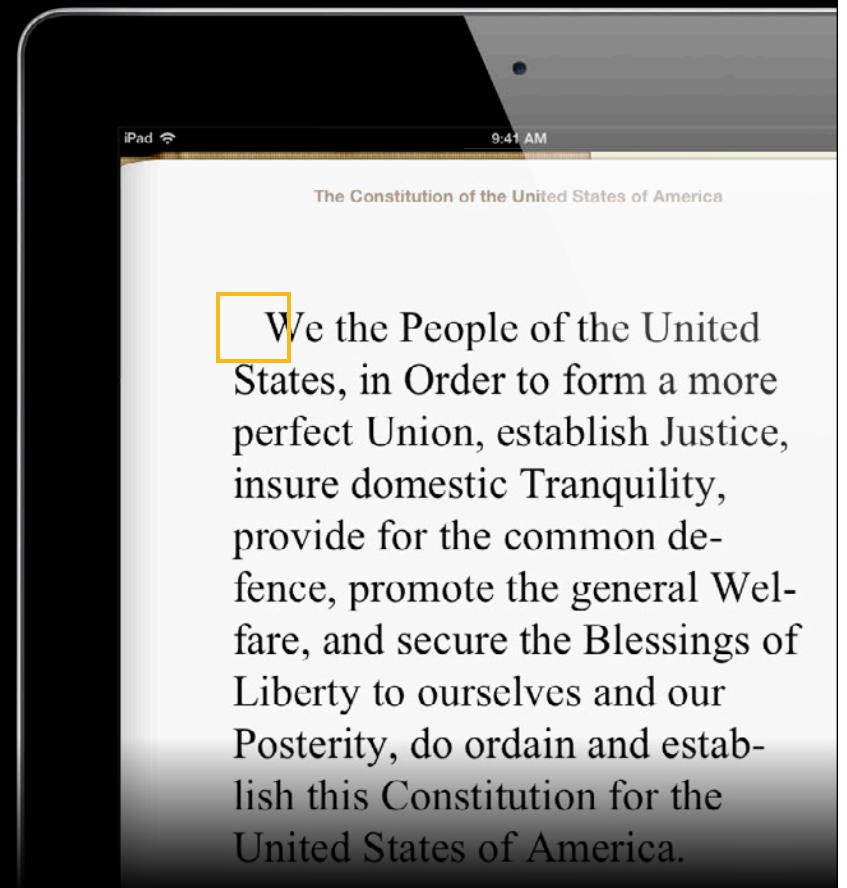
# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

```
p {  
    text-indent: 30px;  
}
```

- Users can change the font size



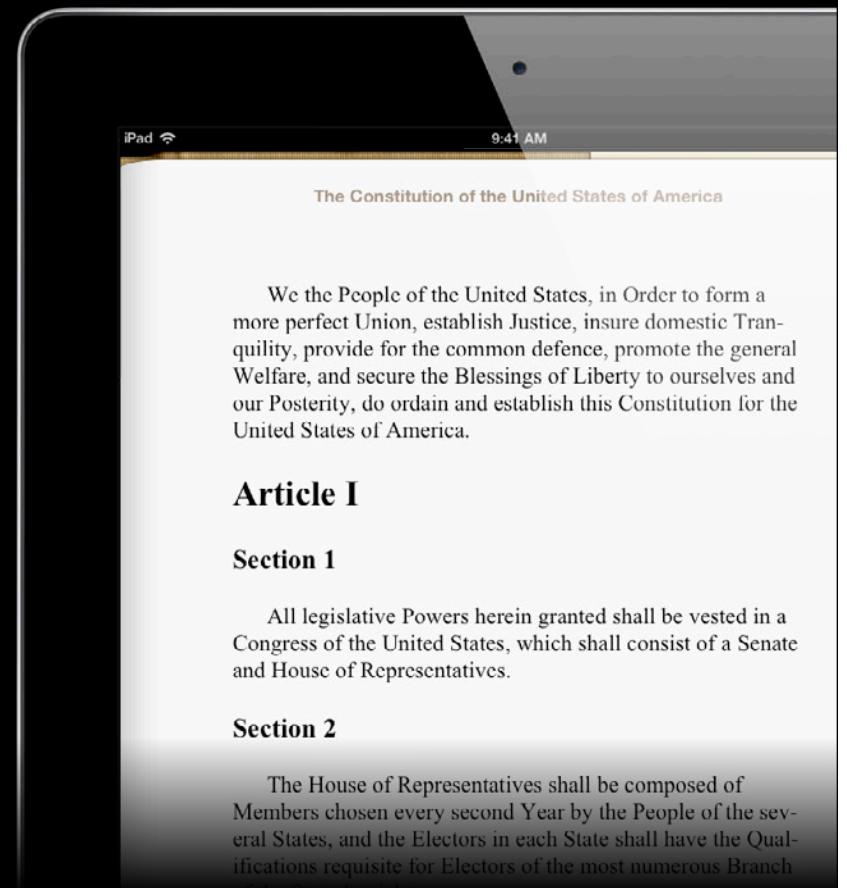
# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

```
p {  
    text-indent: 1.5em;  
}
```

- Users can change the font size
- Font-relative units



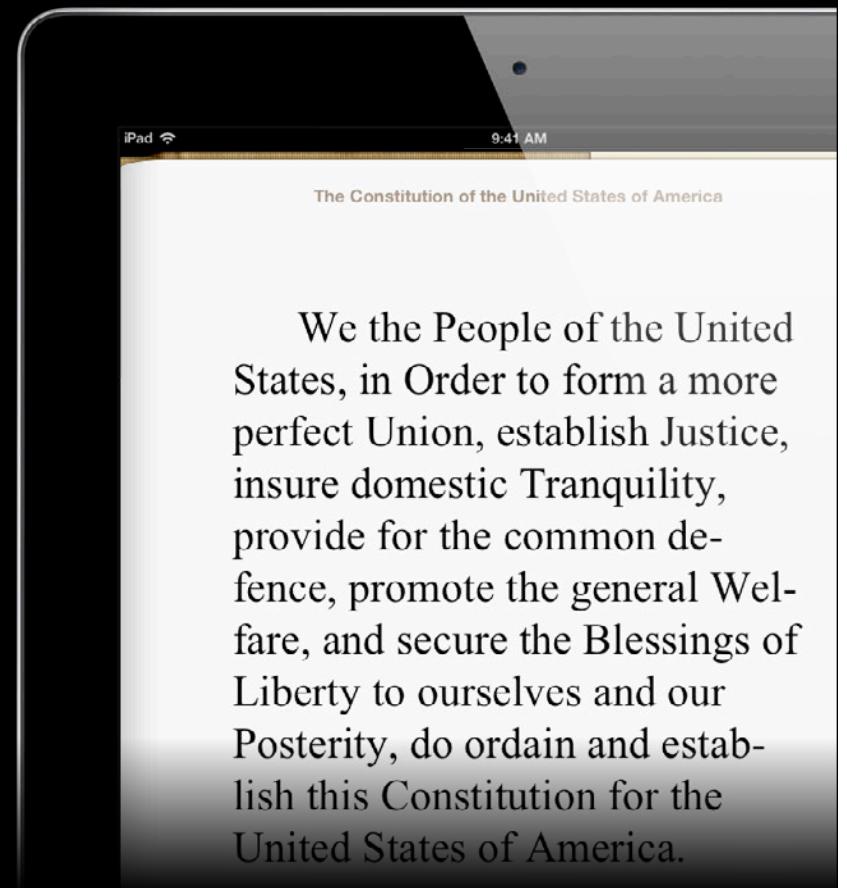
# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

```
p {  
    text-indent: 1.5em;  
}
```

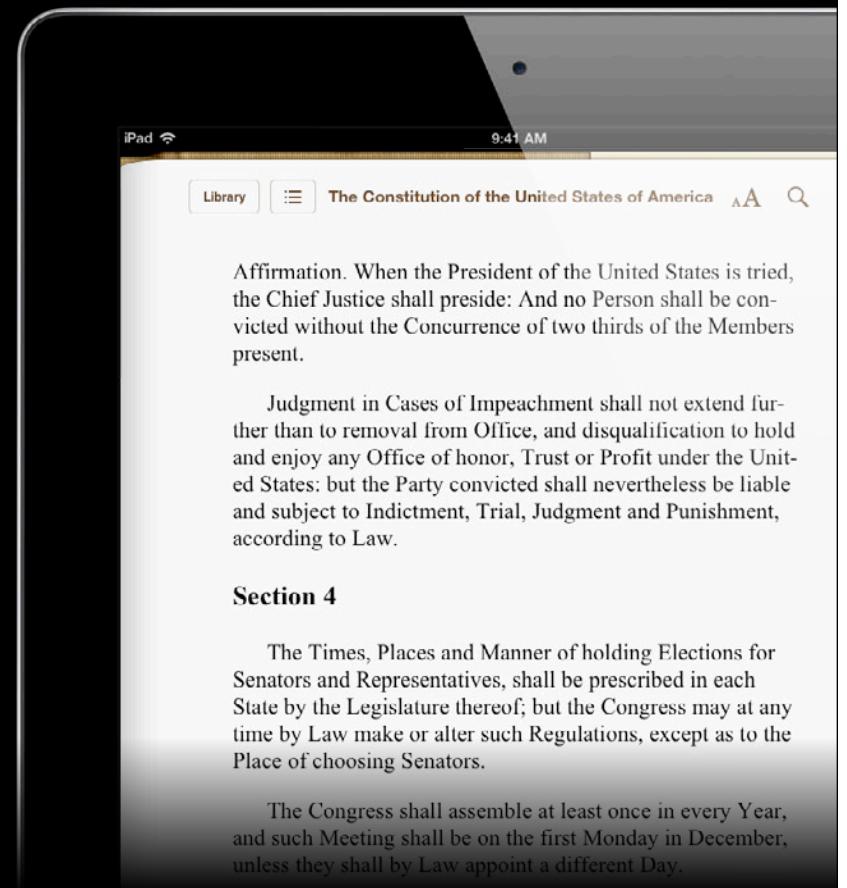
- Users can change the font size
- Font-relative units



# Text

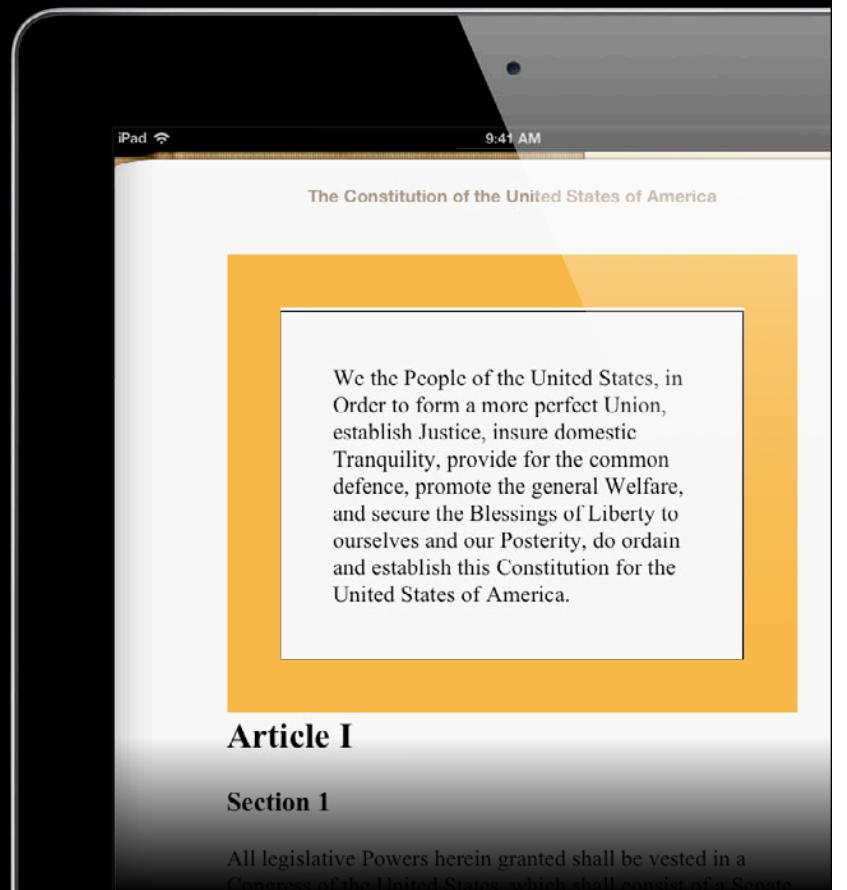
## Sizing and indenting your prose

- Space around elements
  - Margins
  - Padding



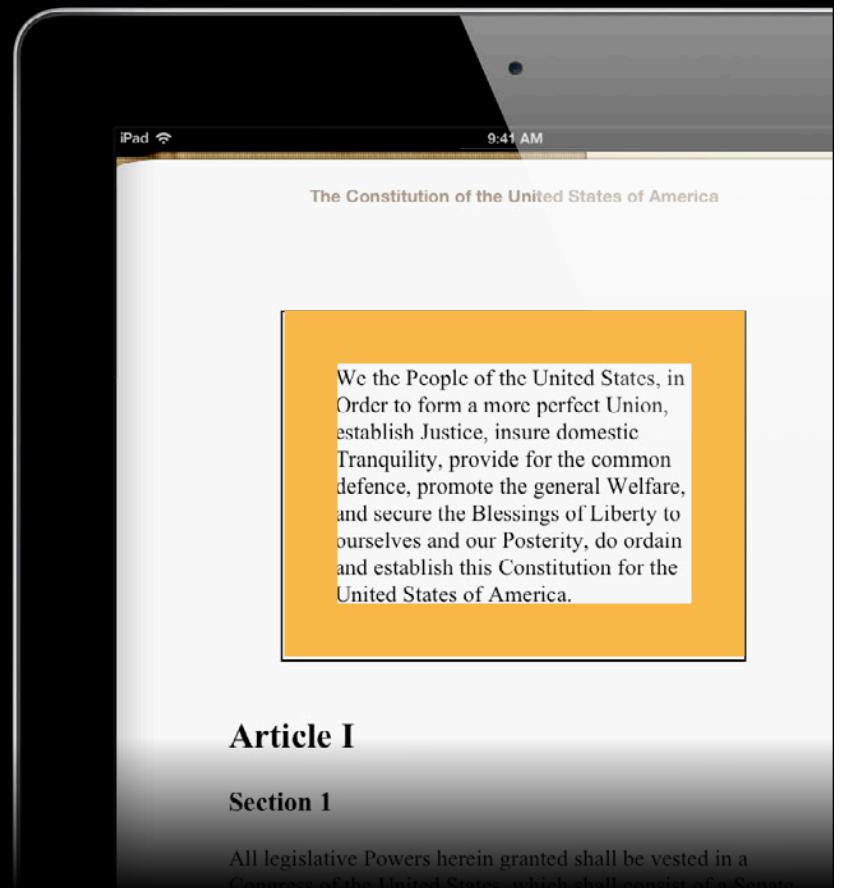
# Margins and Padding

- Margins outside border



# Margins and Padding

- Margins outside border
- Padding inside border

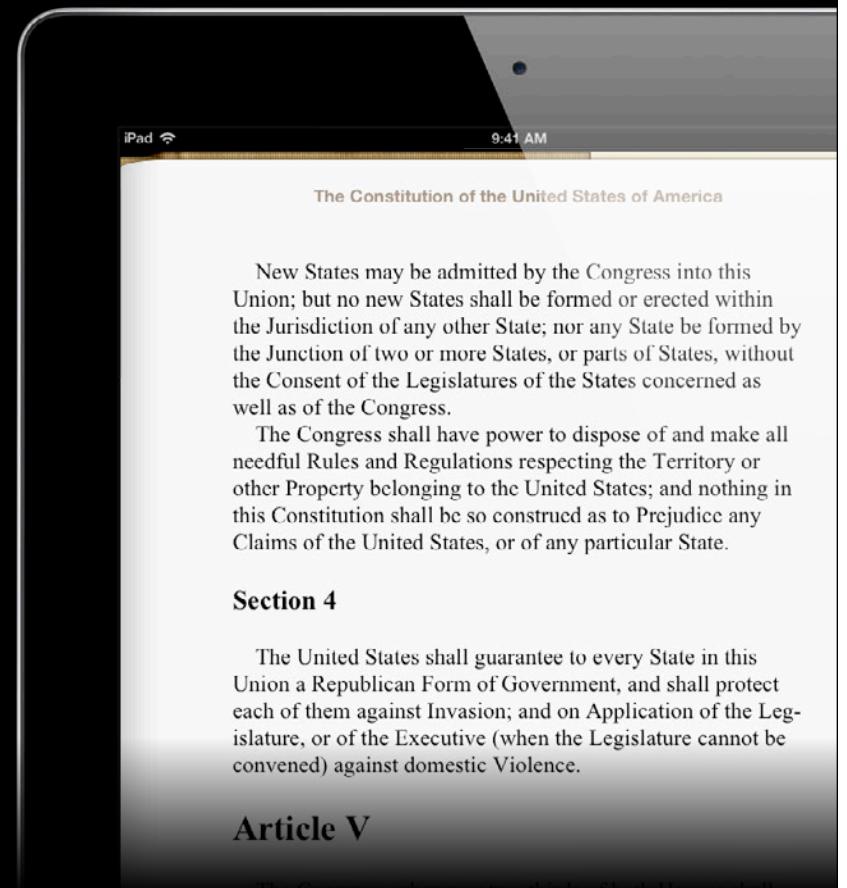


# Text

## Sizing and indenting your prose

- Adjust paragraph margins

```
p {  
  text-indent: 1.5em;  
  margin: 0;  
}
```



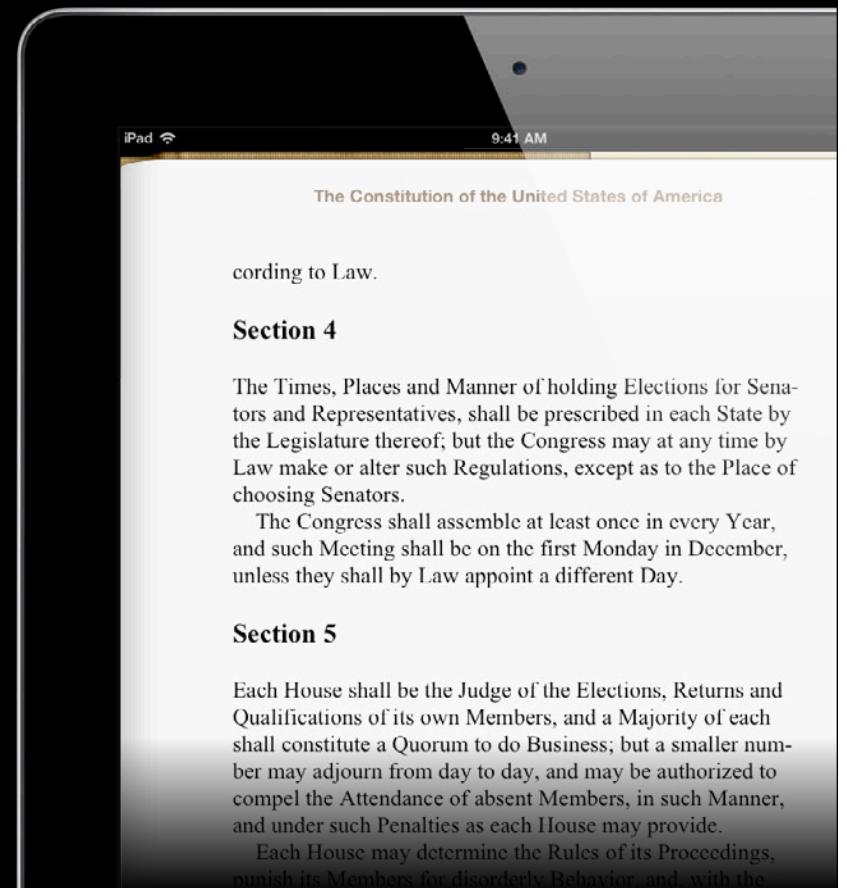
# Text

## Sizing and indenting your prose

- Use a sibling selector

```
p {  
  margin: 0;  
}
```

```
p + p {  
  text-indent: 1.5em;  
}
```

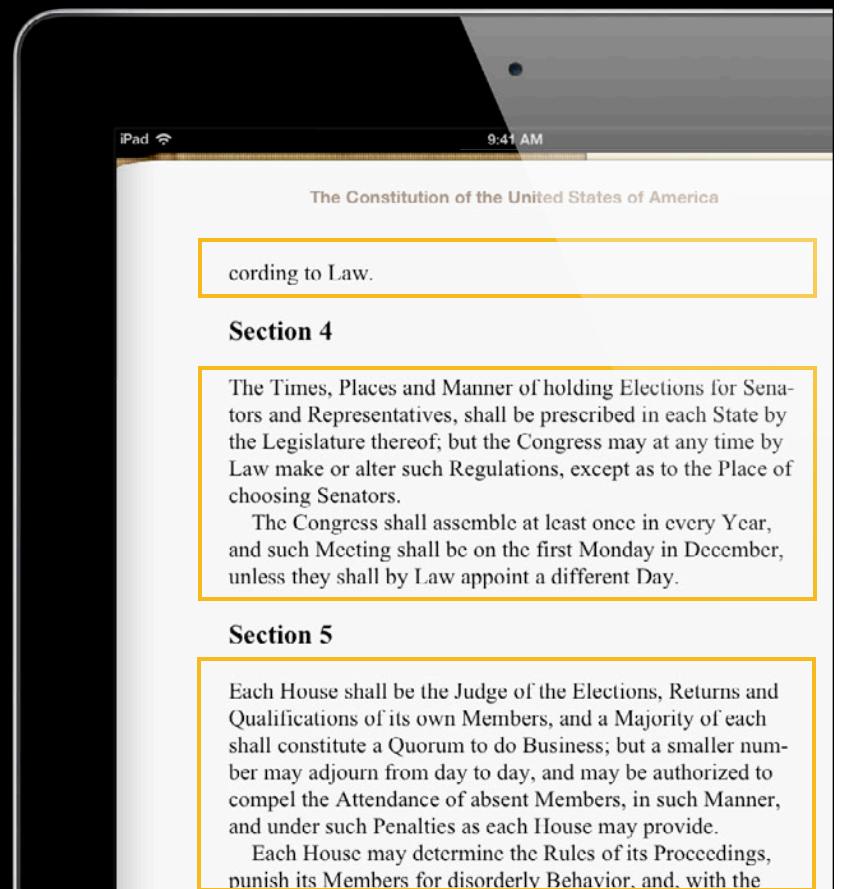


# Text

## Sizing and indenting your prose

- Use a sibling selector

```
p {  
  margin: 0;  
}  
  
p + p {  
  text-indent: 1.5em;  
}
```

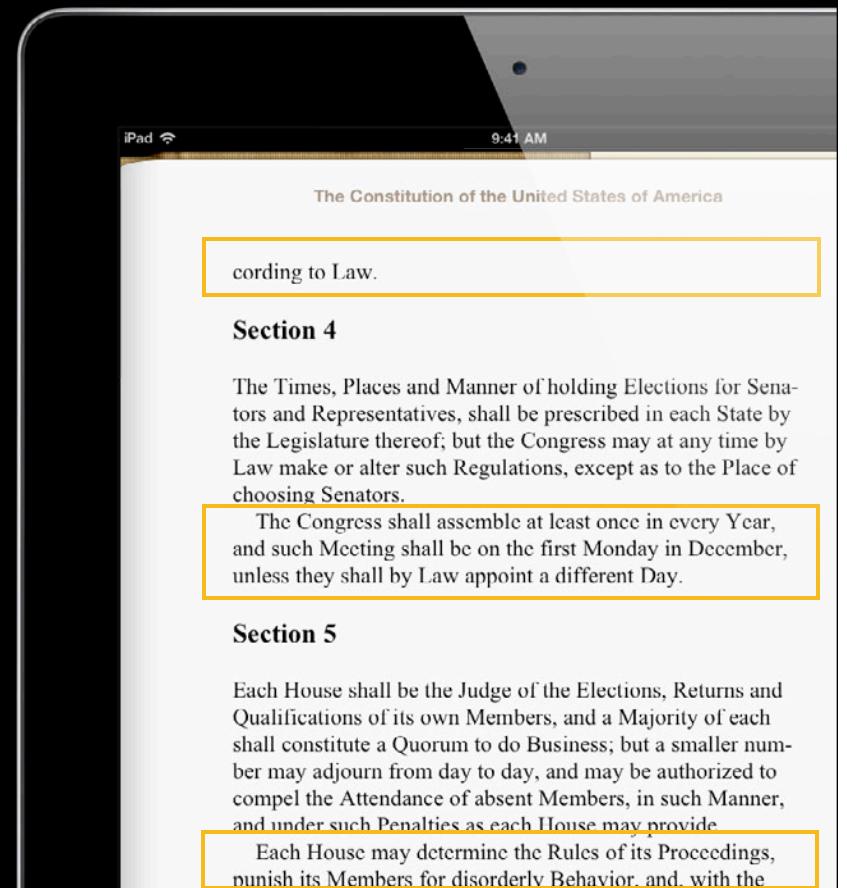


# Text

## Sizing and indenting your prose

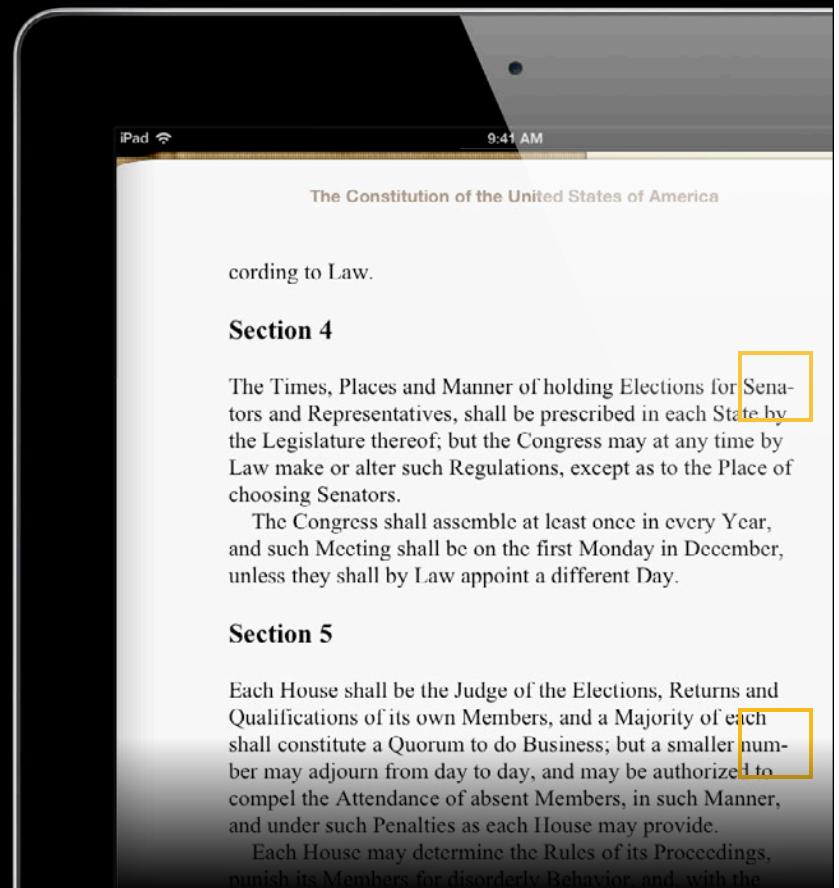
- Use a sibling selector

```
p {  
  margin: 0;  
}  
  
p + p {  
  text-indent: 1.5em;  
}
```



# Hyphenation

- Automatic



# Hyphenation

- Automatic
- Manually hyphenate with &shy;  
supercalifragilisticexpialidocious

# Hyphenation

- Automatic
- Manually hyphenate with &shy;  
su&shy;per&shy;ca&shy;li&shy;frag&shy;il&shy;is&shy;tic&shy;ex&shy;pi&shy;a  
l&shy;i&shy;do&shy;ciou

# Hyphenation

- Automatic
- Manually hyphenate with &shy;  
su&shy;per&shy;ca&shy;li&shy;frag&shy;il&shy;is&shy;tic&shy;ex&shy;pi&shy;a  
l&shy;i&shy;do&shy;ciou
- Prevent with -epub-hyphens: none;  

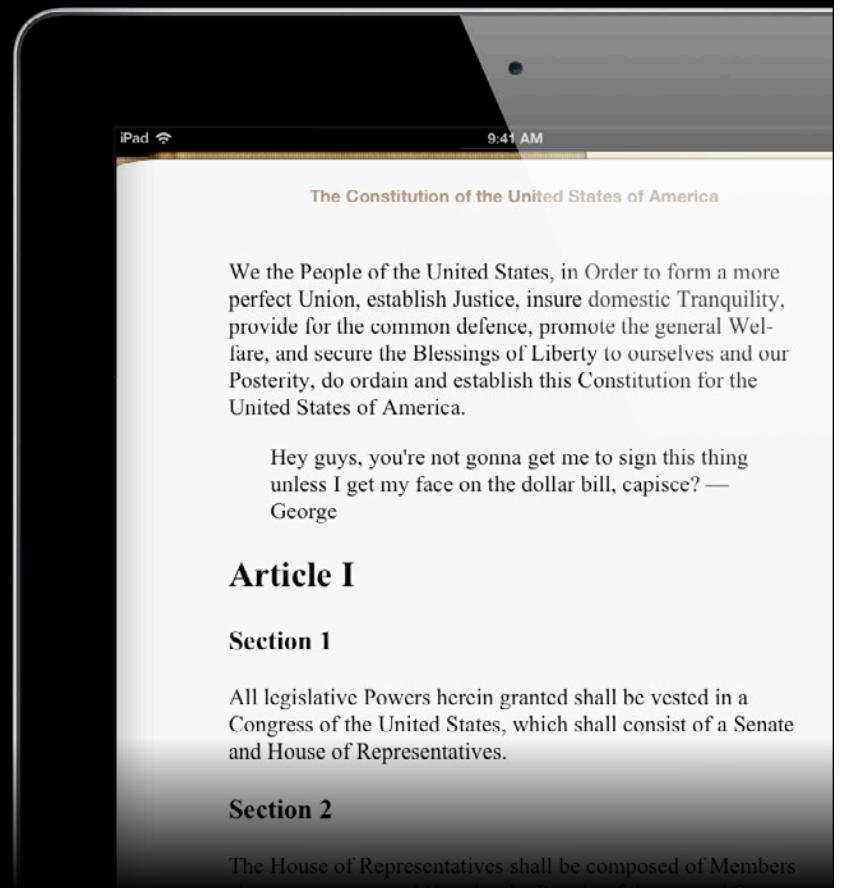
```
h1, h2, h3 {  
    -epub-hyphens: none;  
}
```

# Quotes

- Blockquote element

```
<blockquote>
```

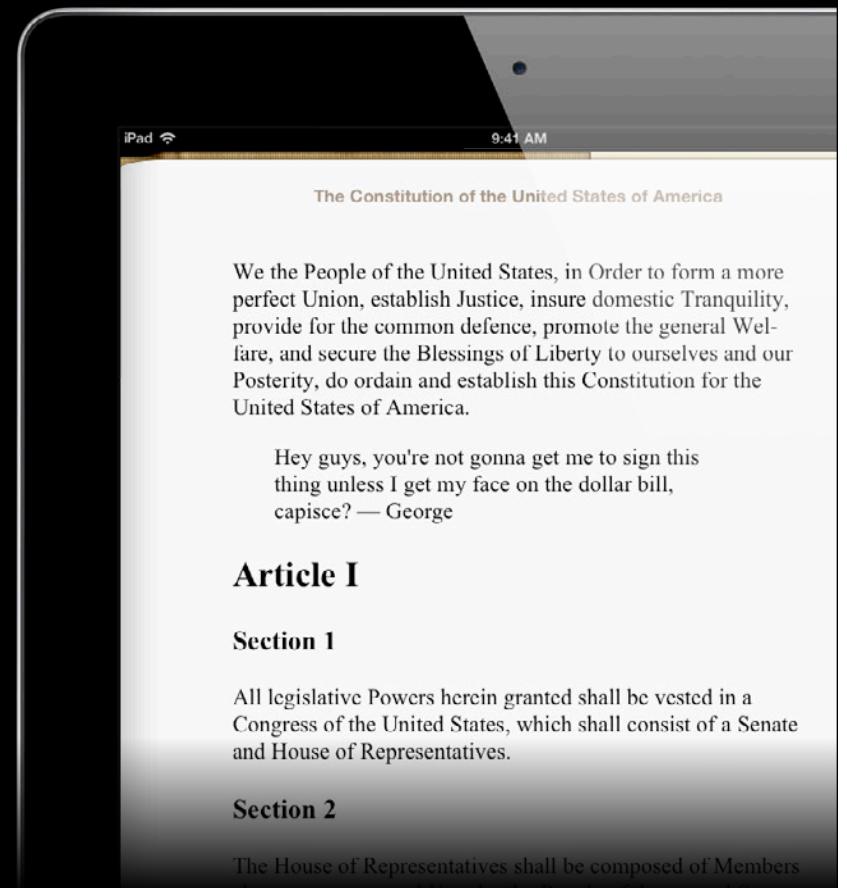
```
  <p>Hey guys, you're not gonna get  
  me to sign this thing unless I get my  
  face on the dollar bill, capisce? —  
  George</p>  
</blockquote>
```



# Quotes

- Use percentages for width

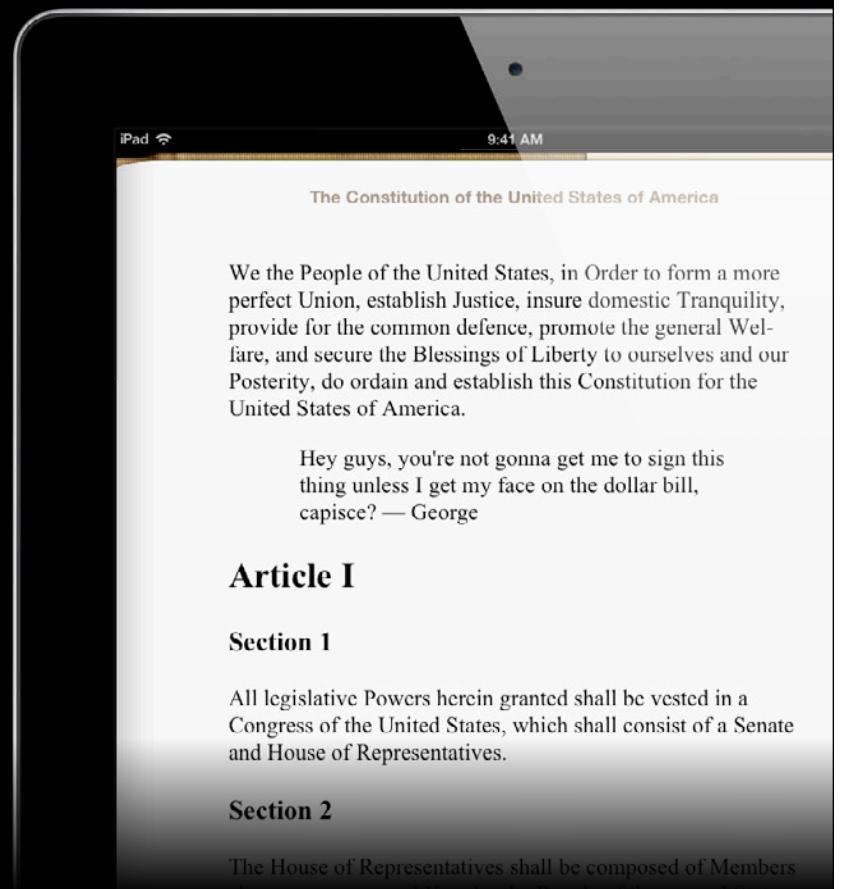
```
blockquote {  
    width: 75%;  
}
```



# Quotes

- Auto margins to center

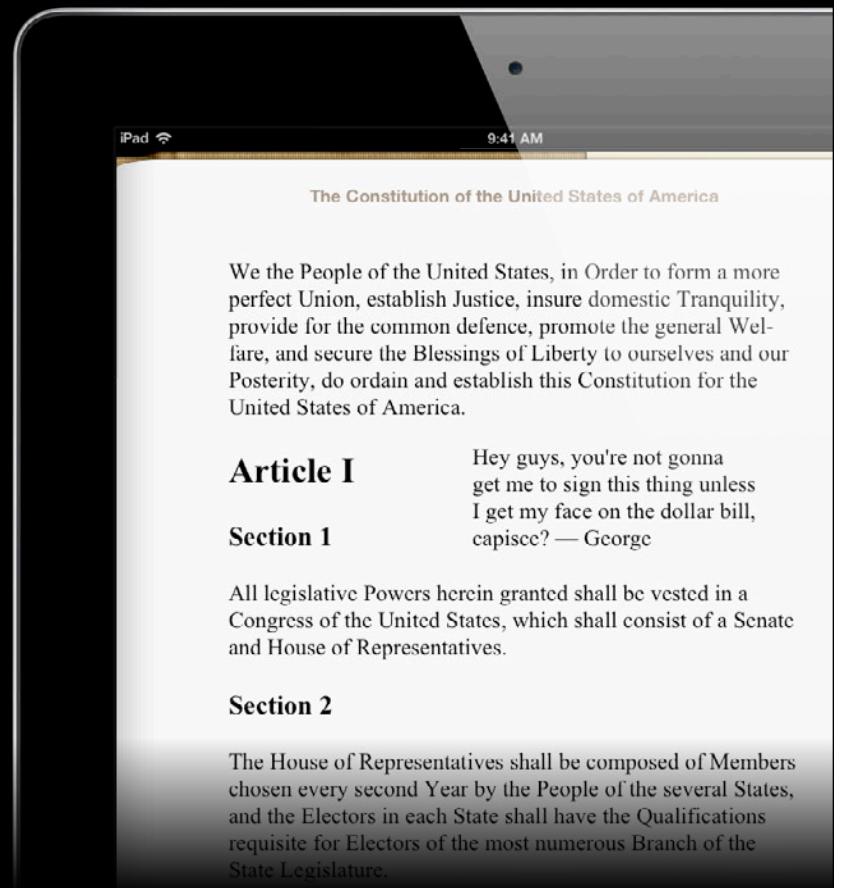
```
blockquote {  
    width: 75%;  
    margin: 1em auto;  
}
```



# Quotes

- Pull the quote out by floating it

```
blockquote {  
    width: 50%;  
    float: right;  
}
```



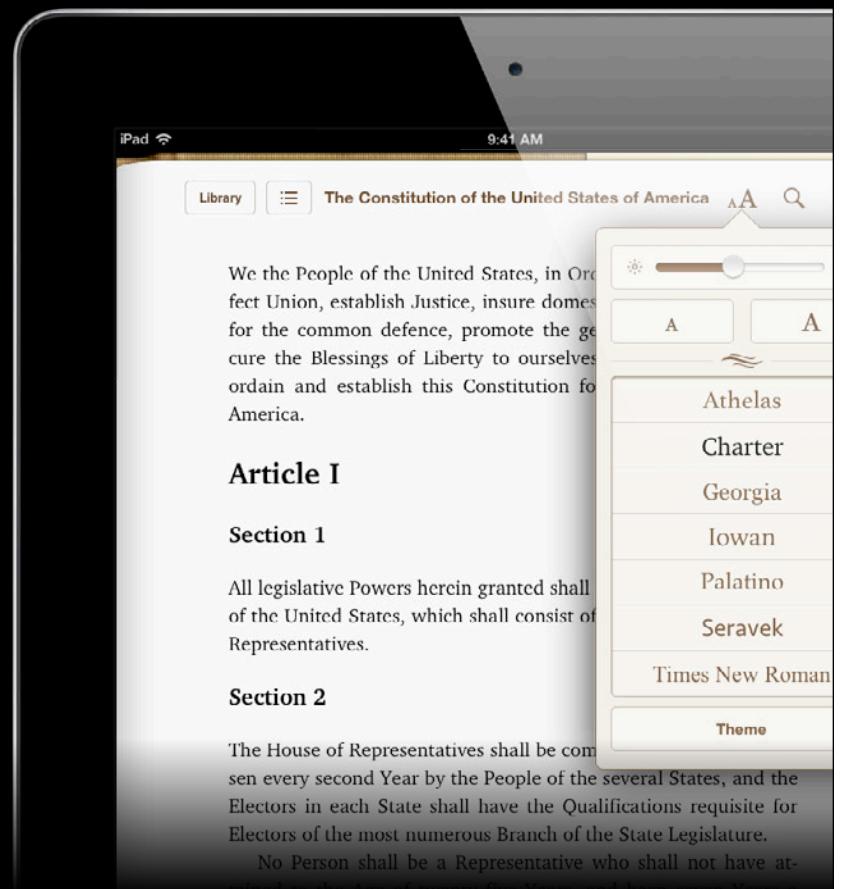
# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

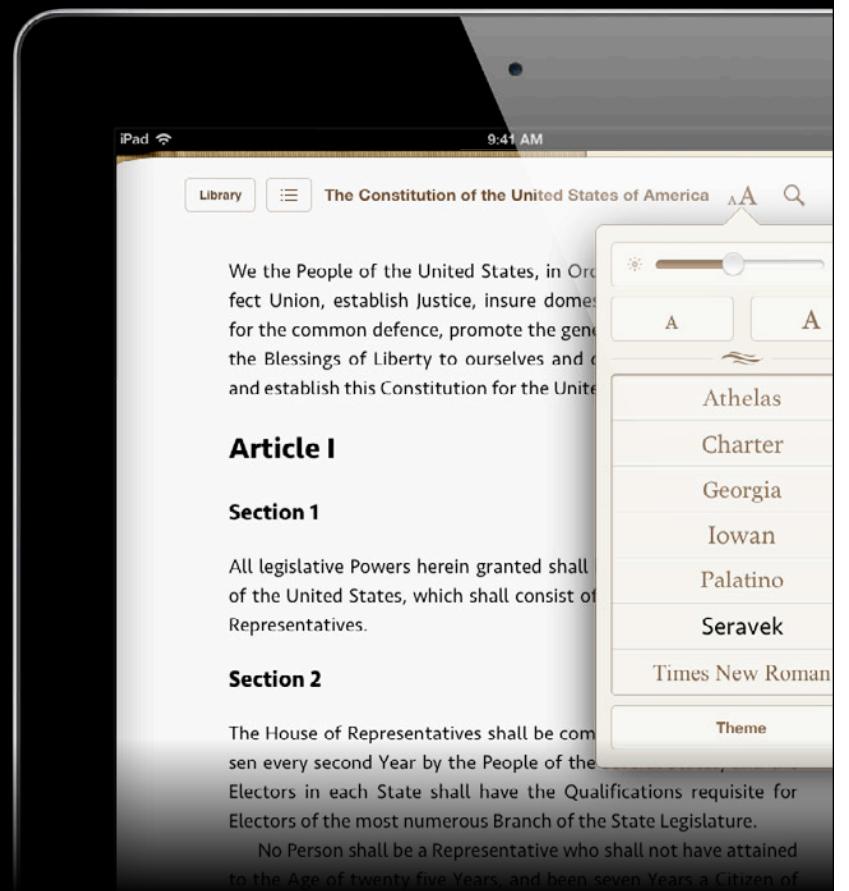
# Fonts

- Customizable



# Fonts

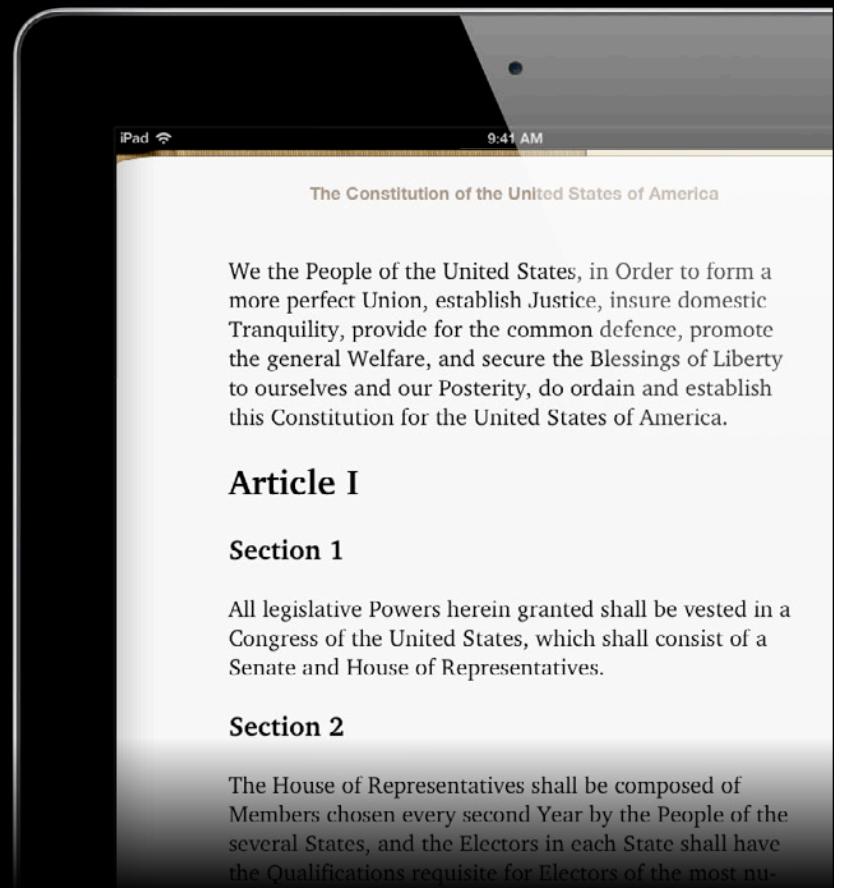
- Customizable



# Fonts

- Set font in CSS

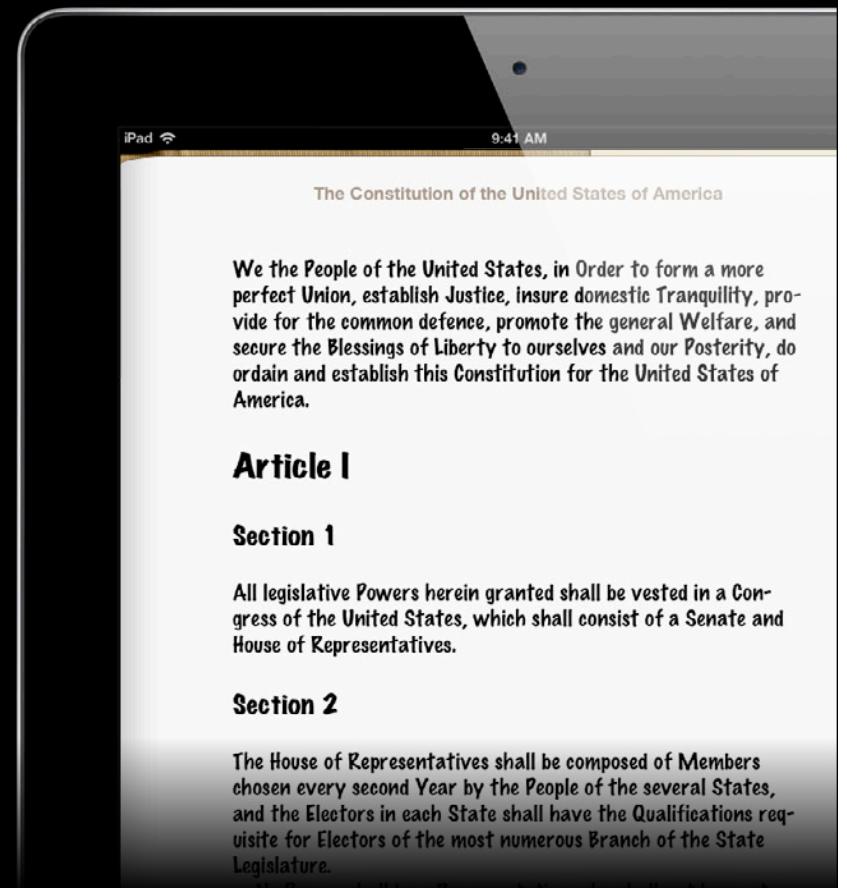
```
body {  
    font-family: Charter, serif;  
}
```



# Fonts

- iOS system fonts

```
body {  
    font-family: "Marker Felt", serif;  
}
```



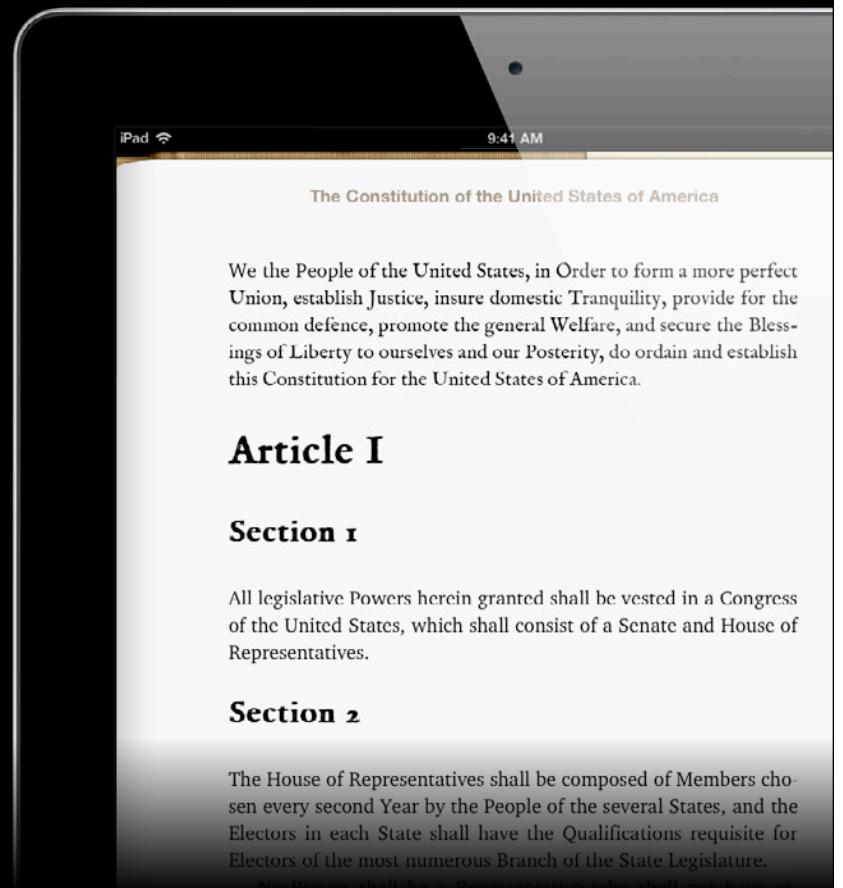
# Custom fonts

- Tell iBooks about the font

```
@font-face {  
    font-family: "Fell English";  
    src: url(IMFeENrm29C.otf);  
}
```

- Use the font normally

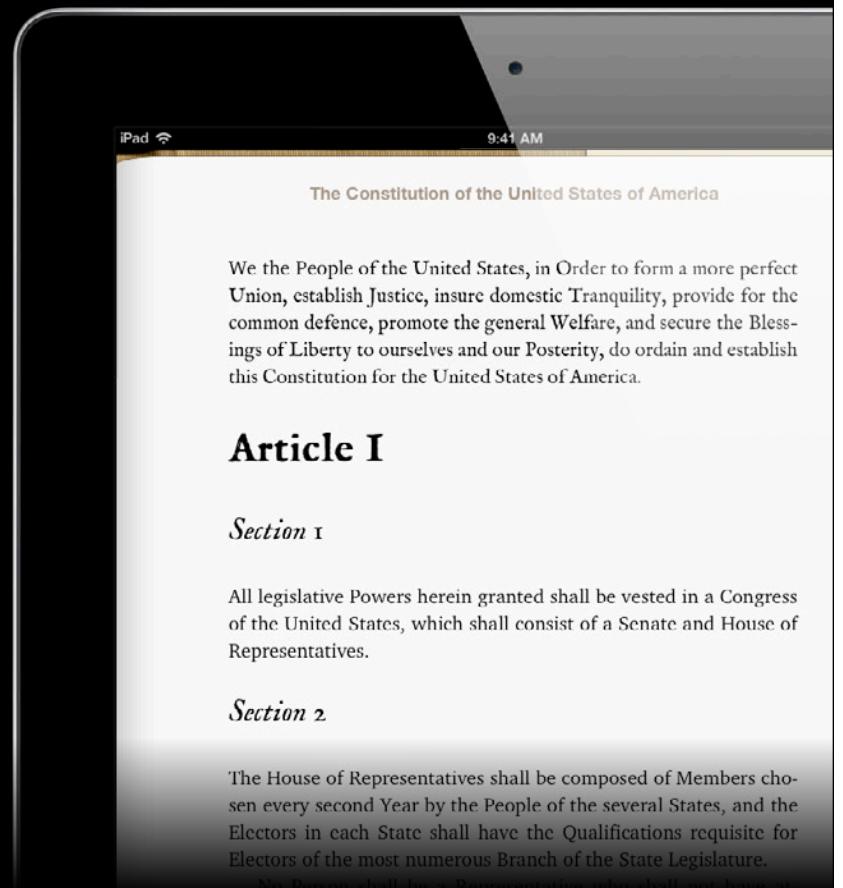
```
body {  
    font-family: Charter, serif;  
}  
  
h2, h3 {  
    font-family: "Fell English", serif;  
}
```



# Custom fonts

- Multiple fonts in the same family

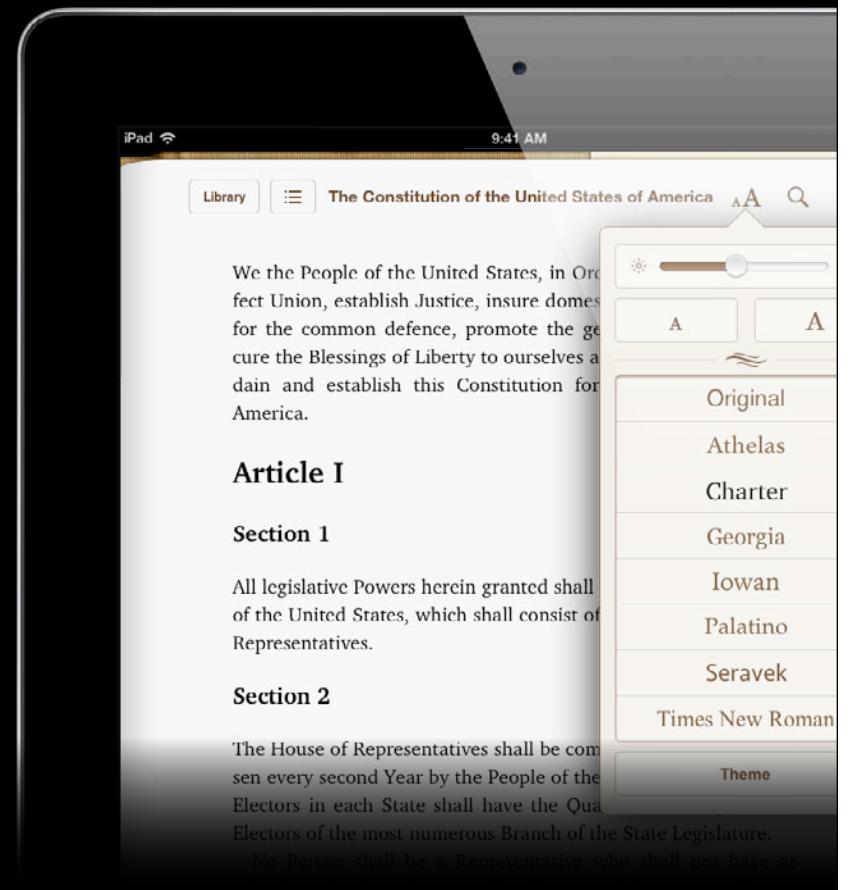
```
@font-face {  
    font-family: "Fell English";  
    src: url(IMFeENrm29C.otf);  
}  
  
@font-face {  
    font-family: "Fell English";  
    font-style: italic;  
    src: url(IMFeENit29C.otf);  
}  
  
h3 {  
    font-style: italic;  
    font-weight: normal;  
}
```



# Fonts

- Apple Display Options file

```
<option  
    name="specified-fonts">true</option>
```



We the People of the United States, in Order to form a more perfect Union, to insure domestic Tranquility, provide for the common Defence, promote and secure the Welfare of our Posterity, do ordain and establish this Constitution for the United States.

## Article I.

Section. 1. All legislative Powers herein granted shall be vested in a House of Representatives.

Section. 2. The House of Representatives shall be composed of Members in each State, who shall have Qualifications requisite for Electors of the most numerous.

No Person shall be a Representative who shall not have attained to the Age of twenty five Years, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.

Representatives and direct Taxes, shall be apportioned among the several States, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, not taxed, three fifths of all other Persons. The actual Enumeration shall be made within three Years after the first Meeting of the Congress, and within every subsequent Term of ten Years.

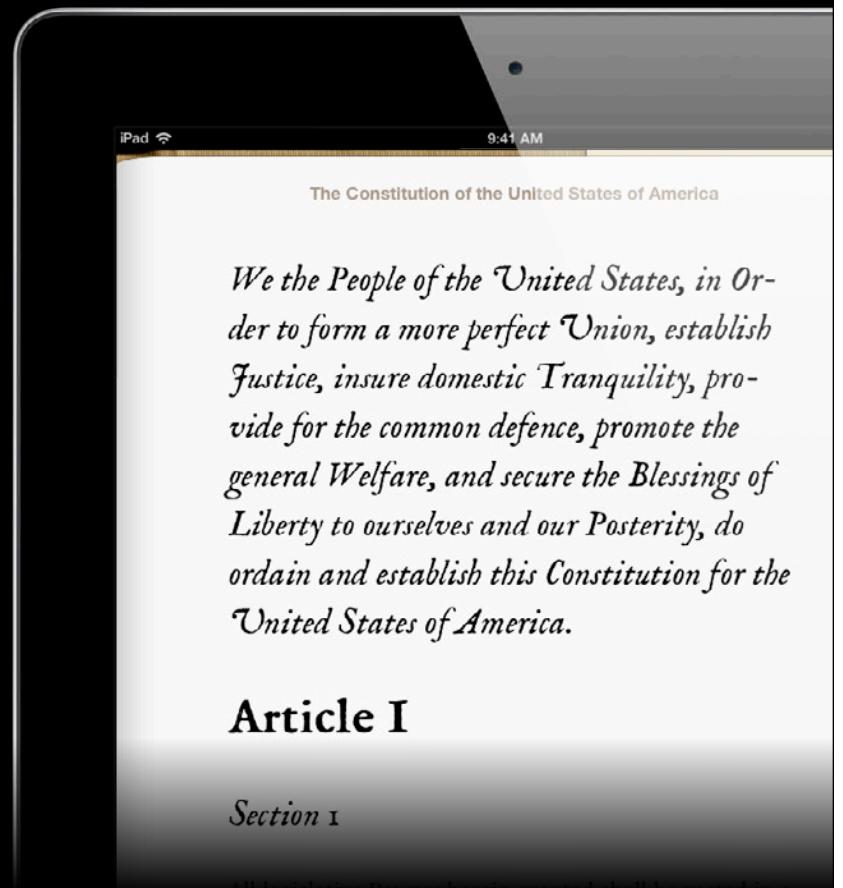
# Custom fonts

- Class for HTML

```
<p class="preamble">We the People of  
the United States, in Order to...
```

- Class selector in CSS

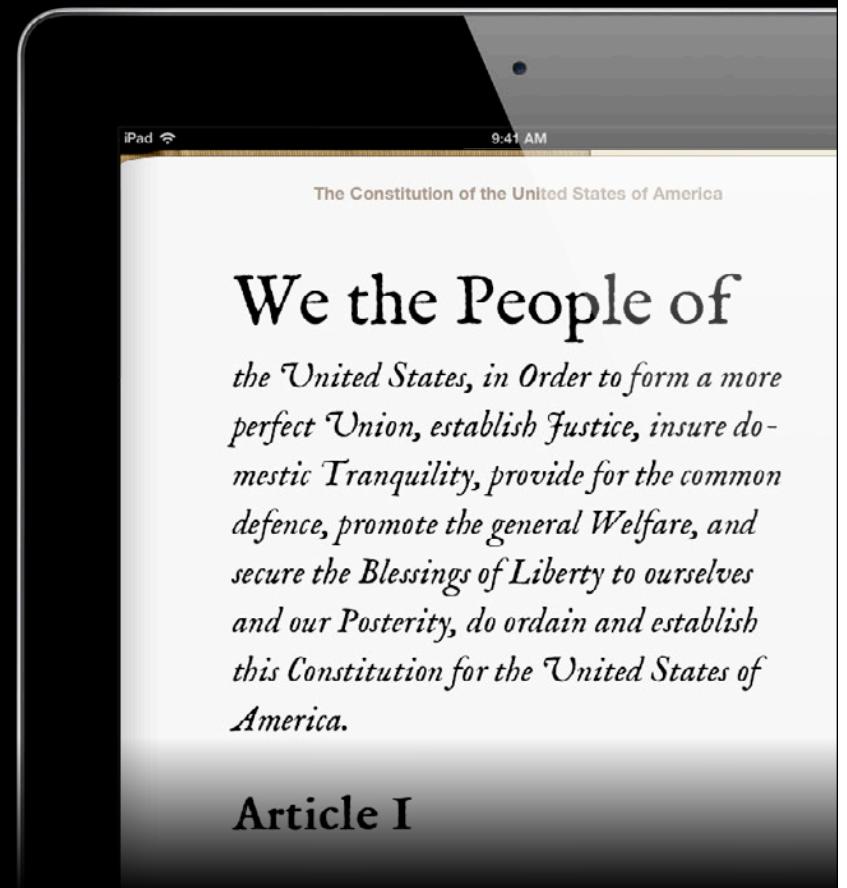
```
.preamble {  
    font-family: "Fell English";  
    font-style: italic;  
    font-size: 1.5em;  
}
```



# Custom fonts

- Style the first line
- CSS pseudo-elements

```
.preamble::first-line {  
    font-size: 2em;  
    font-style: normal;  
}
```



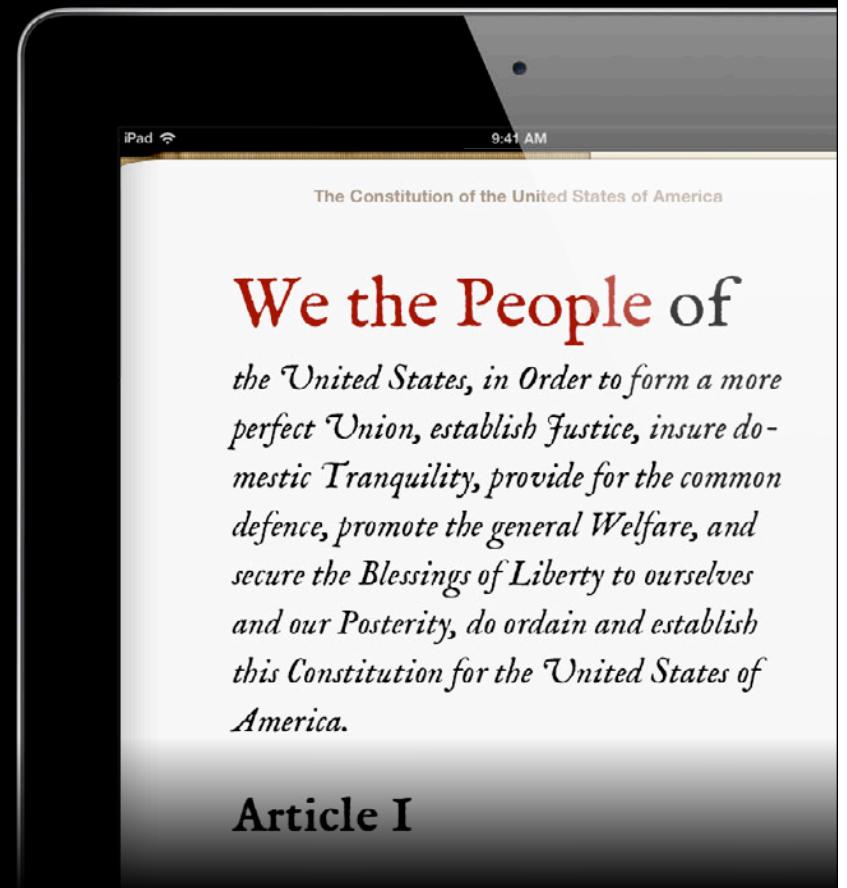
# Custom fonts

- Add an element

```
<p class="preamble"><span class="we-the-people">We the People</span> of the United States, in Order to...
```

- And some color

```
.we-the-people {  
  color: #900;  
}
```



# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior



# Images

- Specify the image file and alternative text

```

```



# Images

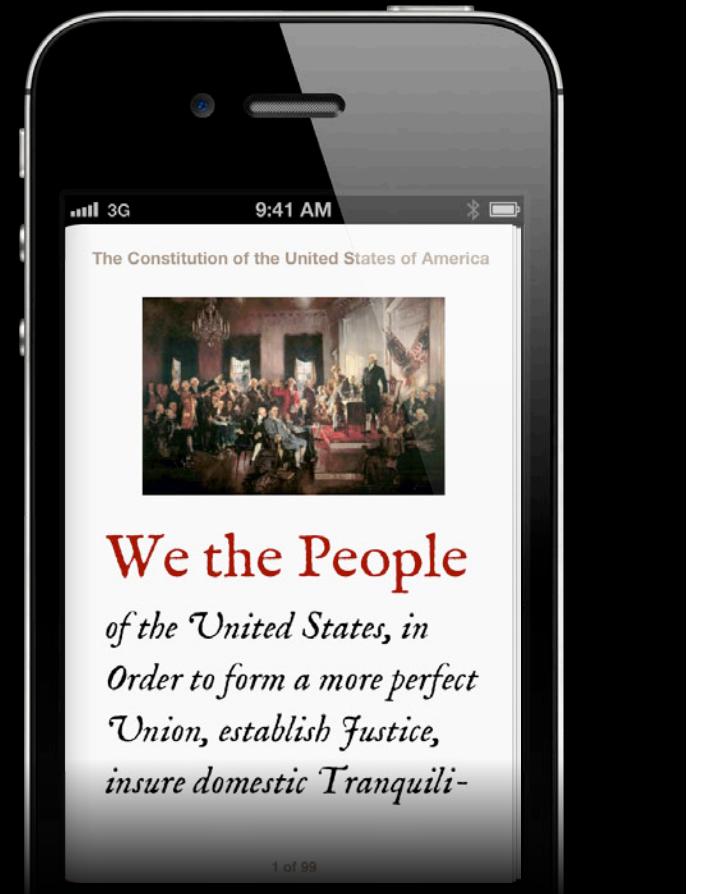
- Automatically sized



# Images

- Adjust size with a container

```
<div id="signing">  
    
</div>  
  
#signing {  
  width: 80%;  
  margin: 0.5em auto 1em auto;  
}
```

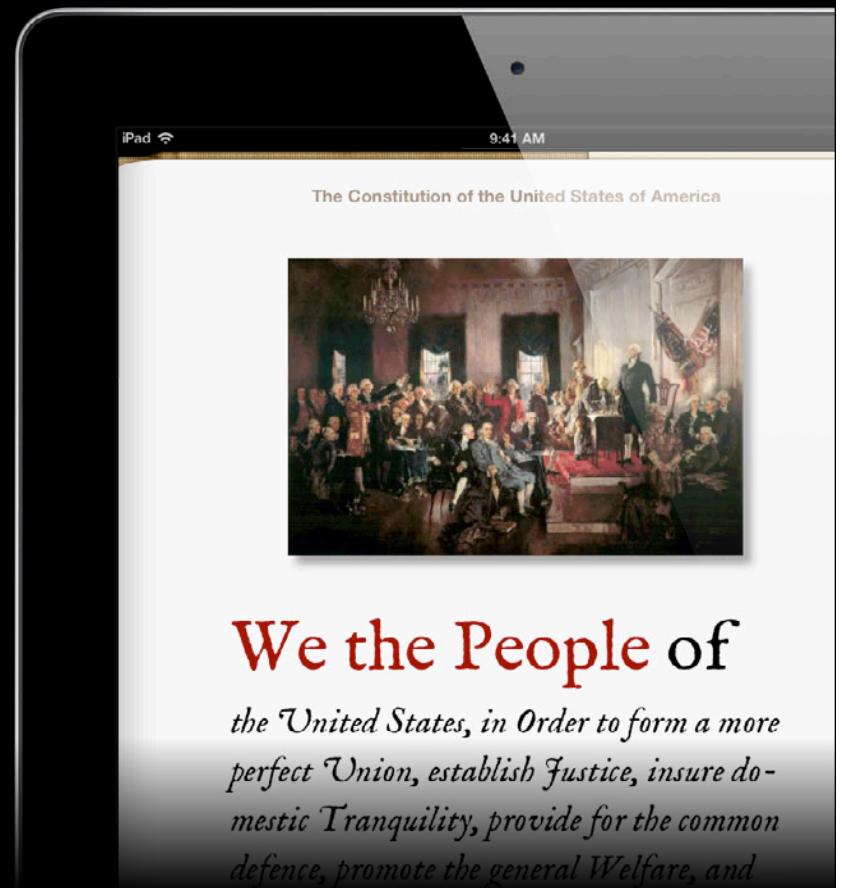


# Images

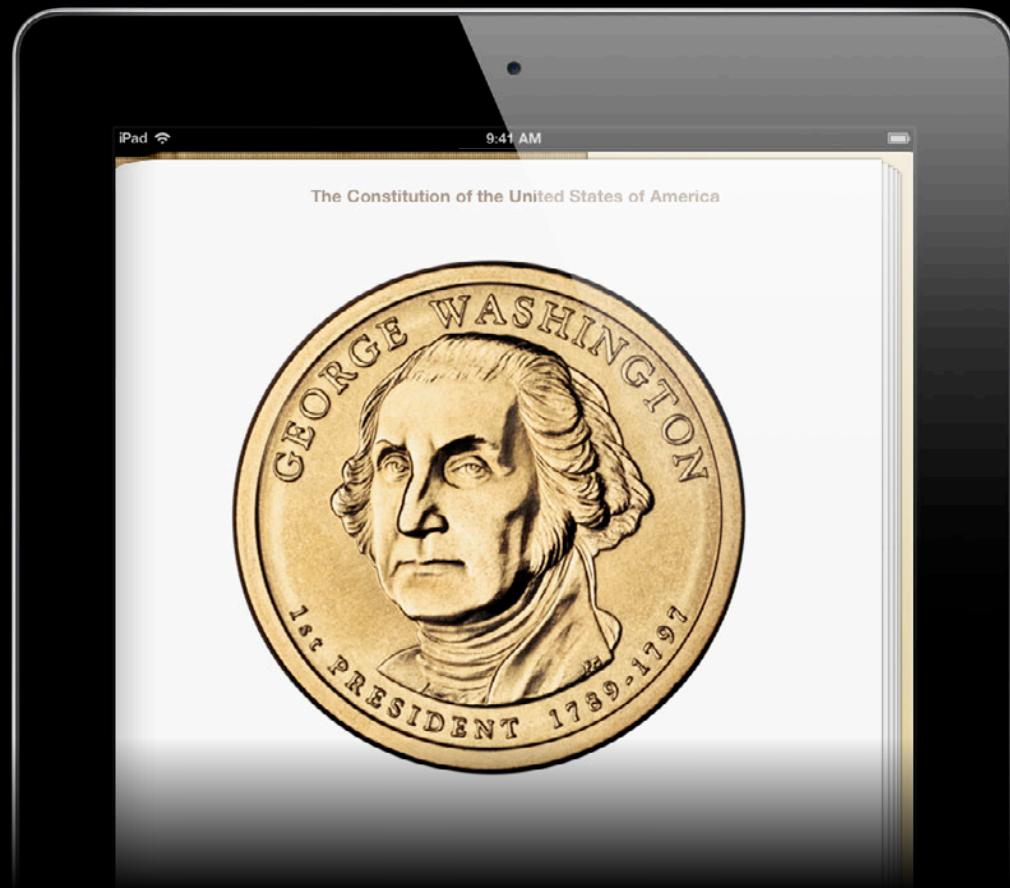
- Shadow effects

```
#signing {  
  box-shadow: 8px 8px 8px gray;  
}
```

↑      ↑      ↑      ↑  
X offset    Y offset    Blur radius    Color



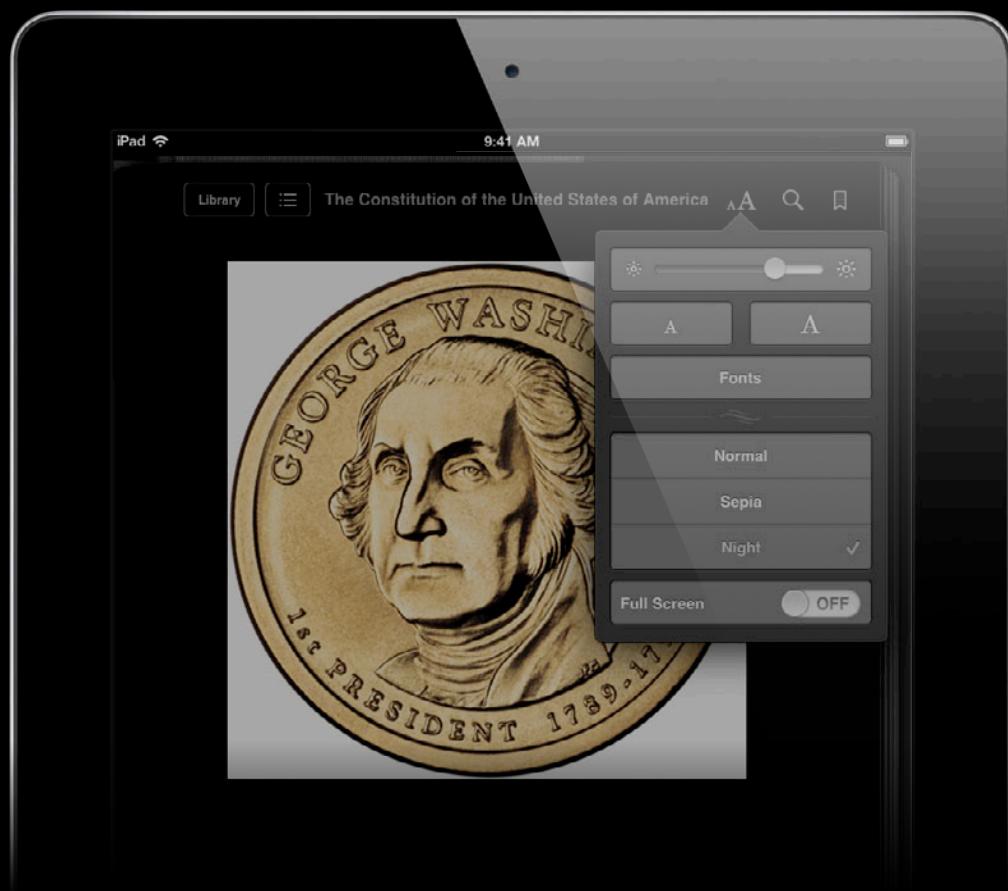
# Images and Themes



# Images and Themes



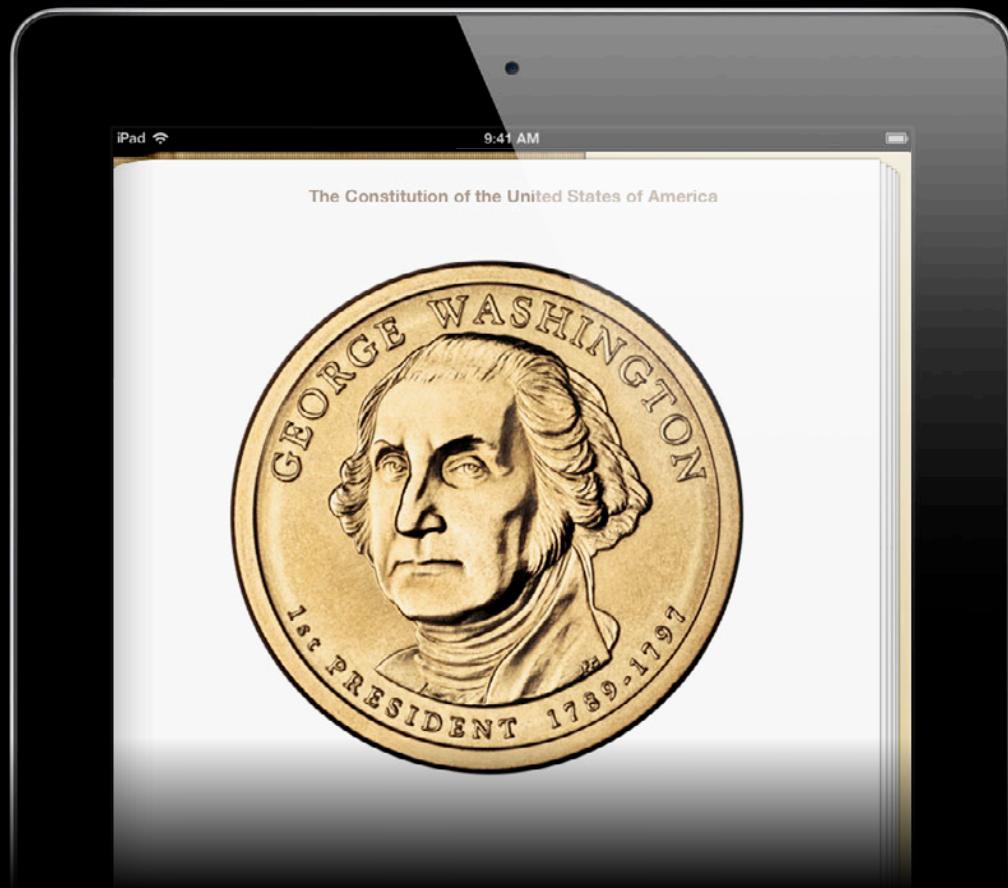
# Images and Themes



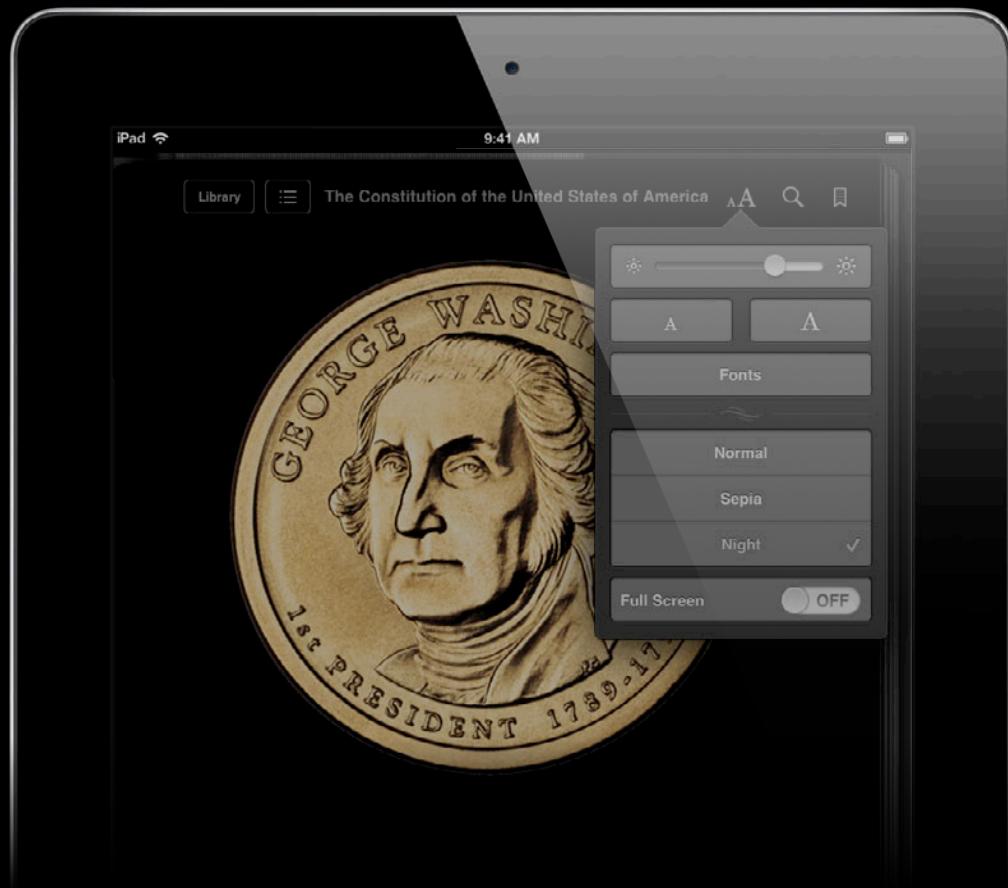
# Images and Themes



# Images and Themes



# Images and Themes



# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

# Beyond Print

## Adding rich layout and animation

# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

# Fixed Layout

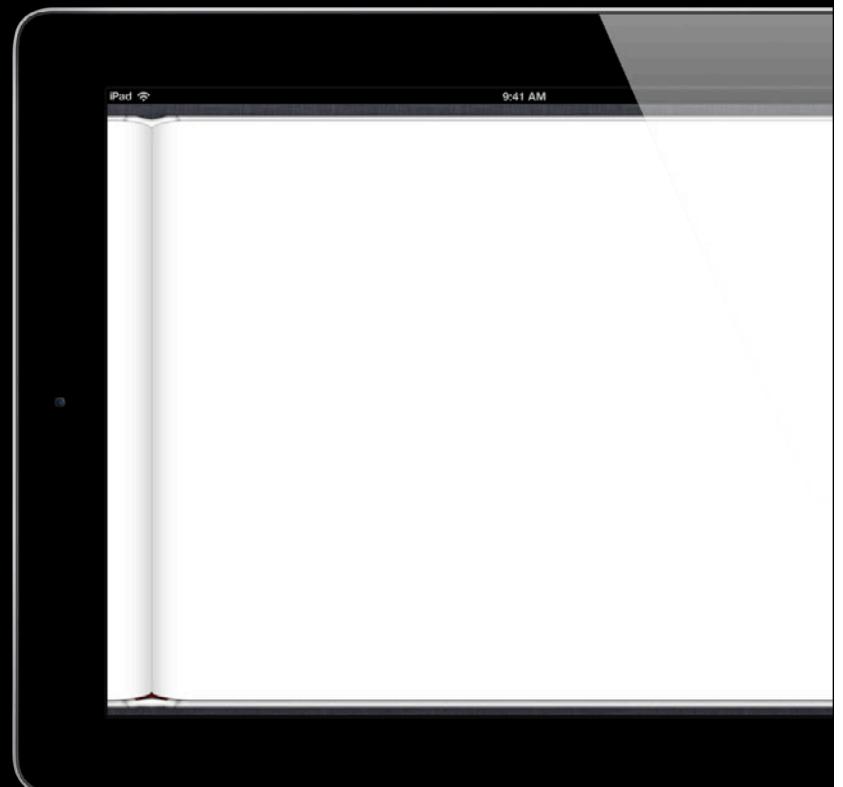
- Set page size

```
<meta name="viewport"  
content="width=1024, height=768"/>
```

- Style body to match

```
body {  
  margin: 0;  
  width: 1024px;  
  height: 768px;  
}
```

- Zero margins on body

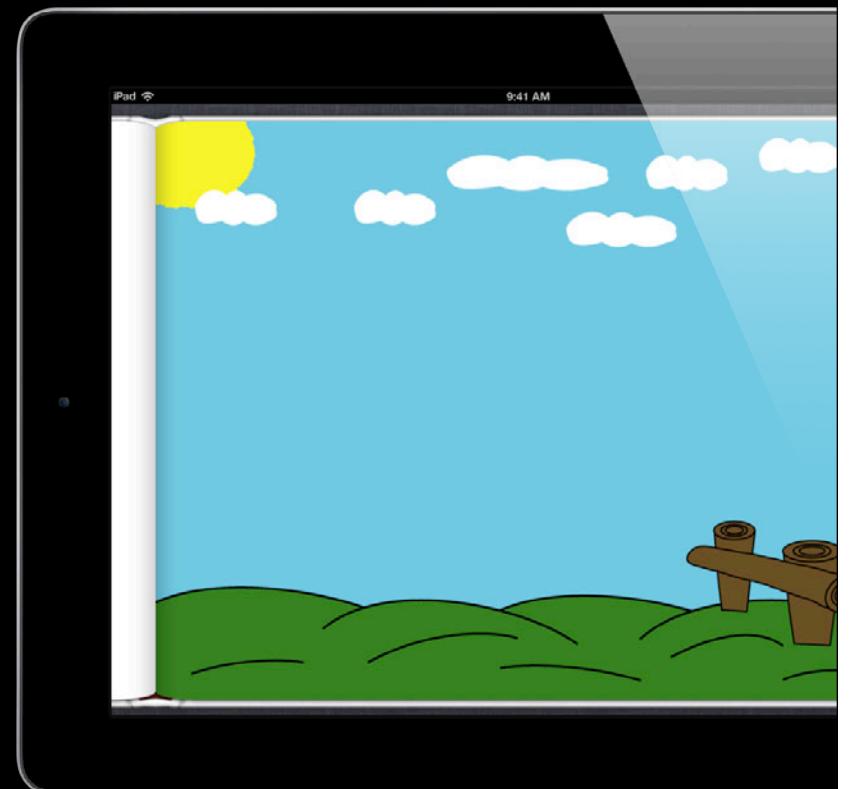




# Background Images

- Background image

```
body {  
  margin: 0;  
  background: background.png;  
}
```

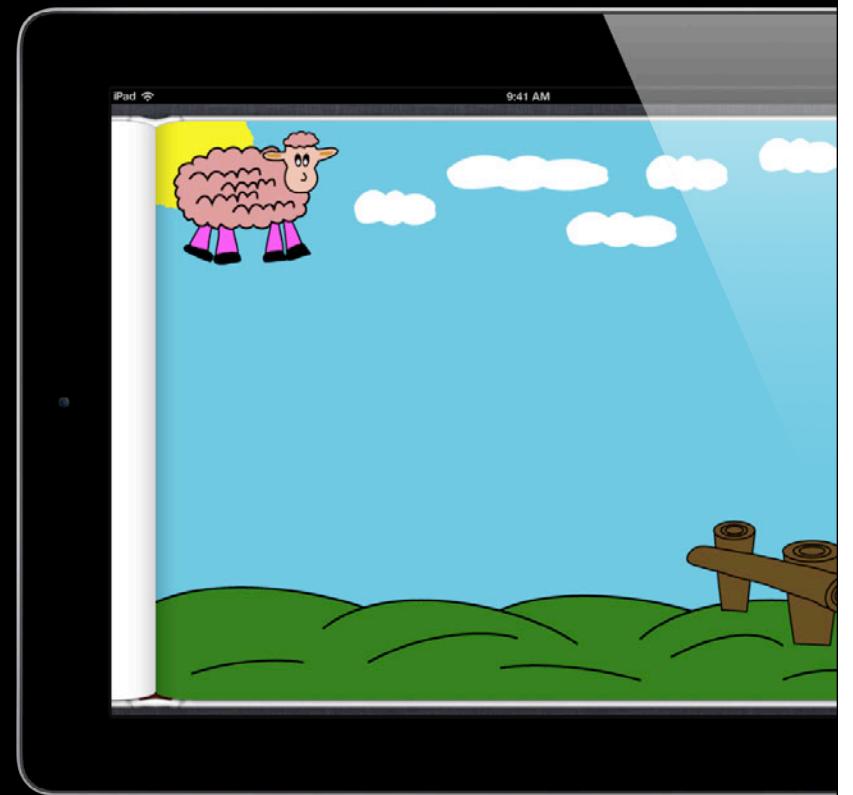


# Placing Elements

- Foreground elements

```

```

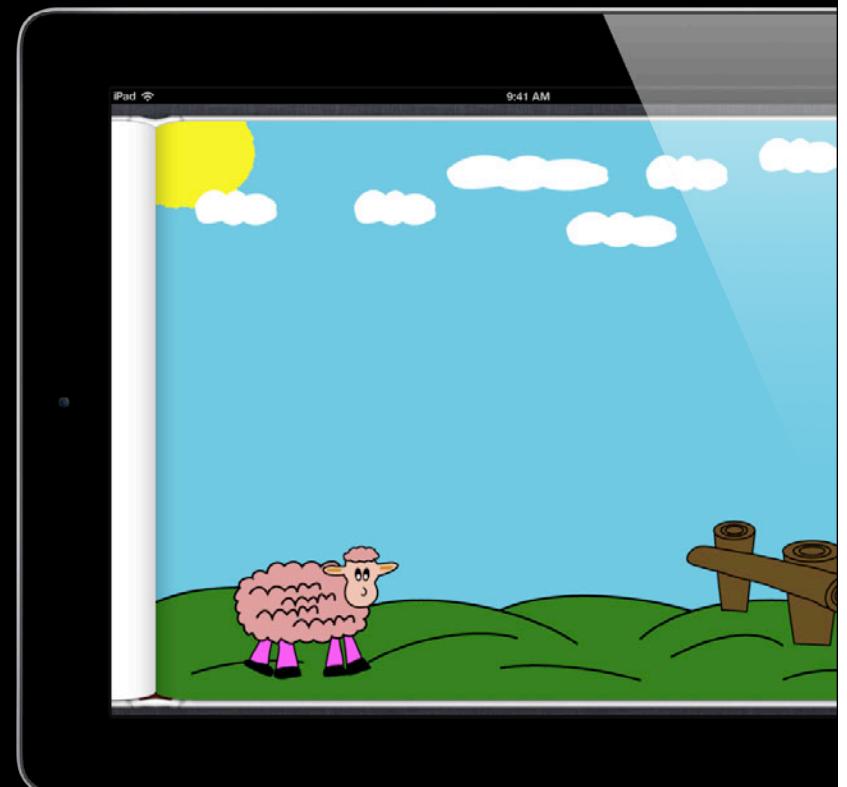


# Placing Elements

- Absolute positioning
- Use `top`, `right`, `bottom`, and `left` properties

```
<body>
  
</body>

#bruce {
  position: absolute;
  top: 550px;
  left: 80px;
}
```



# Stacking Elements

```
<body>
  
  
</body>

#bruce, #flock {
  position: absolute;
}
#bruce {
  top: 550px;
  left: 80px;
}
#flock {
  top: 450px;
  left: 0px;
}
```



# Stacking Elements

- Use `z-index` property

```
#flock {  
  z-index: 0;  
}
```

```
#bruce {  
  z-index: 1;  
}
```



# Animating Page Elements

## CSS keyframe animations

- Defined by the `@keyframes` rule

```
@keyframes walk {  
 0% {  
   ...  
 }  
 100% {  
   ...  
 }  
}
```



# Animating Page Elements

## CSS keyframe animations

- Defined by the `@keyframes` rule

```
@keyframes walk {  
 0% {  
   ...  
 }  
 100% {  
   ...  
 }  
}
```

- Triggered by `-webkit-animation-name`

```
#bruce {  
  -webkit-animation-name: walk;  
}
```



# Animating Page Elements

## CSS keyframe animations

- Defined by the `@keyframes` rule

```
@keyframes walk {  
 0% {  
   ...  
 }  
 100% {  
   ...  
 }  
}
```

- Configure duration and timing

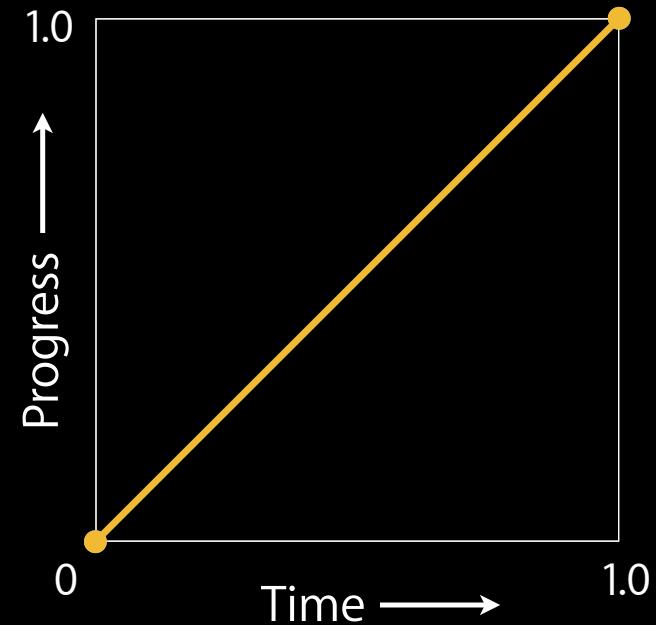
```
#bruce {  
 -webkit-animation-name: walk;  
 -webkit-animation-duration: 1s;  
 -webkit-animation-timing-function: ease;  
}
```



# Animating Page Elements

## Timing functions

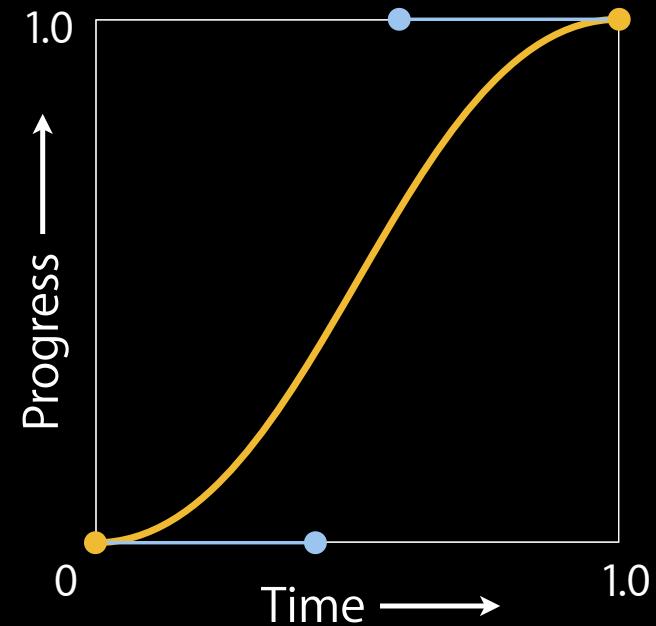
- Pre-defined times
  - linear
  - ease
  - and more
- Custom times
  - `cubic-bezier(x1,y1,x2,y2)`



# Animating Page Elements

## Timing functions

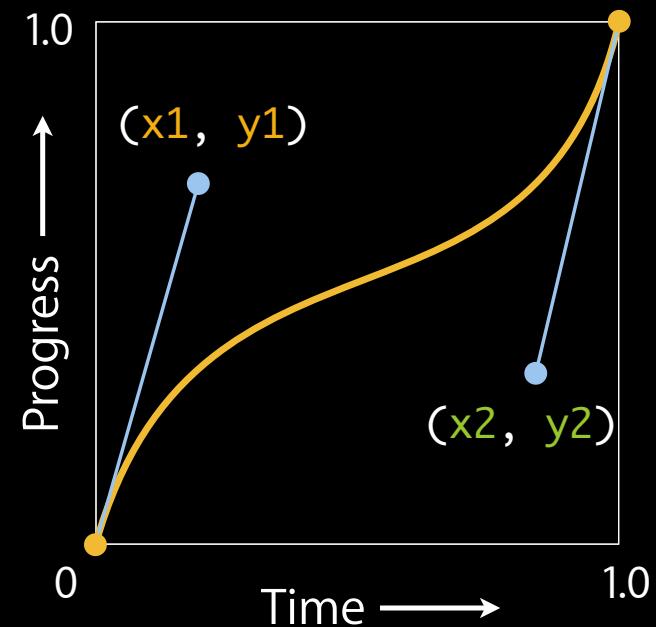
- Pre-defined times
  - linear
  - ease
  - and more
- Custom times
  - `cubic-bezier(x1,y1,x2,y2)`



# Animating Page Elements

## Timing functions

- Pre-defined times
  - linear
  - ease
  - and more
- Custom times
  - `cubic-bezier(x1,y1,x2,y2)`



# Animating Page Elements

## CSS keyframe animations

- What goes in each keyframe?

```
@keyframes walk {  
 0% {  
   ...  
 }  
 100% {  
   ...  
 }  
}
```



# Animating Page Elements

## CSS transforms

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- Spin or rotate things

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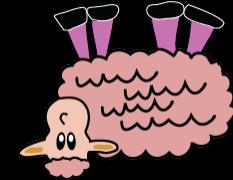
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- Spin or rotate things

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-webkit-transform: rotate(180deg);
```



# Animating Page Elements

## CSS animations and transforms

- Defined by the `@keyframes` rule

```
@keyframes walk {  
 0% {  
   -webkit-transform: translate(0,0);  
 }  
100% {  
   -webkit-transform: translate(200px,0);  
 }  
}
```

- Configure duration and timing

```
#bruce {  
  -webkit-animation-name: walk;  
  -webkit-animation-duration: 1s;  
  -webkit-animation-timing-function: ease;  
}
```



# Animating Page Elements

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# *Demo*

**Adele Peterson**  
Safari / WebKit Engineer

# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
  - Text
  - Fonts
  - Images
- Beyond print
  - Animations
  - Multimedia
  - Dynamic behavior

# Multimedia

## As easy as images

- HTML5 media elements

```
<video src="video/video.m4v"  
poster="images/page8/poster.jpg"  
controls="true"/>
```



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## Beautiful content for digital books

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# Counting Sheep

- Count each jump
- Book changes dynamically



# Document Object Model

```
<!doctype html>
<html>
  <head>
    <title>Counting Sheep</title>
  </head>
  <body>
    
  </body>
</html>
```

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Document

HTMLHtmlElement

HTMLHeadElement

HTMLTitleElement

HTMLBodyElement

HTMLImageElement

# Counting Sheep

## DOM Events

- Events are messages
- Fired at elements when something happens

# Counting Sheep

## DOM Events

- Events are messages
- Fired at elements when something happens
- Animation events

`webkitAnimationStart`  
`webkitAnimationIteration`  
`webkitAnimationEnd`

# Counting Sheep

## DOM Events

- Find the sheep

```
var sheep = document.getElementById("bruce");
```

# Counting Sheep

## DOM Events

- Find the sheep

```
var sheep = document.getElementById("bruce");
```

- Listen for animation iteration events

```
sheep.addEventListener("webkitAnimationIteration", updateCount, false);
```

# Counting Sheep

## DOM Events

- Find the sheep

```
var sheep = document.getElementById("bruce");
```

- Listen for animation iteration events

```
sheep.addEventListener(  
  "webkitAnimationIteration", updateCount, false);
```

- Update the display in updateCount()



# Counting Sheep

## DOM Events

- Find the sheep

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# Counting Sheep

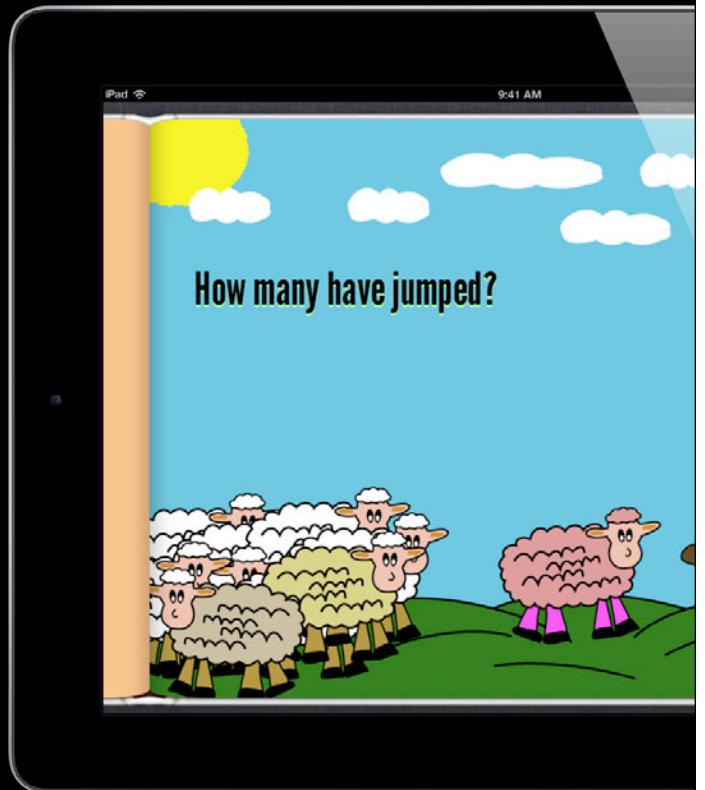
## DOM Events

- Hide the counter with a class
- Add the class in HTML

```
<div id="counter" class="zero">0</div>
```

- Hide it in CSS

```
#counter.zero {  
    display: none;  
}
```



# Counting Sheep

## DOM Events

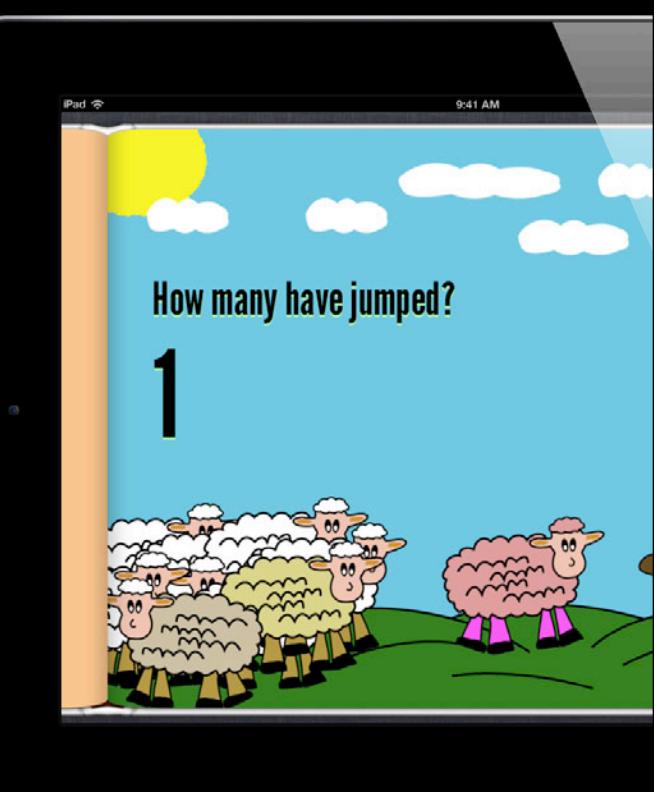
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- Hide it in CSS

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#counter.zero {  
    display: none;  
}
```

- Remove the class in updateCount()



# Working with Classes

## HTML5's classList API

- Easy to work with

```
element.classList.contains("foo")
element.classList.add("foo")
element.classList.remove("foo")
element.classList.toggle("foo")
```

# Working with Classes

## HTML5's classList API

- Remove the jumping class

```
counter.classList.remove("zero");
```

# *Demo*

**Adele Peterson**  
Safari / WebKit Engineer

# Summary

- Simple to make books look great with web technology
- Fine-grained control over layout
- Rich enhancements
  - Animations
  - Multimedia

# Related Sessions

Building Books with iBooks Author	Mission Tuesday 11:30AM
Building Interactive Books with EPUB 3 and JavaScript	Marina Wednesday 9:00AM
Delivering Web Content on High Resolution Displays	Nob Hill Wednesday 11:30AM
Improving Accessibility in Books	Russian Hill Thursday 9:00AM
Building Books with iBooks Author (Repeat)	Marina Friday 11:30AM

# Labs

Safari and WebKit Open Lab

Safari & Web Lab  
Thursday 3:15PM

# More Information

**Vicki Murley**

Safari Technologies Evangelist

[vicki@apple.com](mailto:vicki@apple.com)

**Apple Developer Forums**

<http://devforums.apple.com>

Q&A



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