

# HTML, CSS, and DOM for Book Authors

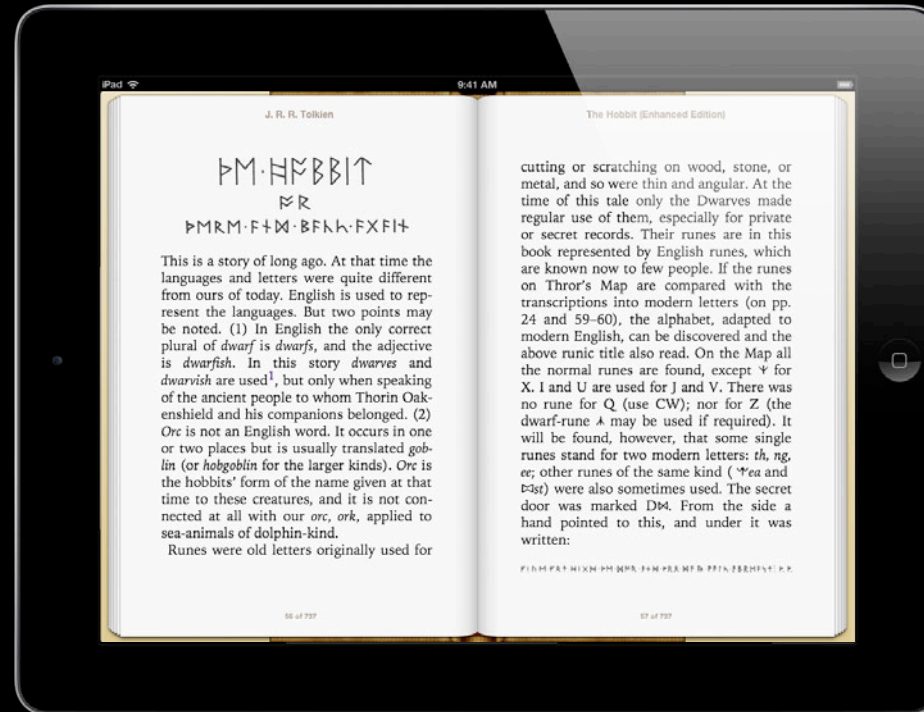
Session 515

**Edward O'Connor**

Safari Web Technology Engineer

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





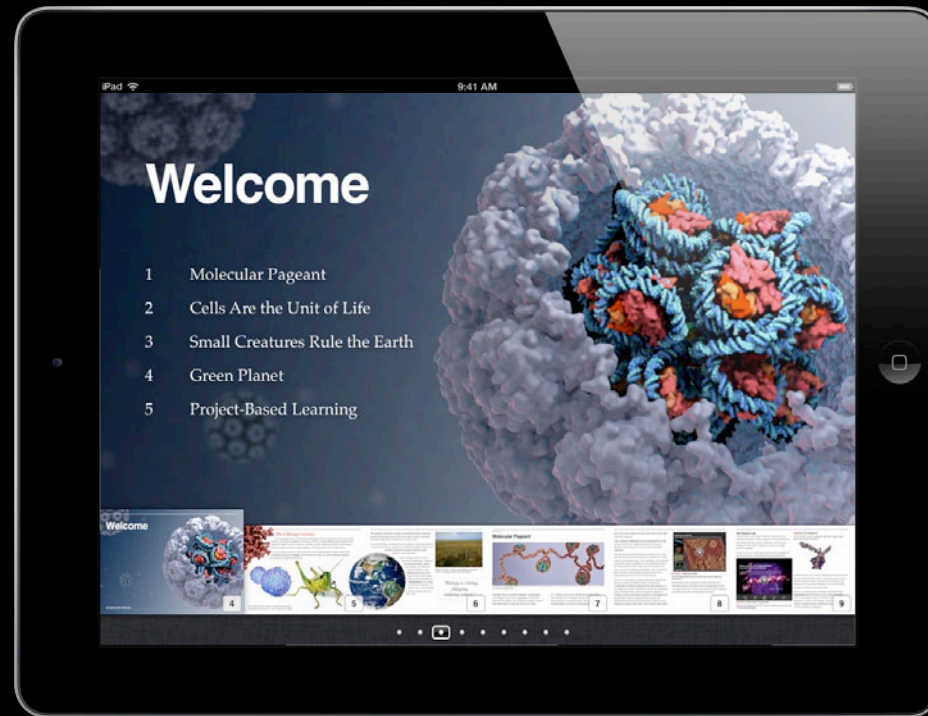
## Flowing Books



## Fixed Layout Books



## Fixed Layout Books



## Multi-Touch Books







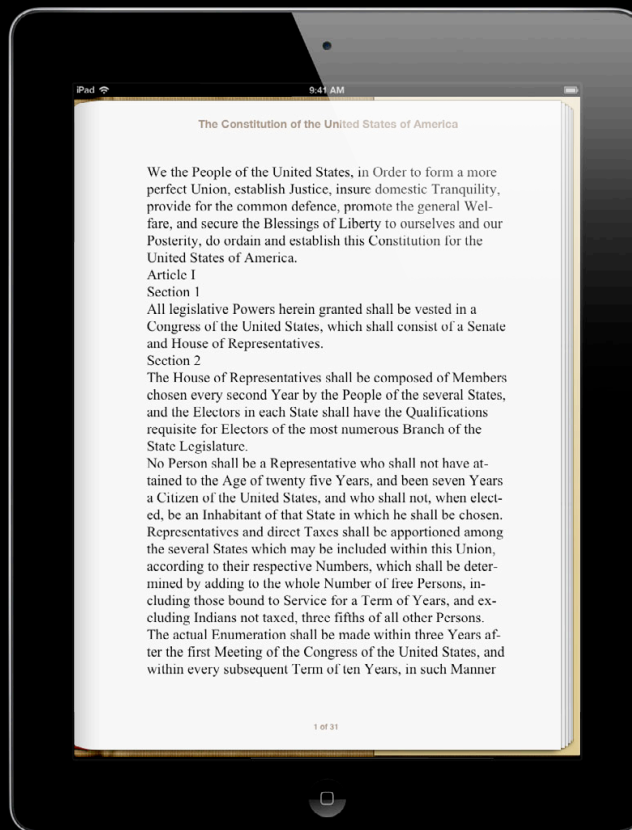
# What You Will Learn

## 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



The Constitution of the United States of America

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.

Article 1  
Section 1

All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2

The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, and the Electors in each State shall have the Qualifications requisite for Electors of the most numerous Branch of the State Legislature.

No Person shall be a Representative who shall not have attained to the Age of twenty five Years, and been seven Years a Citizen of the United States, 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 which may be included within this Union, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons.

The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner

The Constitution of the United States of America



## 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

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# Structure and HTML

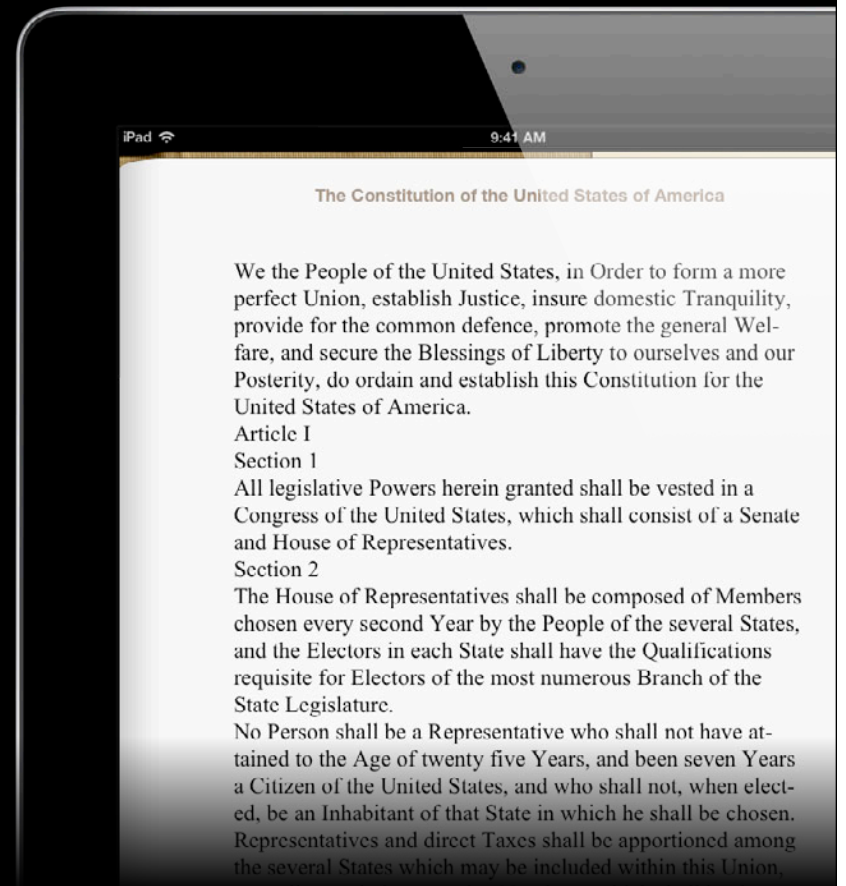
- Use meaningful elements

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

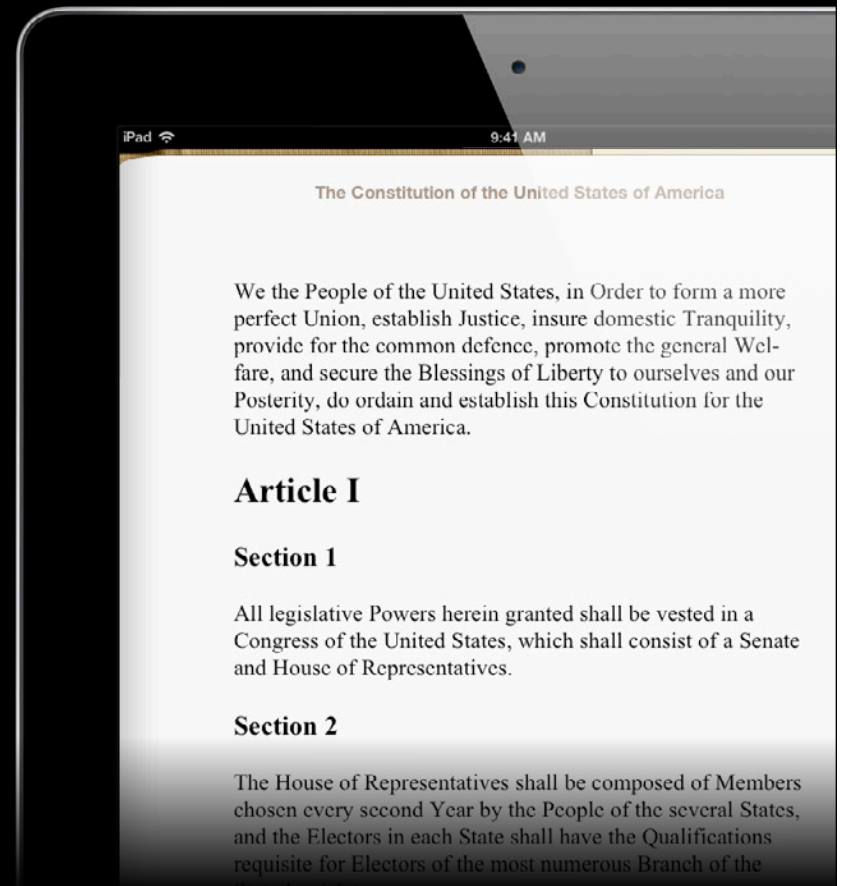
- Use meaningful elements

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

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

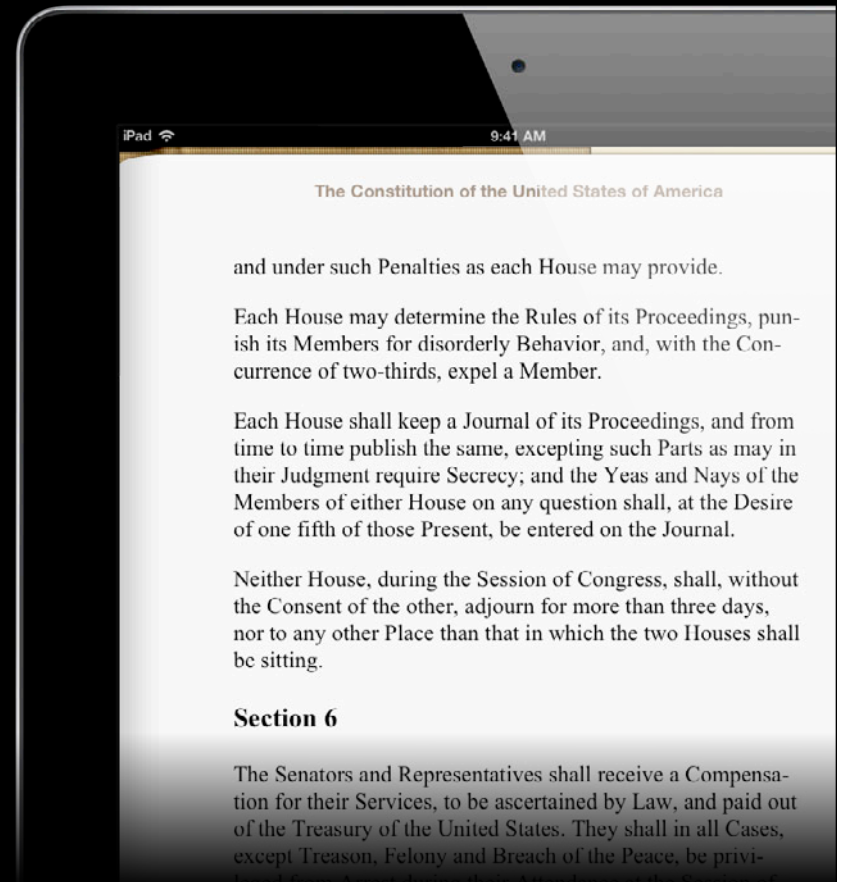
```
<h3>Section 1</h3>
```

```
<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

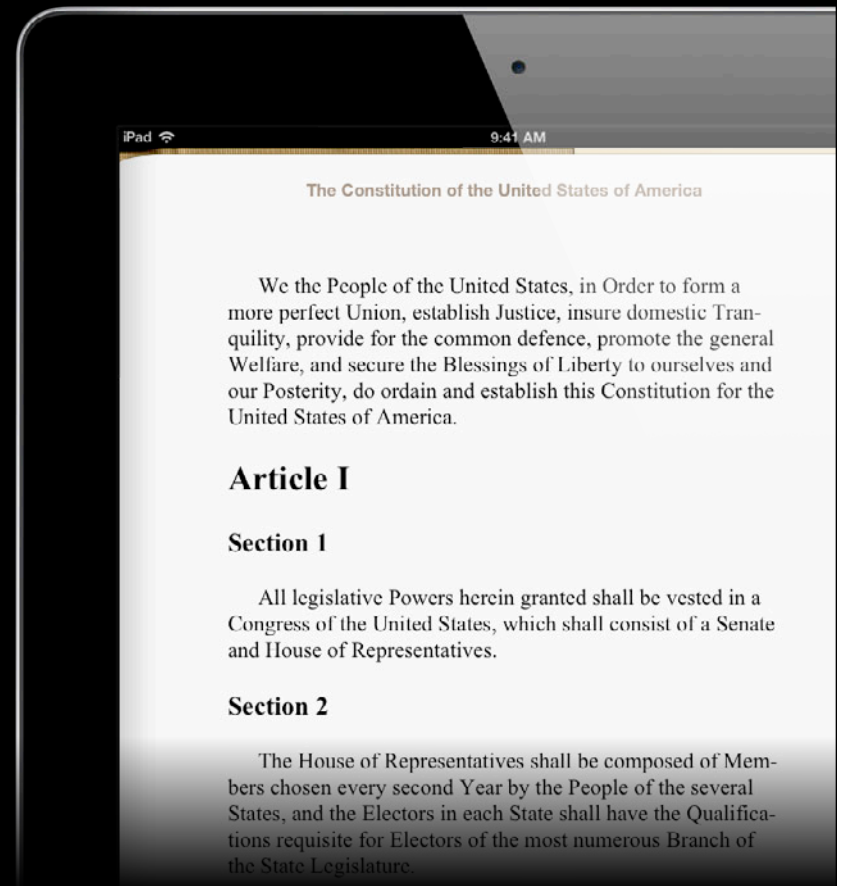
```
<head>  
  . . .  
  <link rel="stylesheet" href="style.css" />  
</head>
```

# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

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

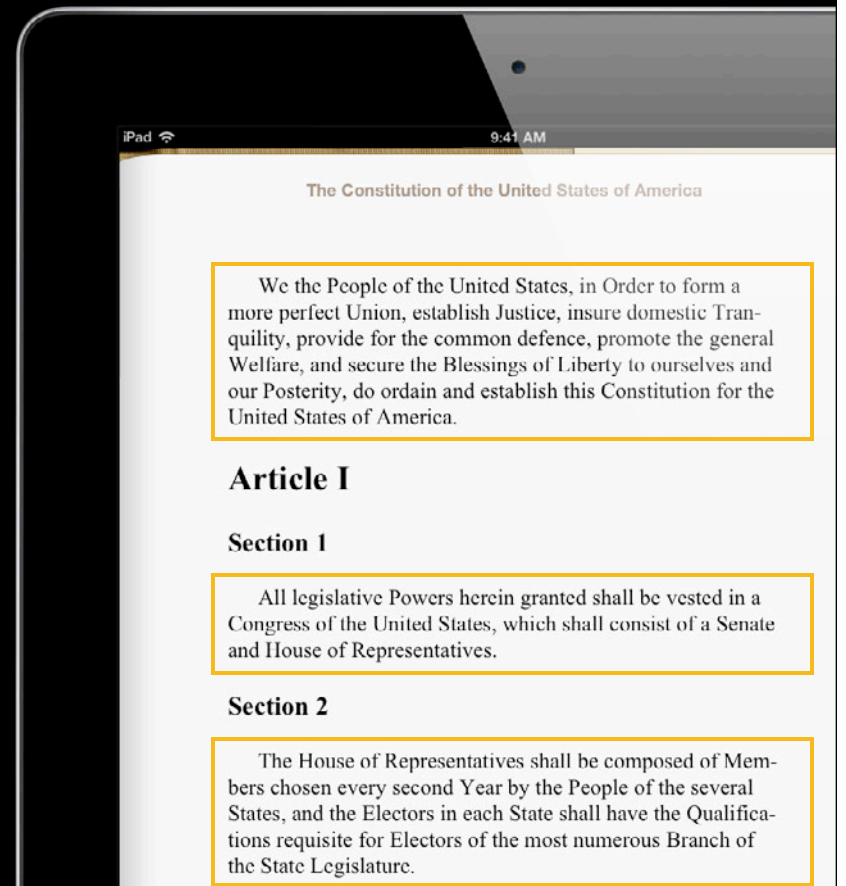


# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

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



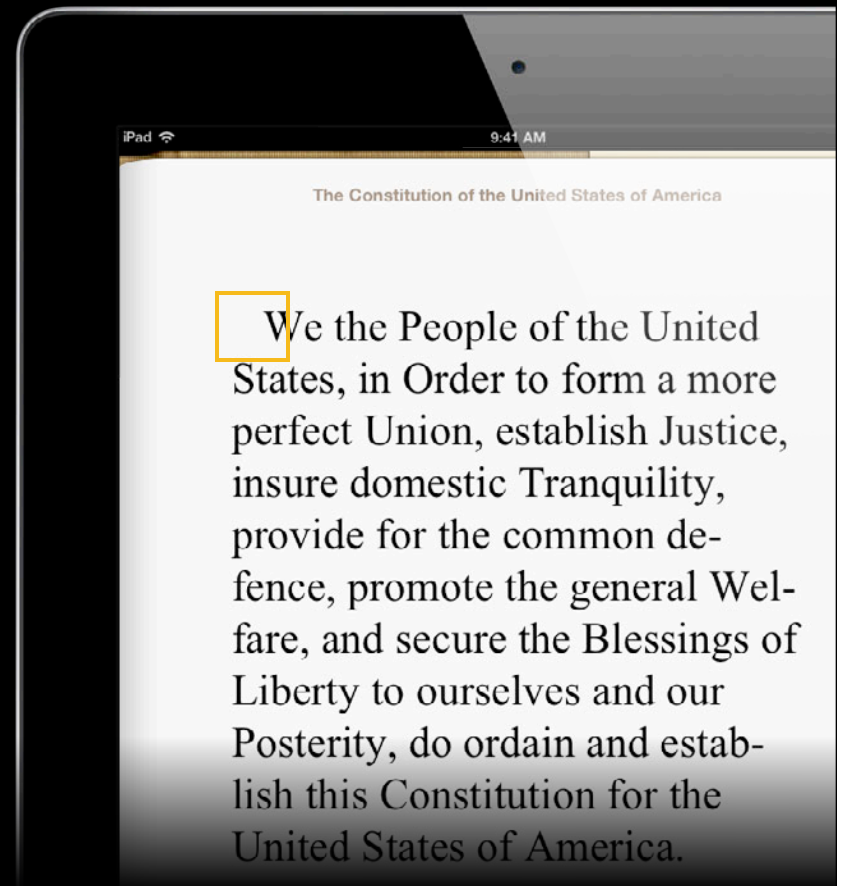
# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

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

- Users can change the font size



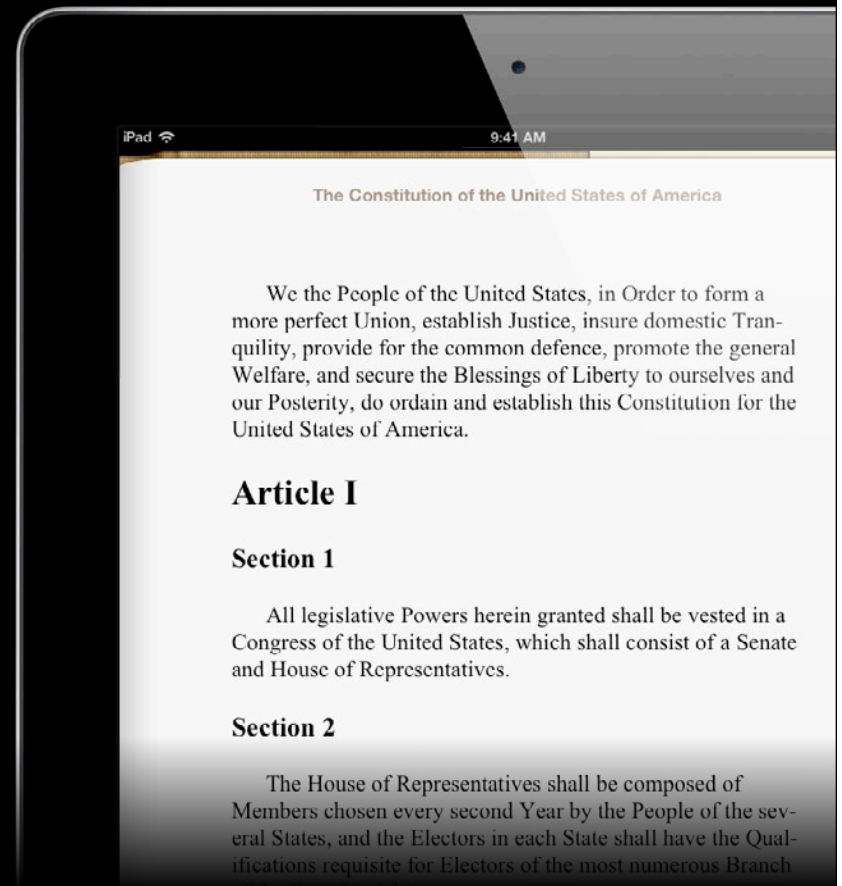
# Text

## 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



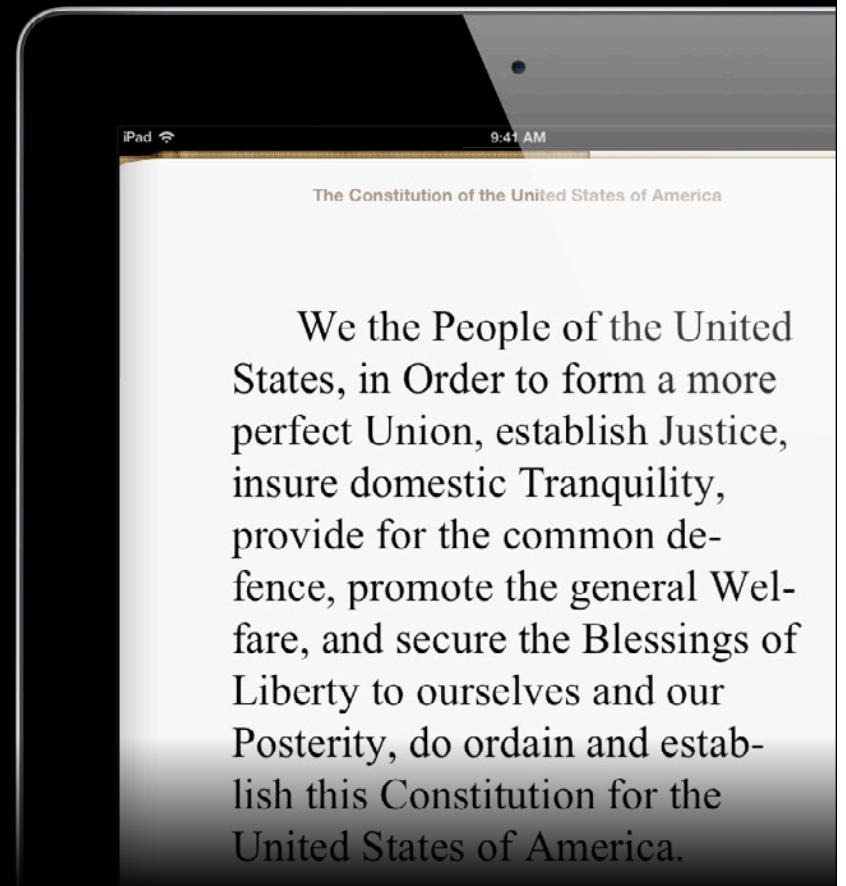
# Text

## Sizing and indenting your prose

- Identify content with selectors
- Specify properties and values

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

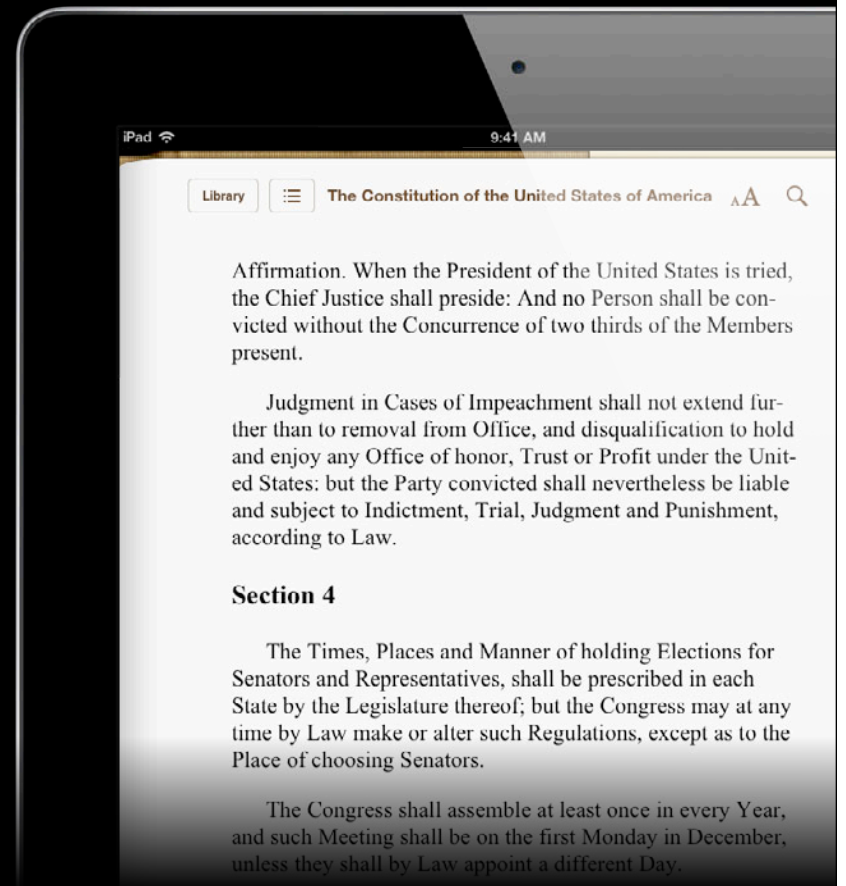
- Users can change the font size
- Font-relative units



# Text

## Sizing and indenting your prose

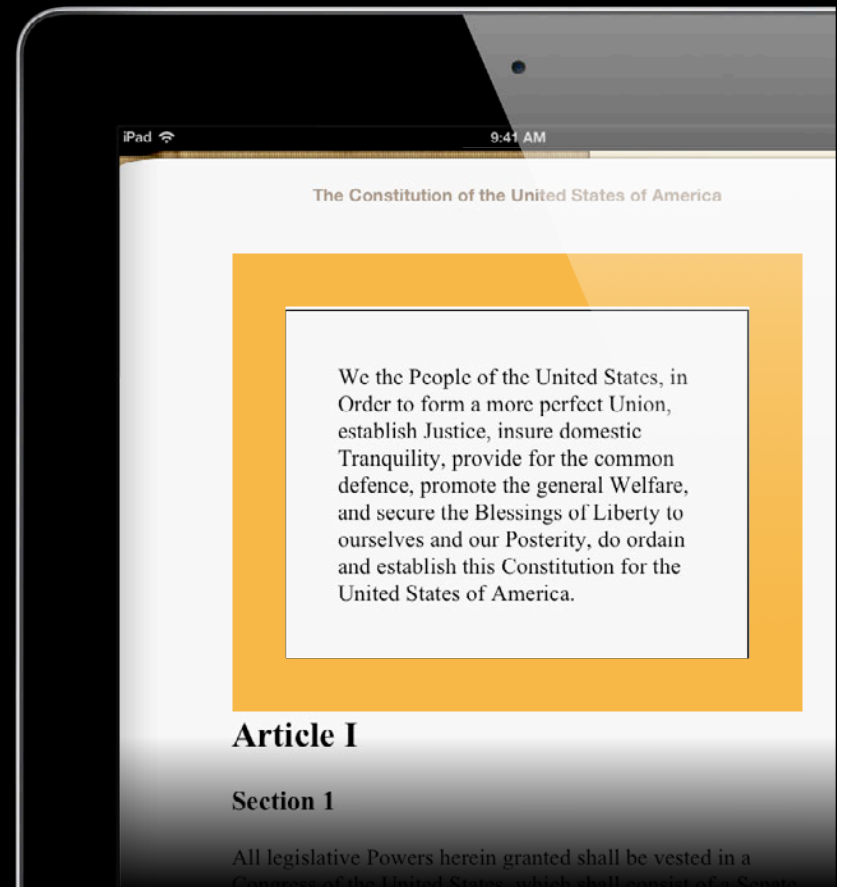
- Space around elements
  - Margins
  - Padding





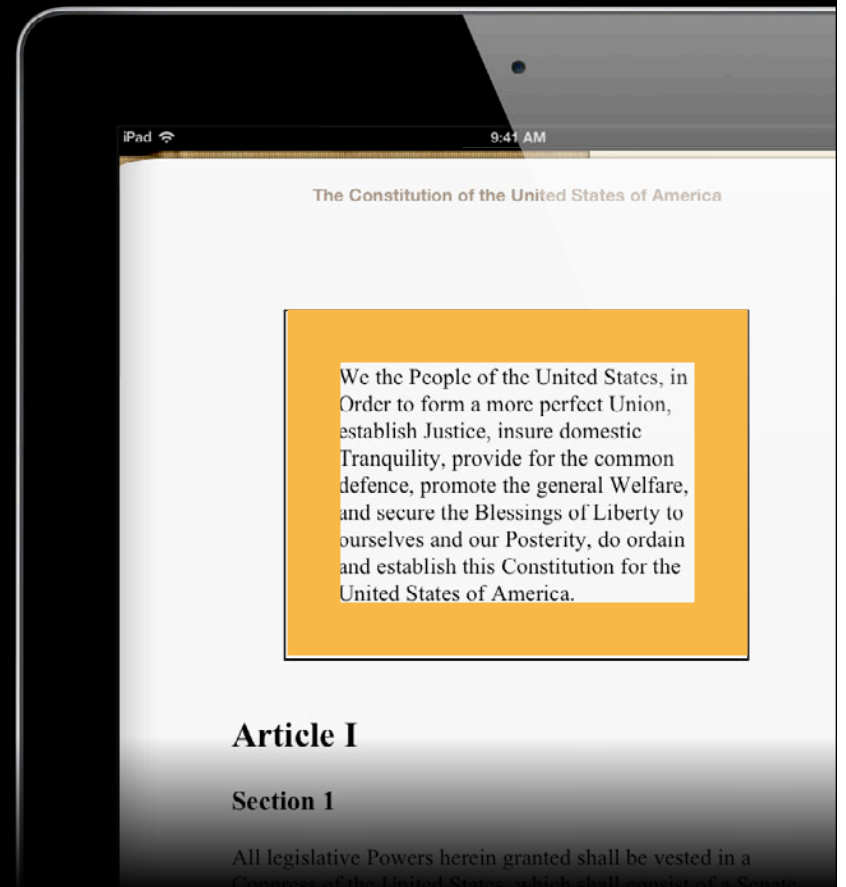
# Margins and Padding

- Margins outside border



# Margins and Padding

- Margins outside border
- Padding inside border

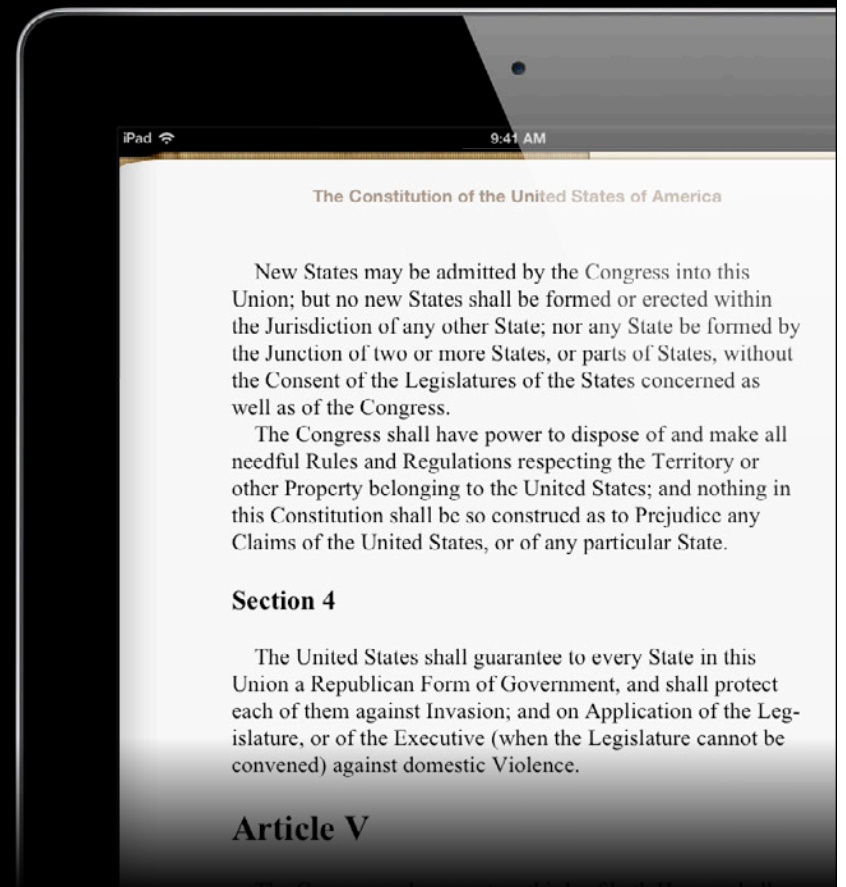


# Text

## Sizing and indenting your prose

- Adjust paragraph margins

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



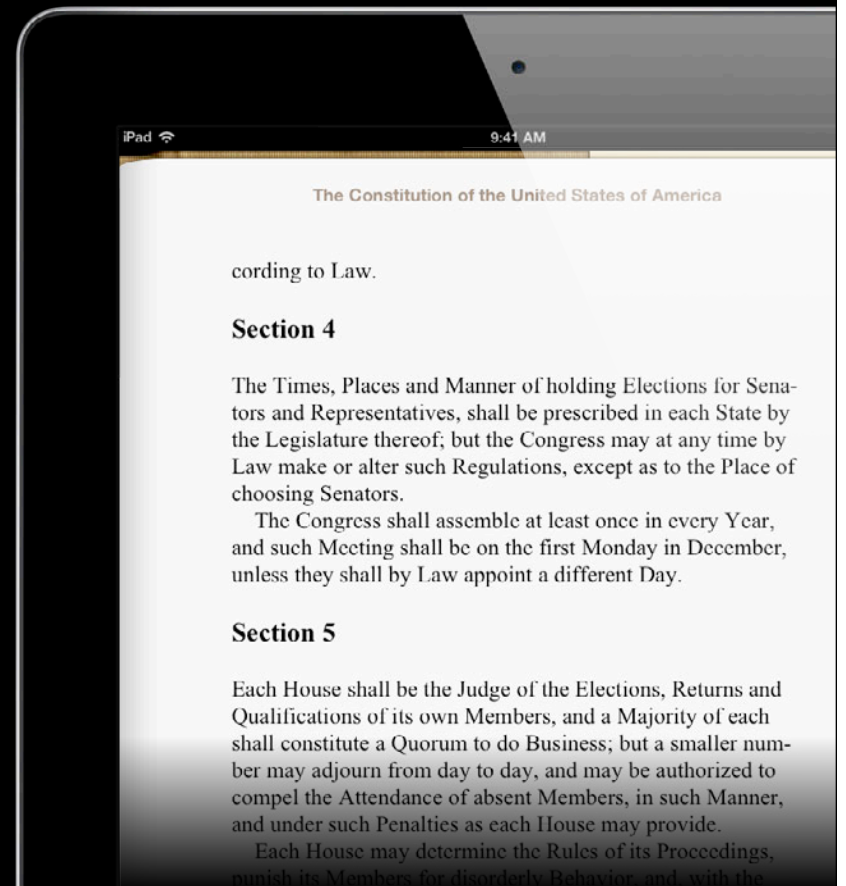
# Text

## Sizing and indenting your prose

- Use a sibling selector

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

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



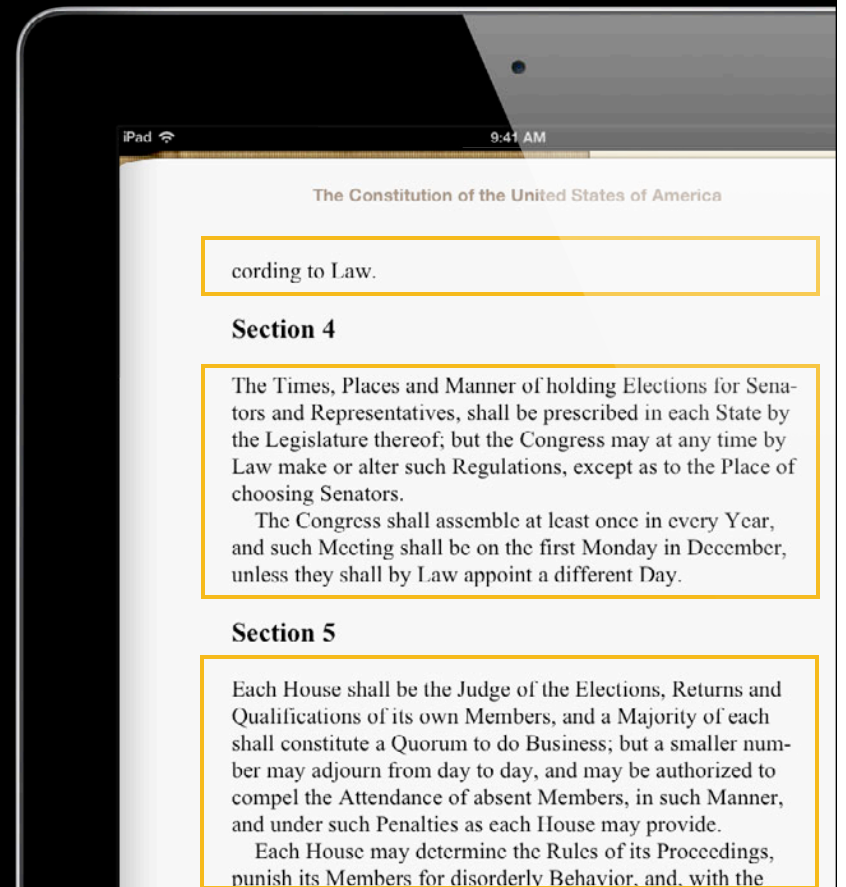
# Text

## Sizing and indenting your prose

- Use a sibling selector

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

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



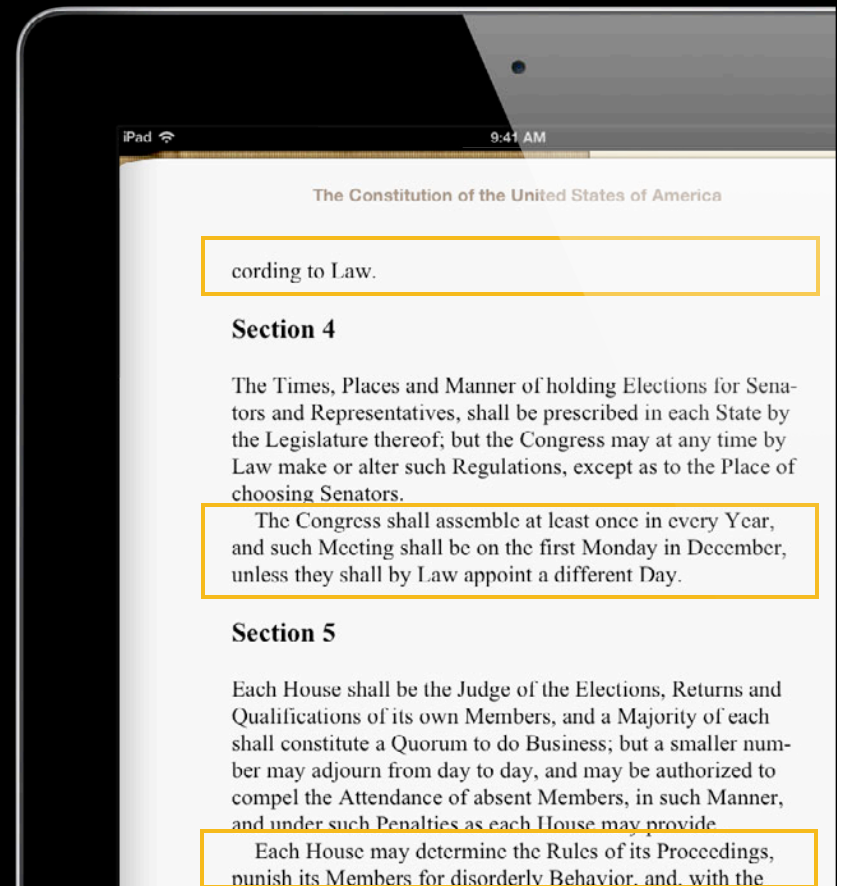
# Text

## Sizing and indenting your prose

- Use a sibling selector

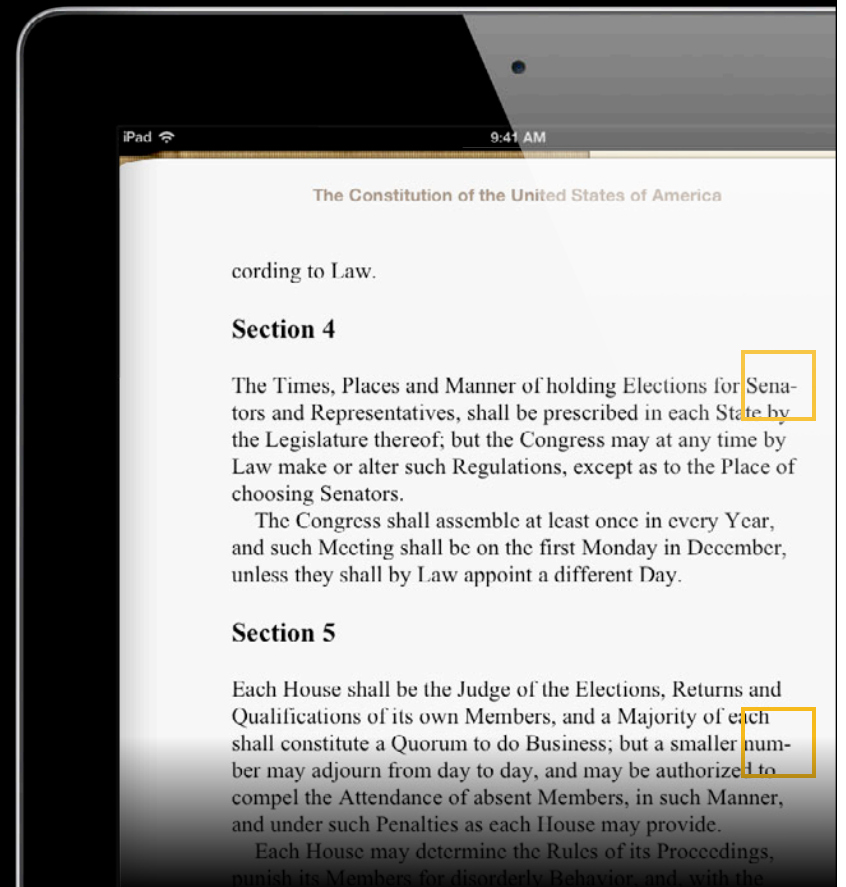
```
p {  
  margin: 0;  
}
```

```
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;cious

# 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;cious
```

- Prevent with `-epub-hyphens: none;`

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

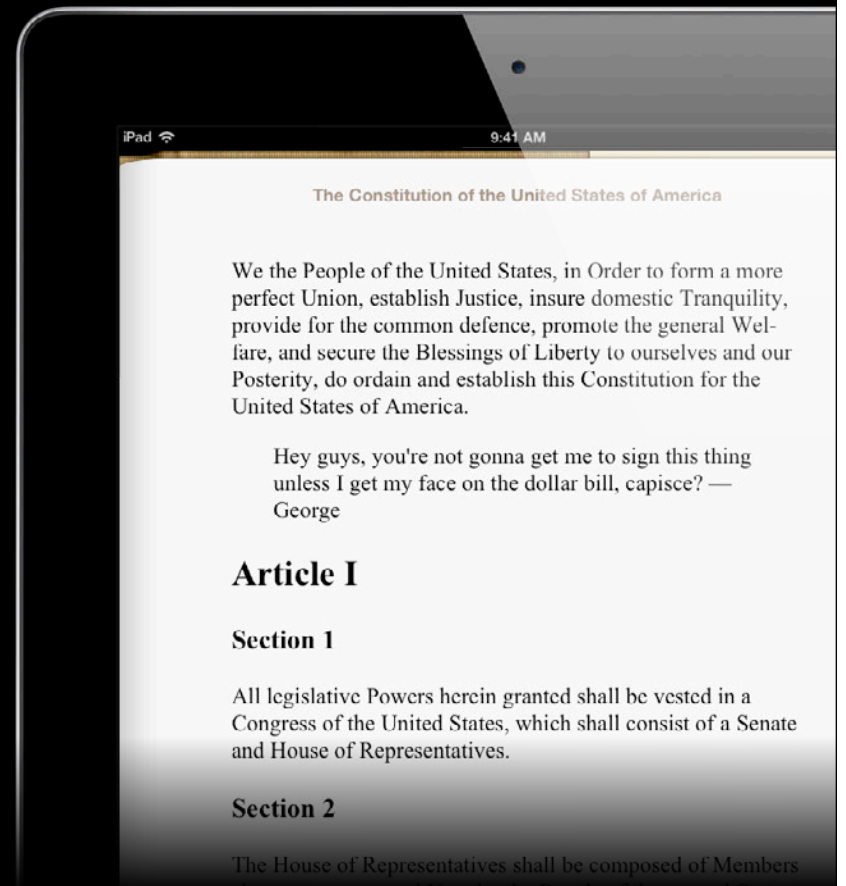
# Quotes

- 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>
```

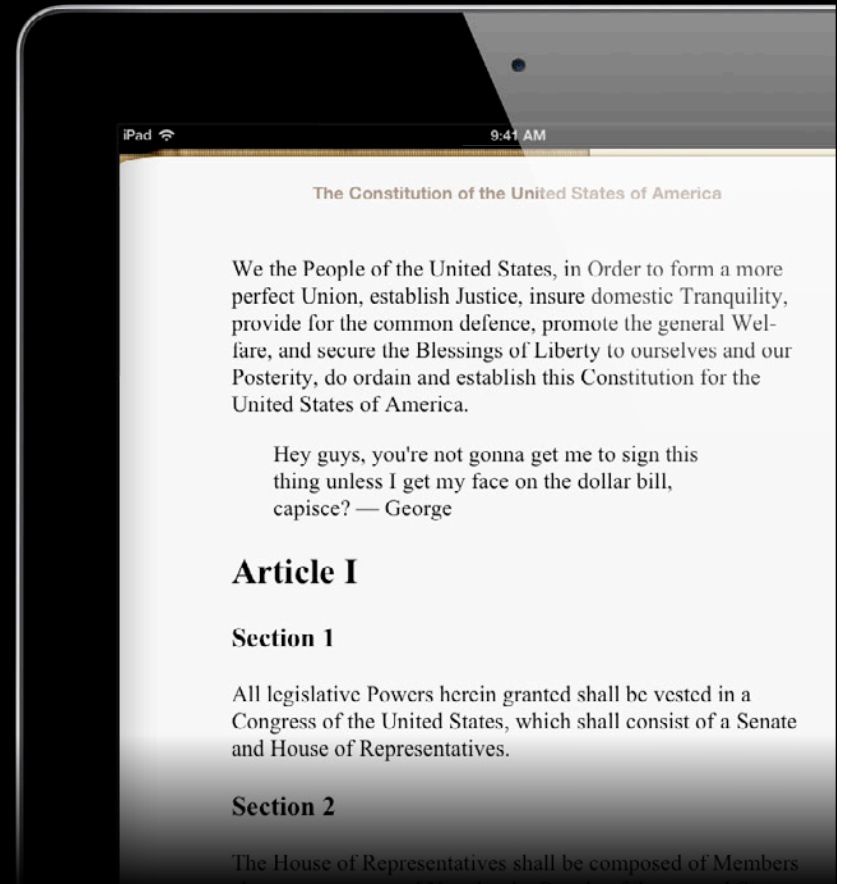
`</blockquote>`



# Quotes

- Use percentages for width

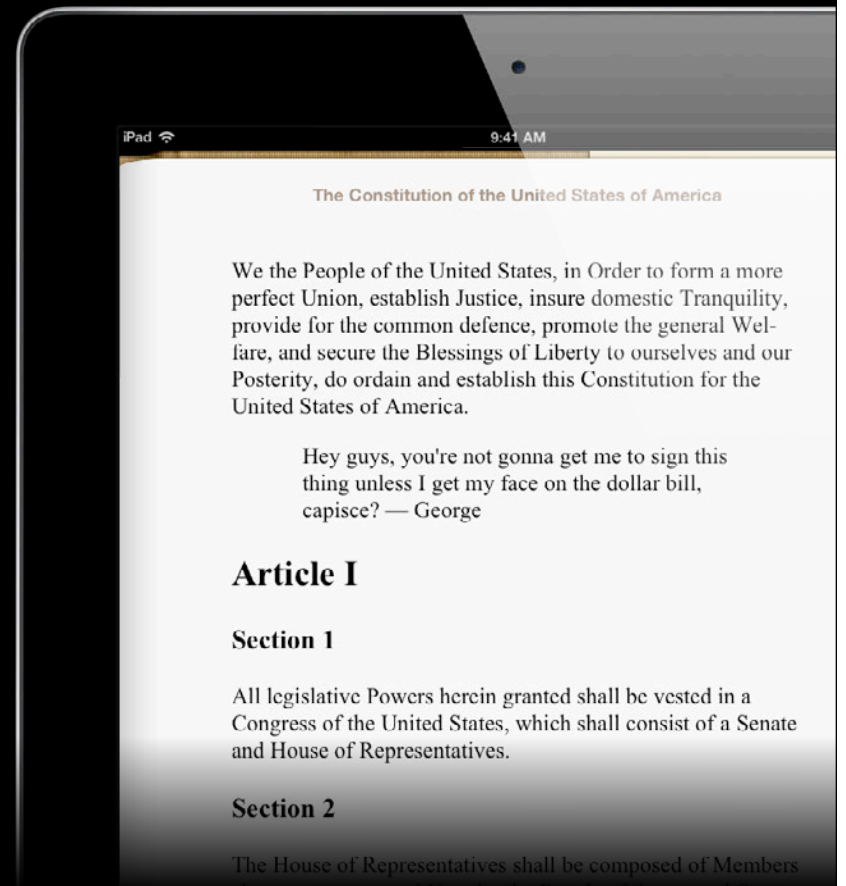
```
blockquote {  
  width: 75%;  
}
```



# Quotes

- Auto margins to center

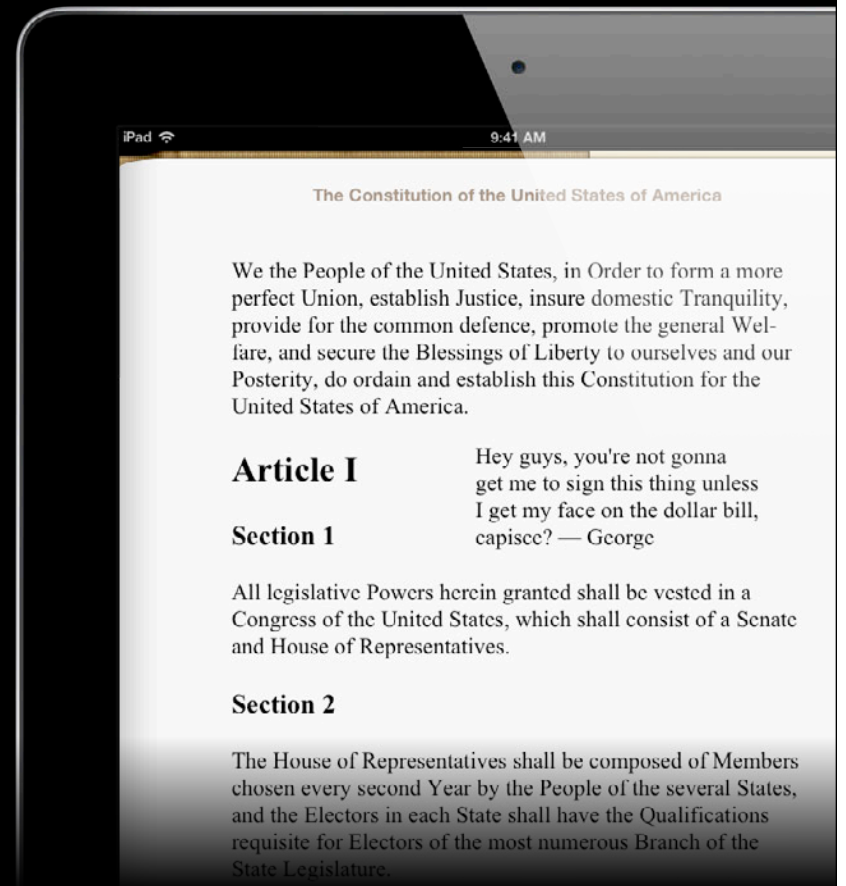
```
blockquote {  
  width: 75%;  
  margin: 1em auto;  
}
```



# Quotes

- Pull the quote out by floating it

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



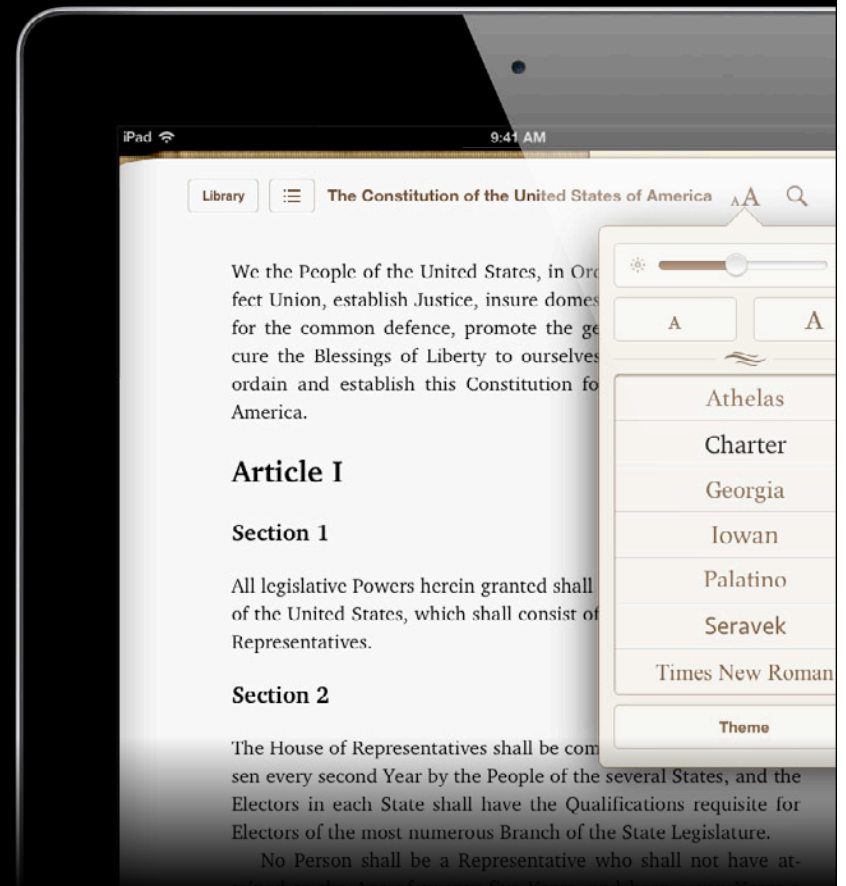
# What You Will Learn

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- Traditional print-quality layout
  - Text
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# Fonts

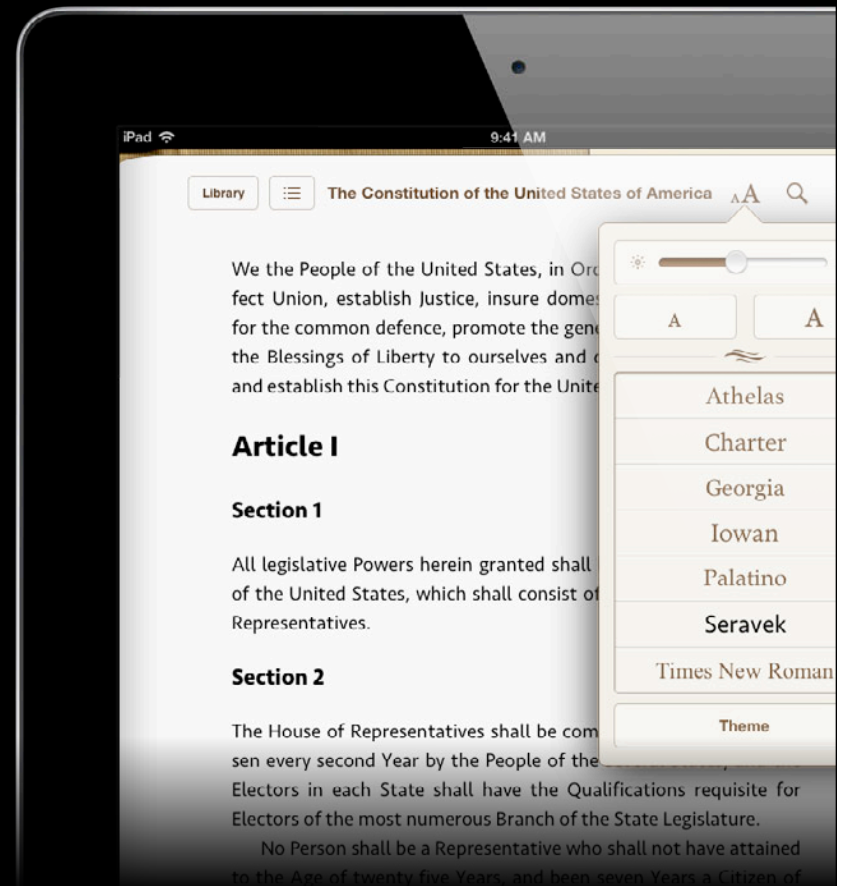
- Customizable





# Fonts

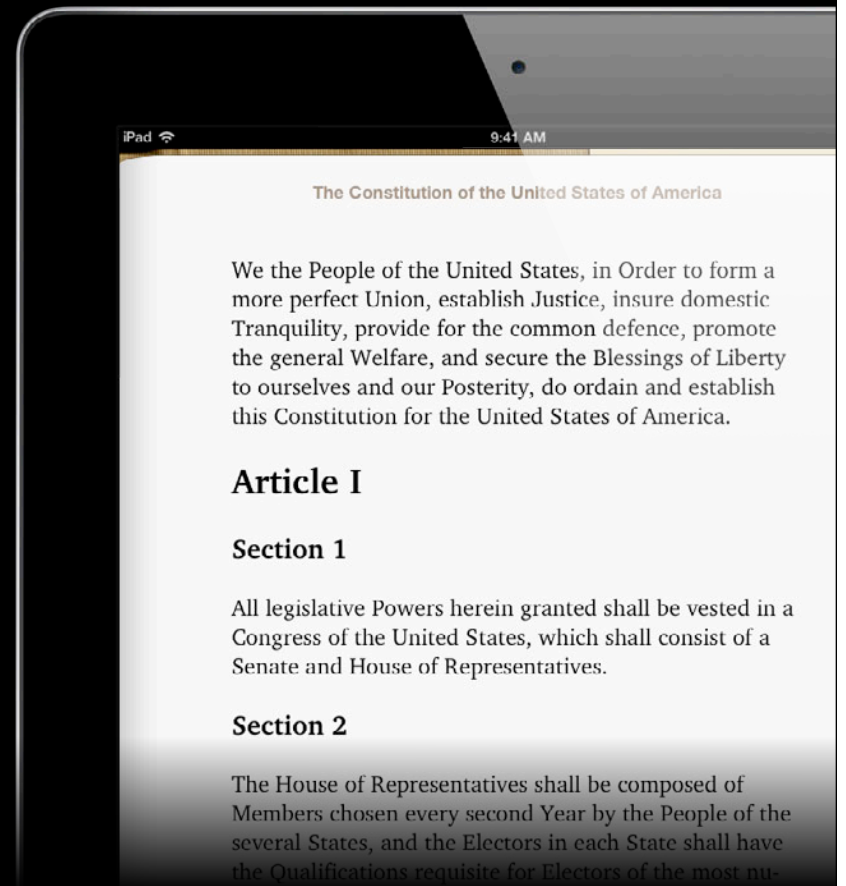
- Customizable



# Fonts

- Set font in CSS

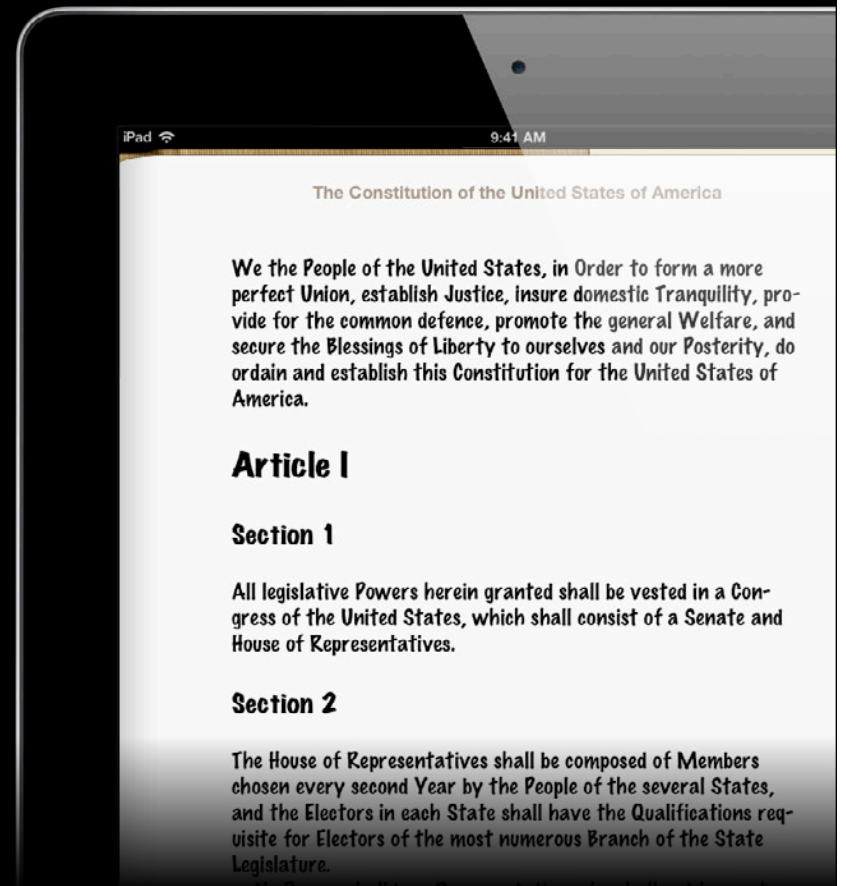
```
body {  
  font-family: Charter, serif;  
}
```



# Fonts

- iOS system fonts

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



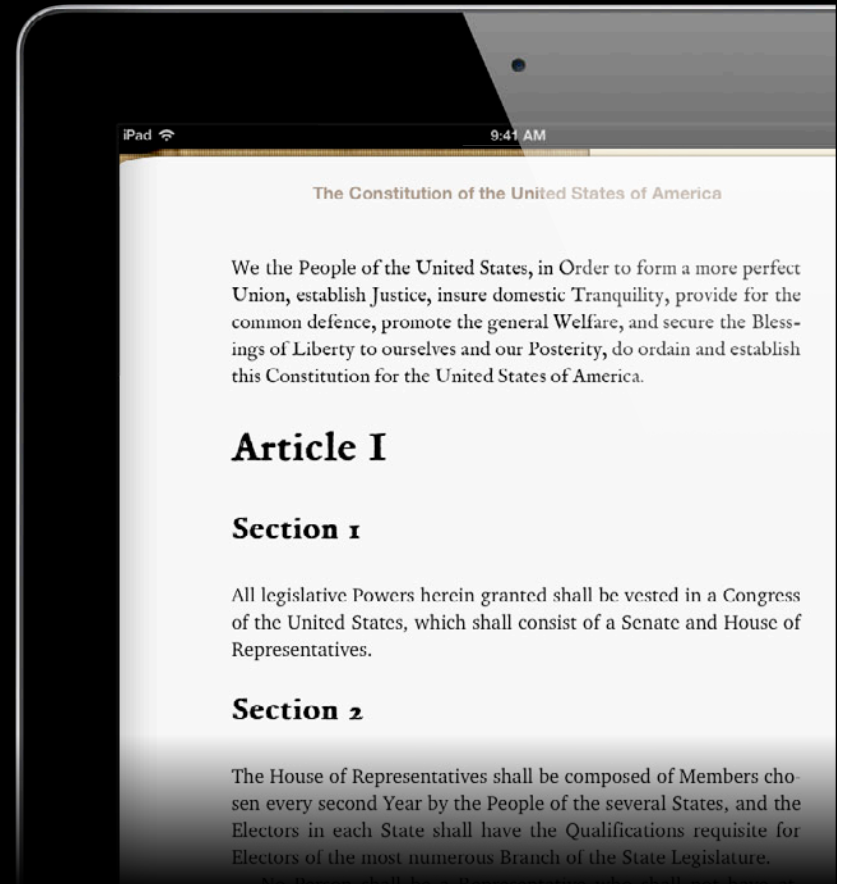
# Custom fonts

- 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;  
}
```

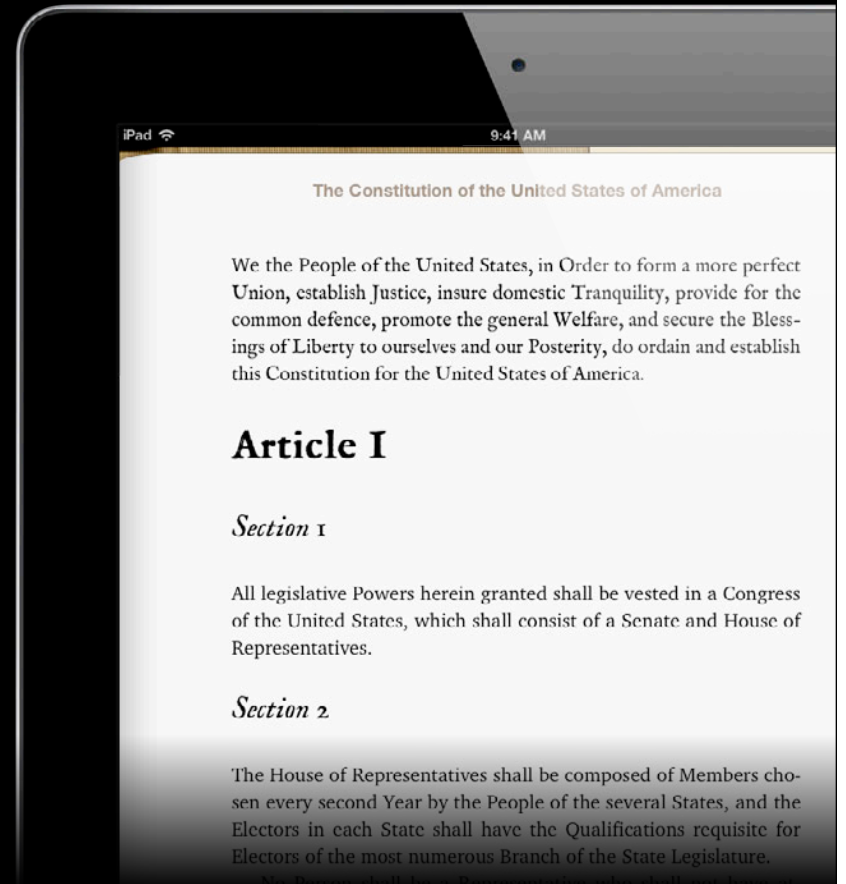


# Custom fonts

- 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);
}

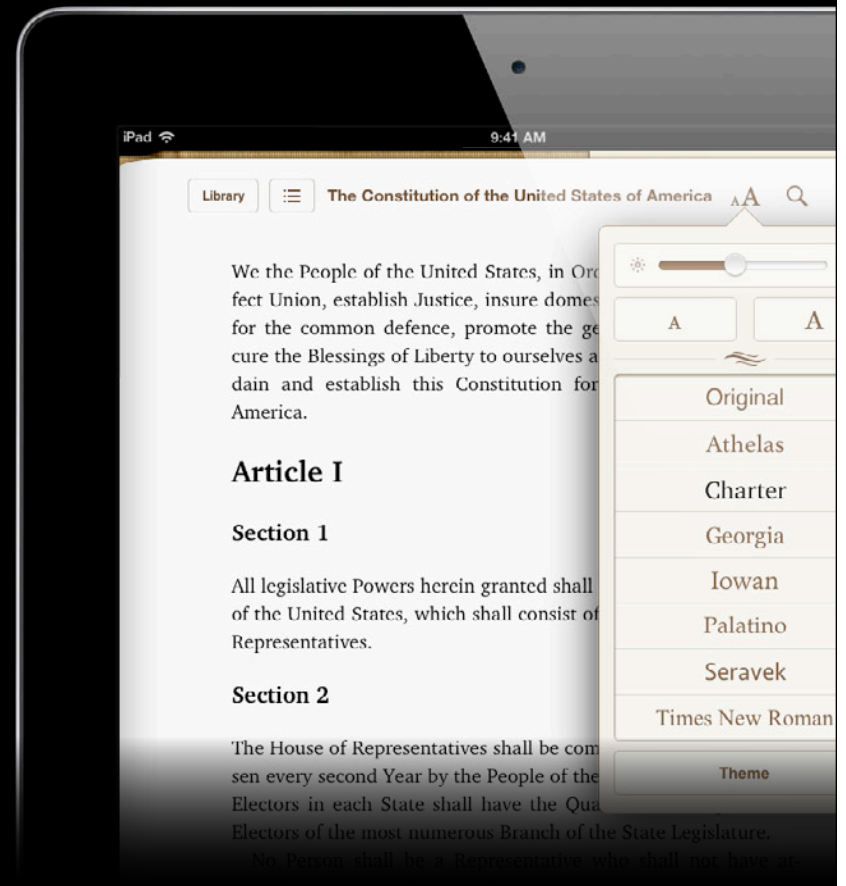
h3 {
  font-style: italic;
  font-weight: normal;
}
```



# Fonts

- Apple Display Options file

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



We the People of the United States, in order to insure domestic Tranquillity, provide for the common Defence, promote and secure Posterity, do ordain and establish this Constitution for the United States in and among ourselves.

## Article. 1.

Section. 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section. 2. The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, in each State shall have <sup>the</sup> Qualifications requisite for Electors of the most numerous Branch in that State.

No Person shall be a Representative who shall not have attained to the Age of twenty five Years, seven 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 which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a certain Term, and 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 Years which shall be ascertained by Law.



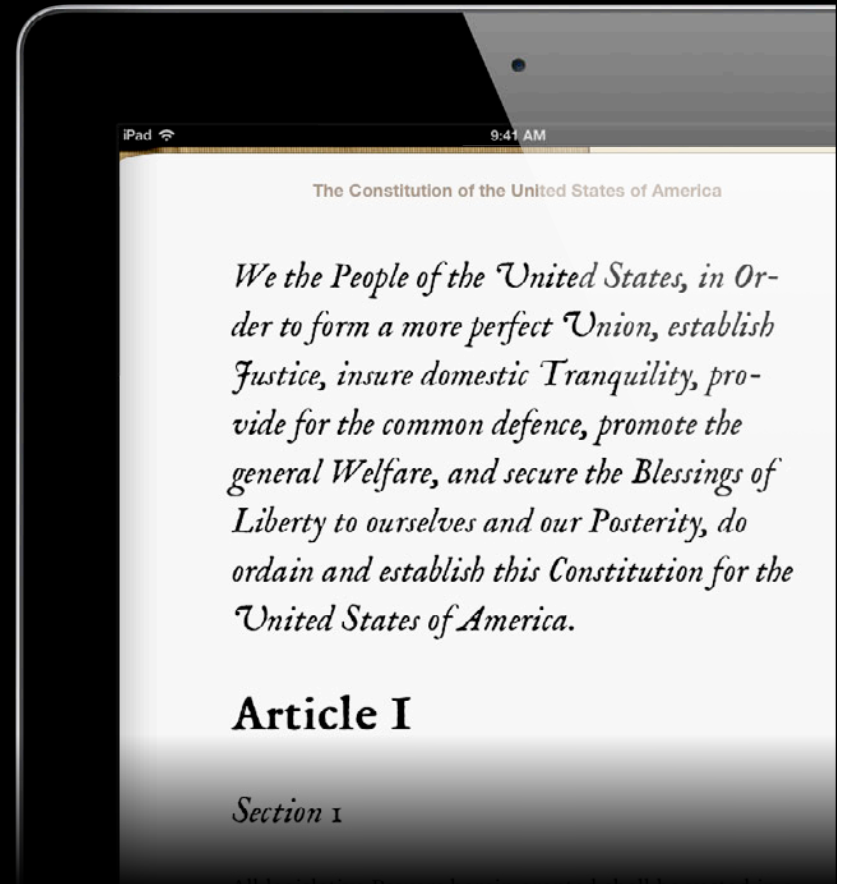
# Custom fonts

- 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
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# Images

- Specify the image file and alternative text

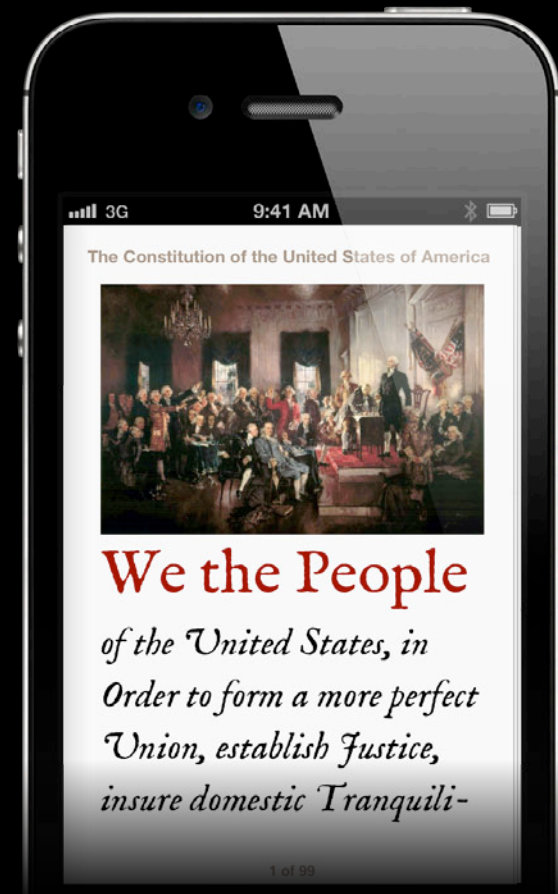
```

```



# Images

- Automatically sized



# Images

- Adjust size with a container

```
<div id="signing">  
    
</div>
```

```
#signing {  
  width: 80%;  
  margin: 0.5em auto 1em auto;  
}
```

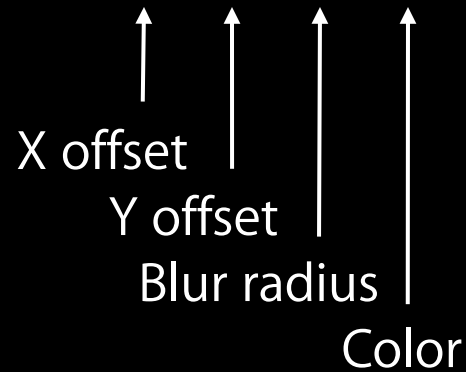




# Images

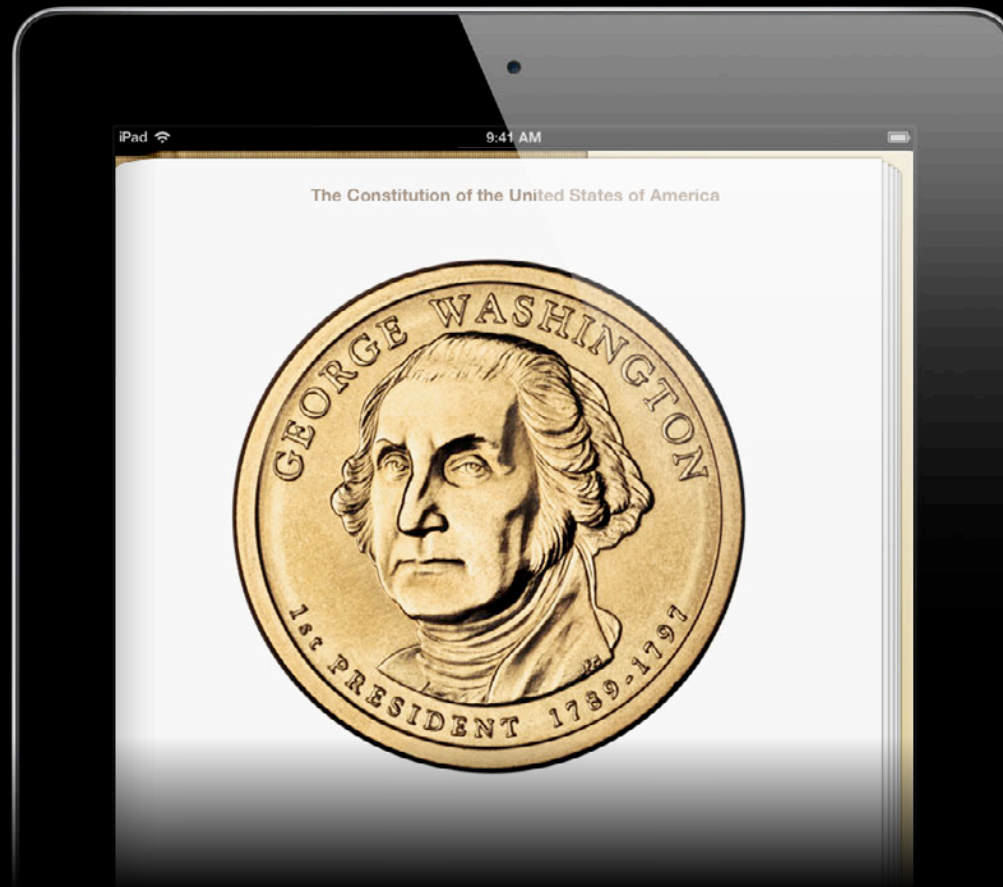
- Shadow effects

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

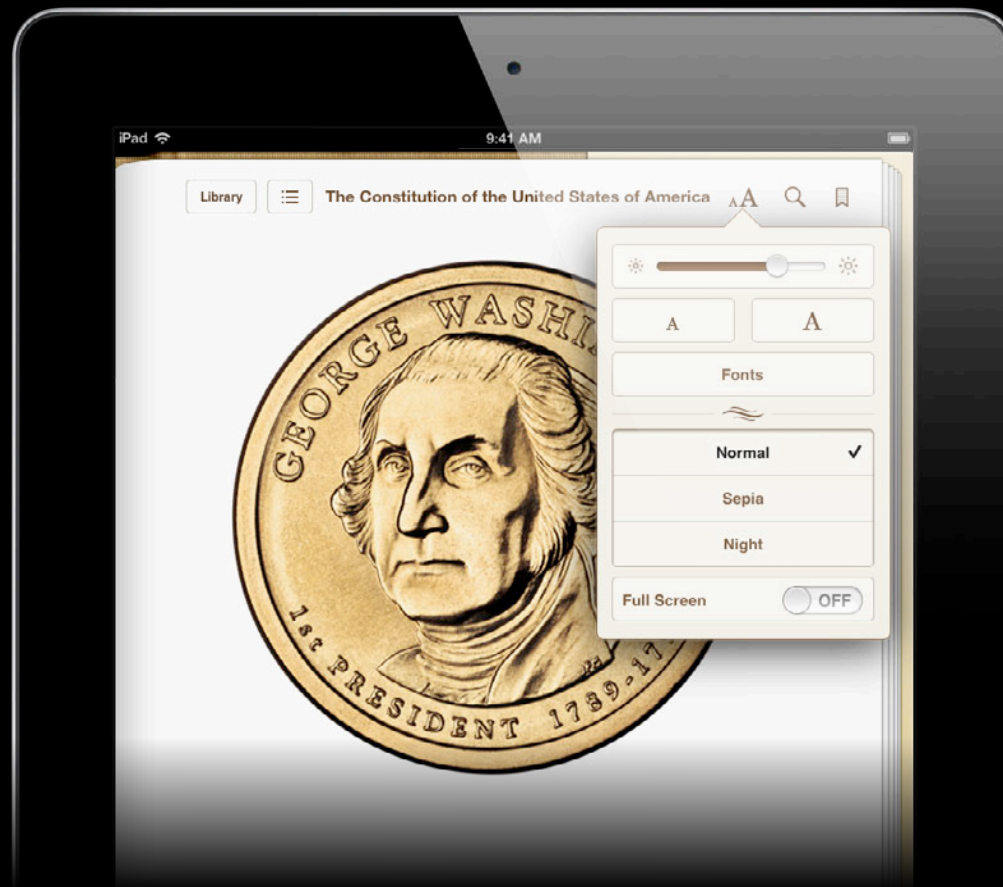




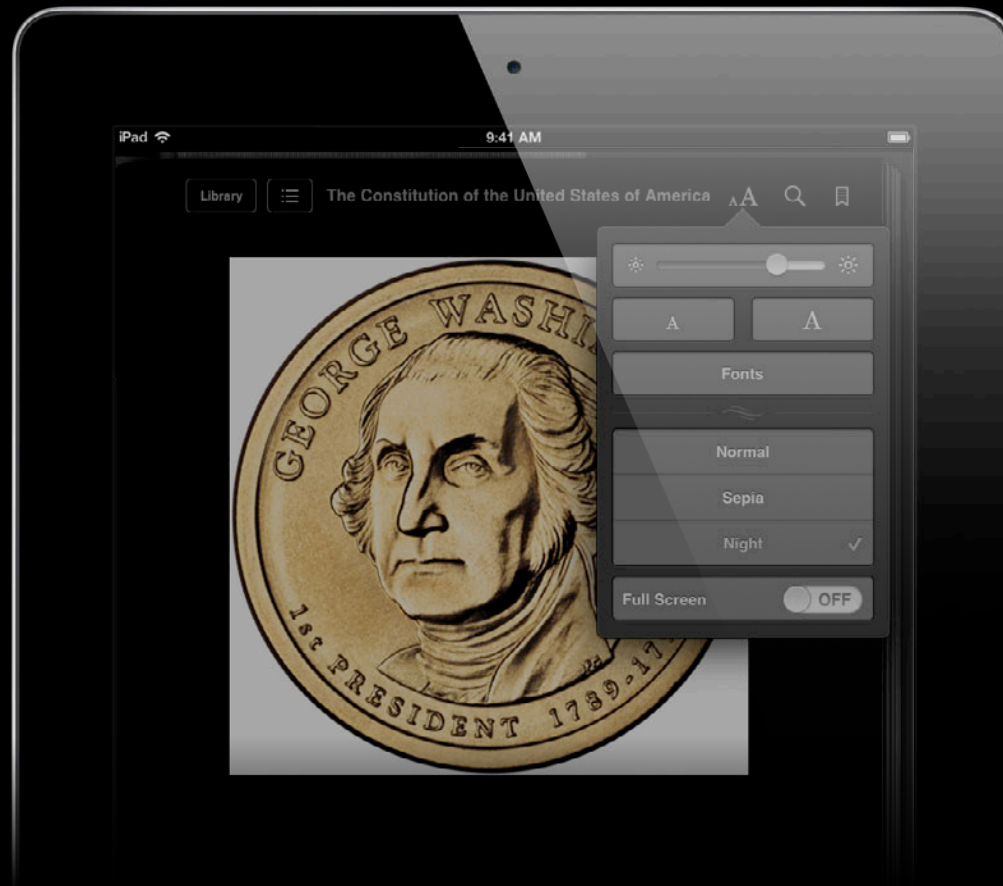
# Images and Themes



# Images and Themes



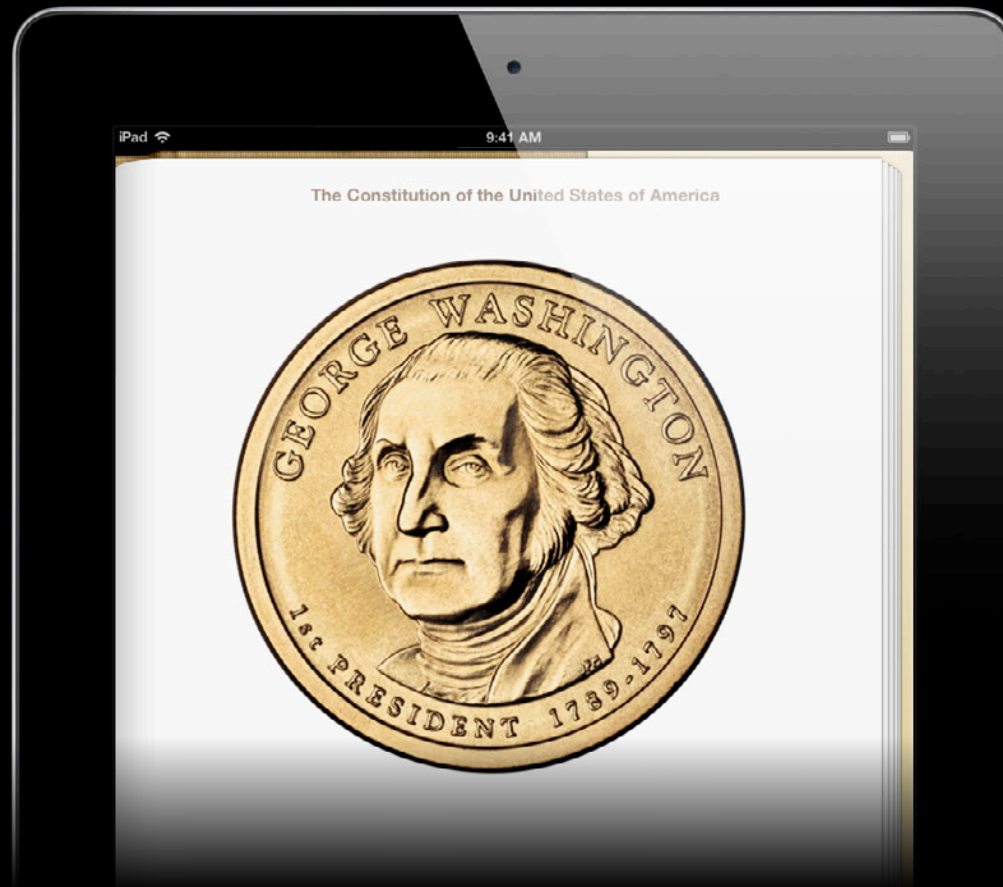
# Images and Themes



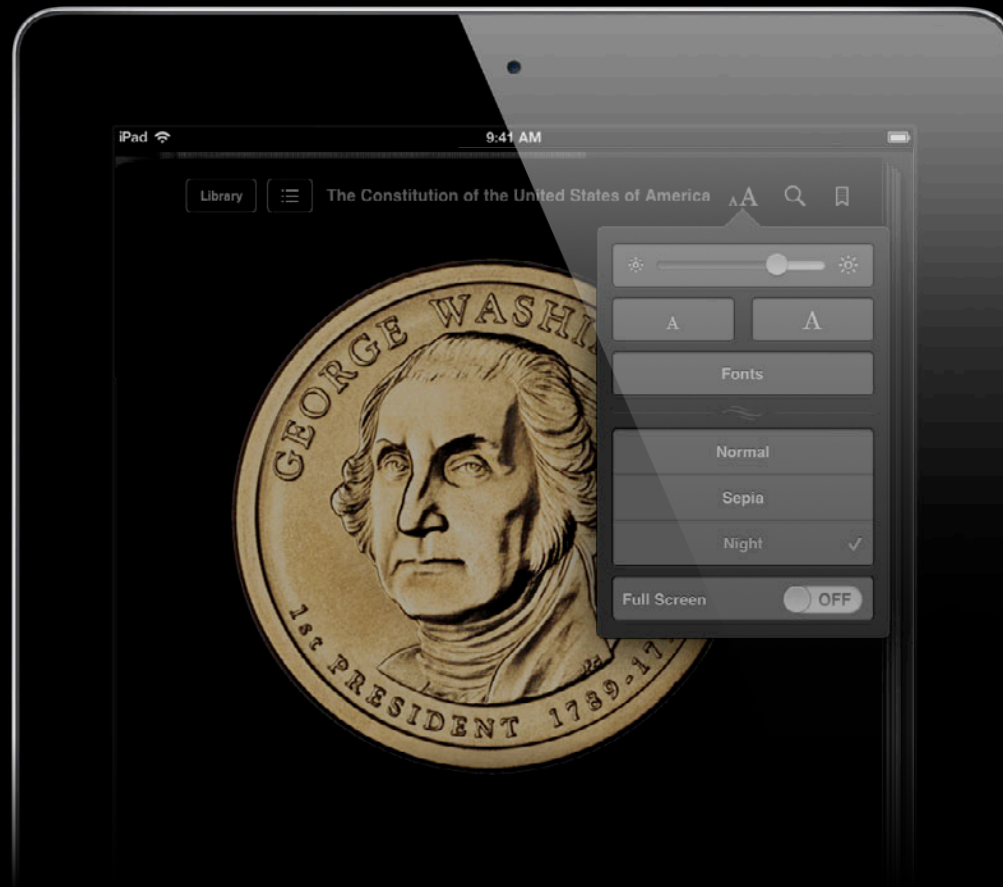
# Images and Themes



# Images and Themes



# Images and Themes



# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
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# Beyond Print

Adding rich layout and animation



# What You Will Learn

## Beautiful content for digital books

- Traditional print-quality layout
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# Fixed Layout

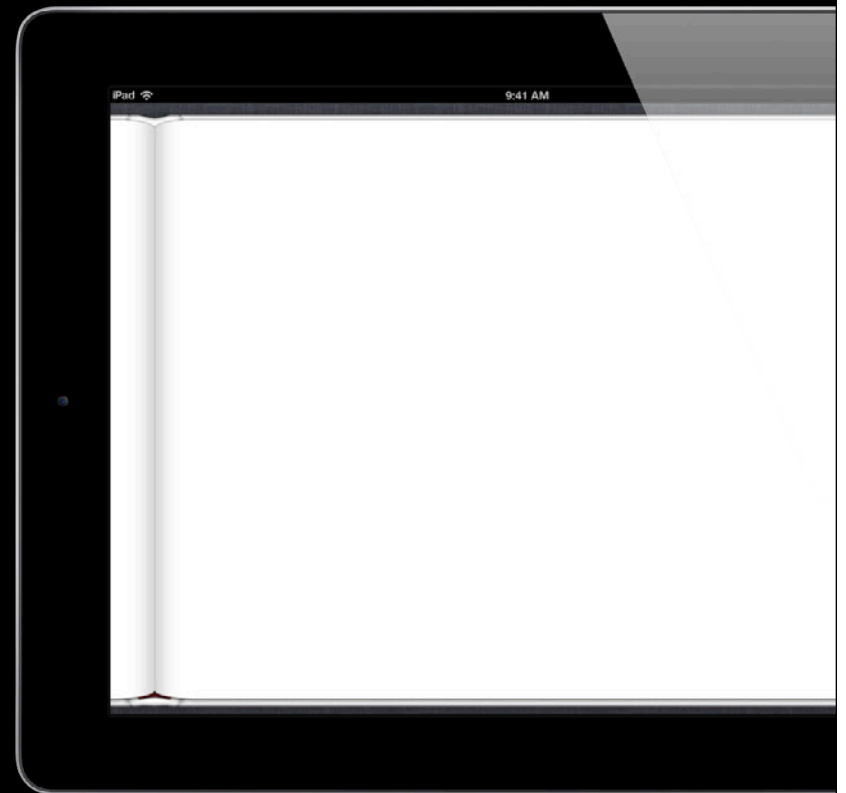
- Set page size

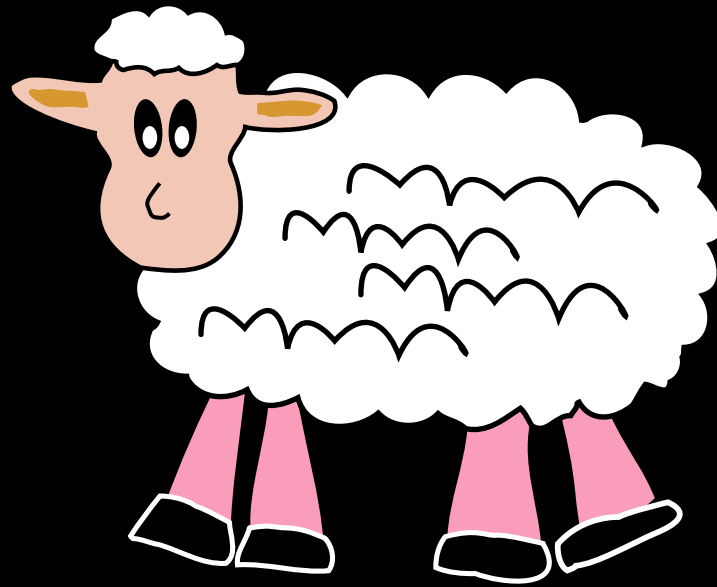
```
<meta name="viewport"
content="width=1024, height=768"/>
```

- Style body to match

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

- Zero margins on body

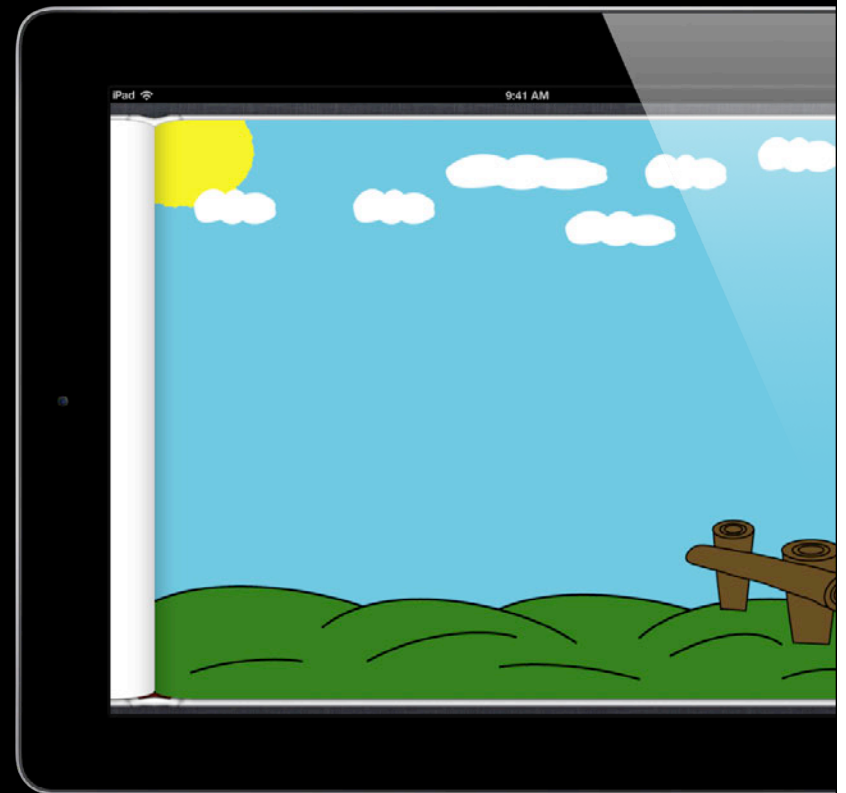




# Background Images

- Background image

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

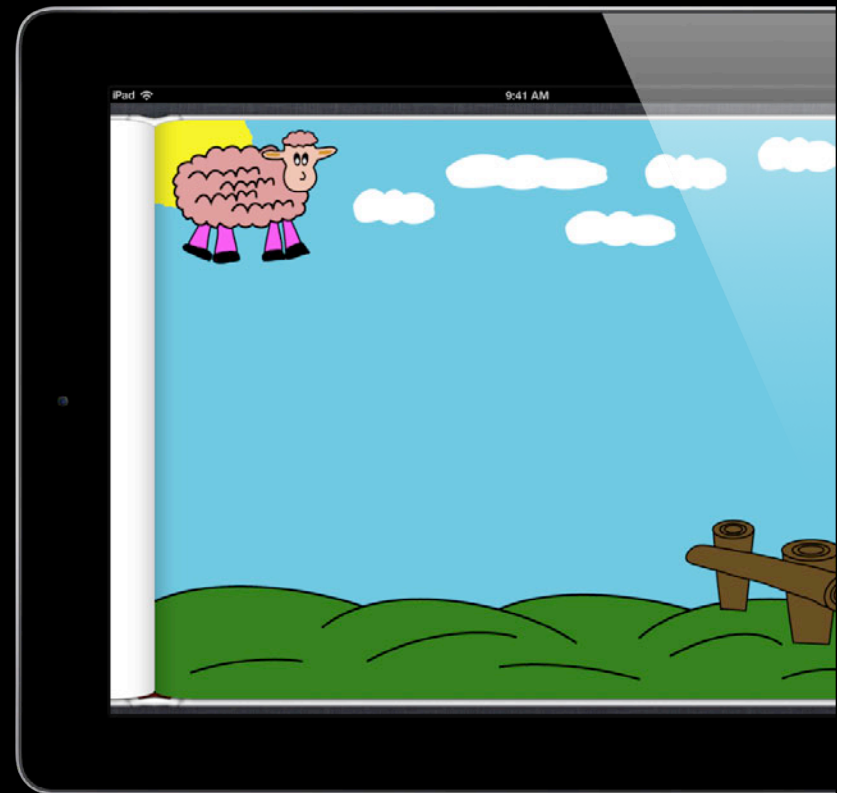


# Placing Elements

- Foreground elements

```

```

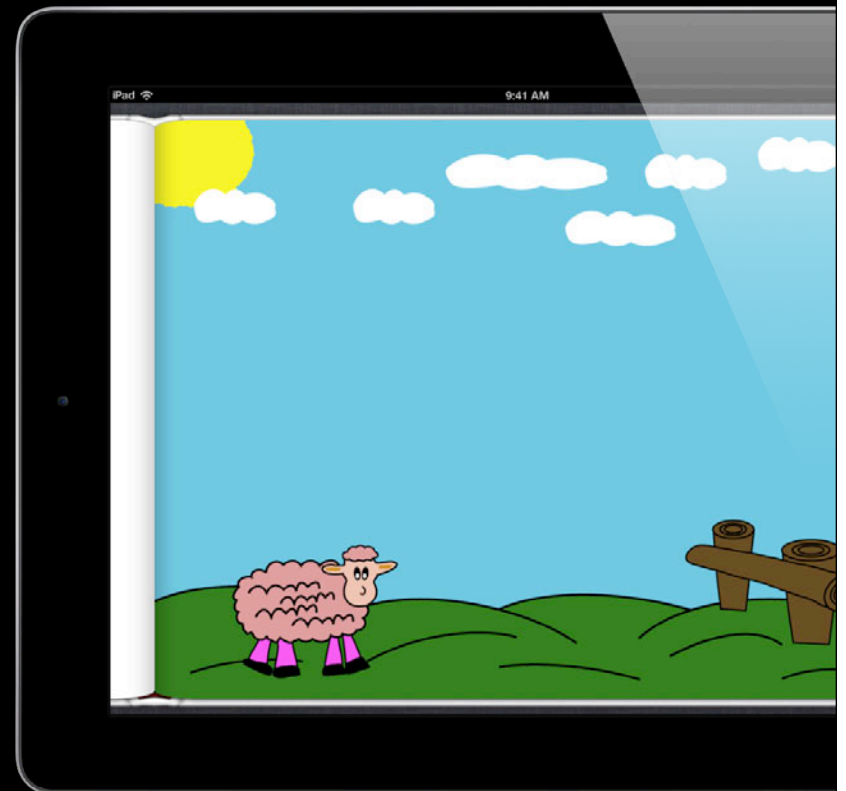


# Placing Elements

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

```
<body>  
    
</body>
```

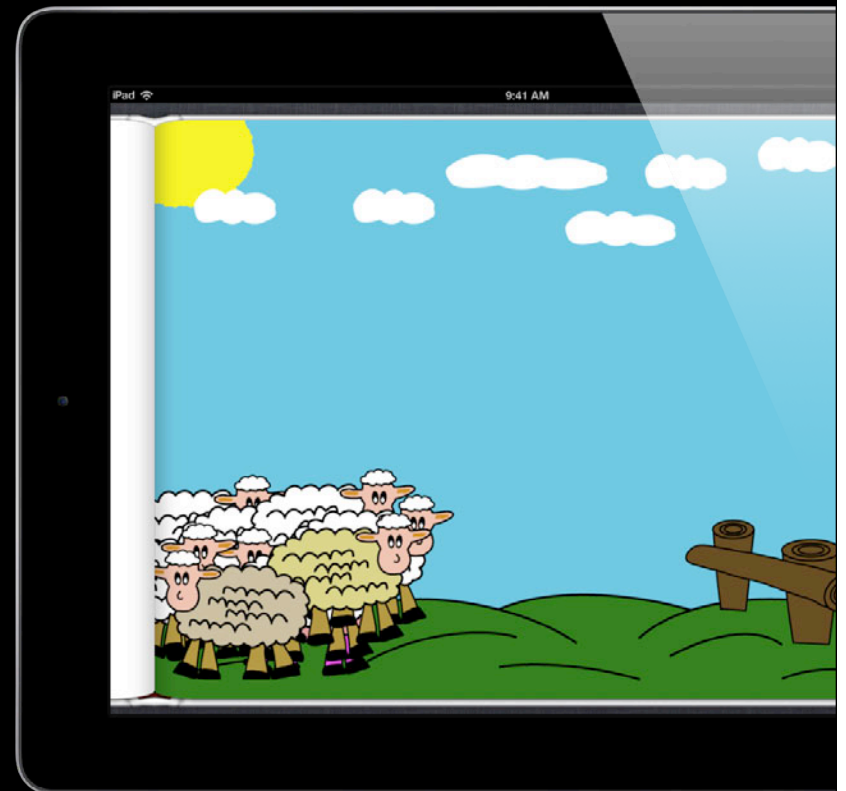
```
#bruce {  
  position: absolute;  
  top: 550px;  
  left: 80px;  
}
```



# 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;  
}
```



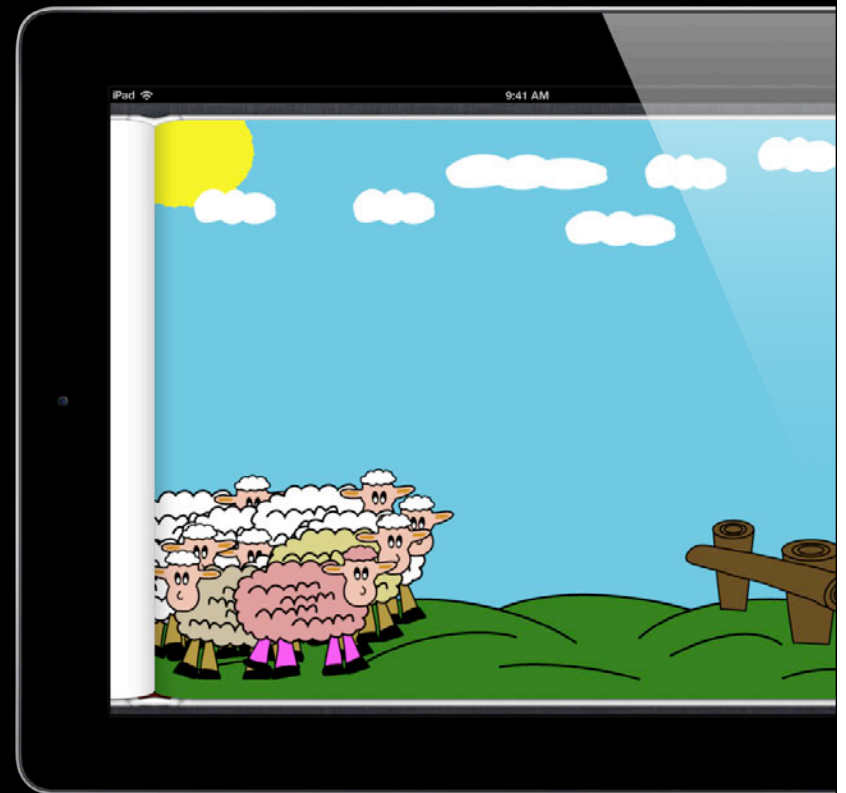


# Animating Page Elements

## CSS keyframe animations

- Defined by the `@keyframes` rule

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



# Animating Page Elements

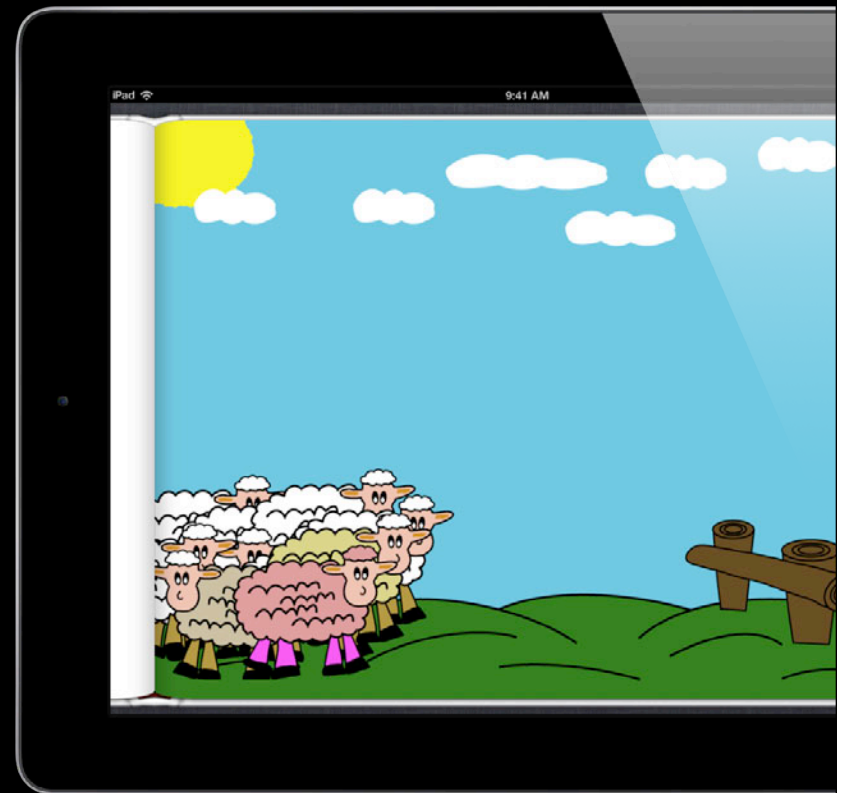
## CSS keyframe animations

- 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

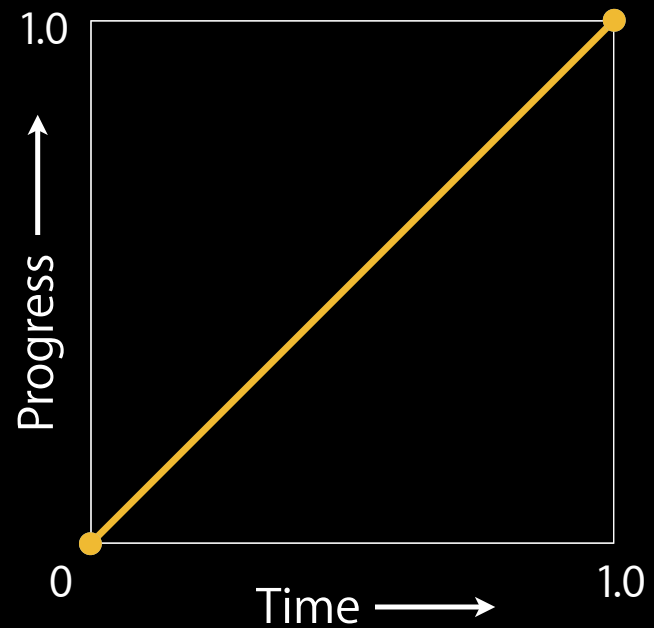
```
#bruce {  
  -webkit-animation-name: walk;  
  -webkit-animation-duration: 1s;  
  -webkit-animation-timing-function: ease;  
}
```



# Animating Page Elements

## Timing functions

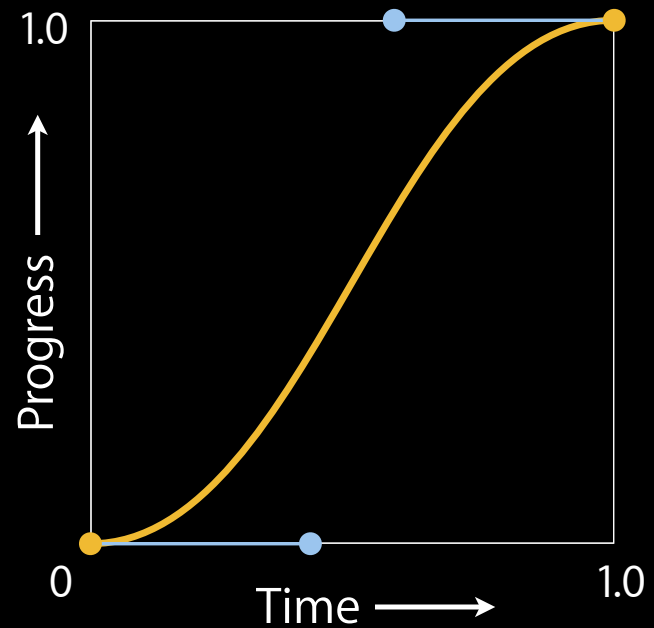
- Pre-defined times
  - linear
  - ease
  - and more
- Custom times
  - `cubic-bezier(x1,y1,x2,y2)`



# Animating Page Elements

## Timing functions

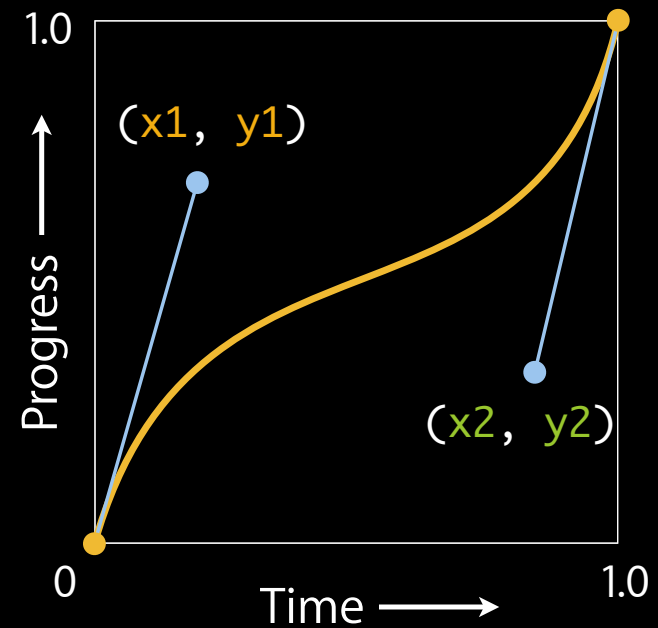
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  - `cubic-bezier(x1,y1,x2,y2)`



# Animating Page Elements

## Timing functions

- Pre-defined times
  - linear
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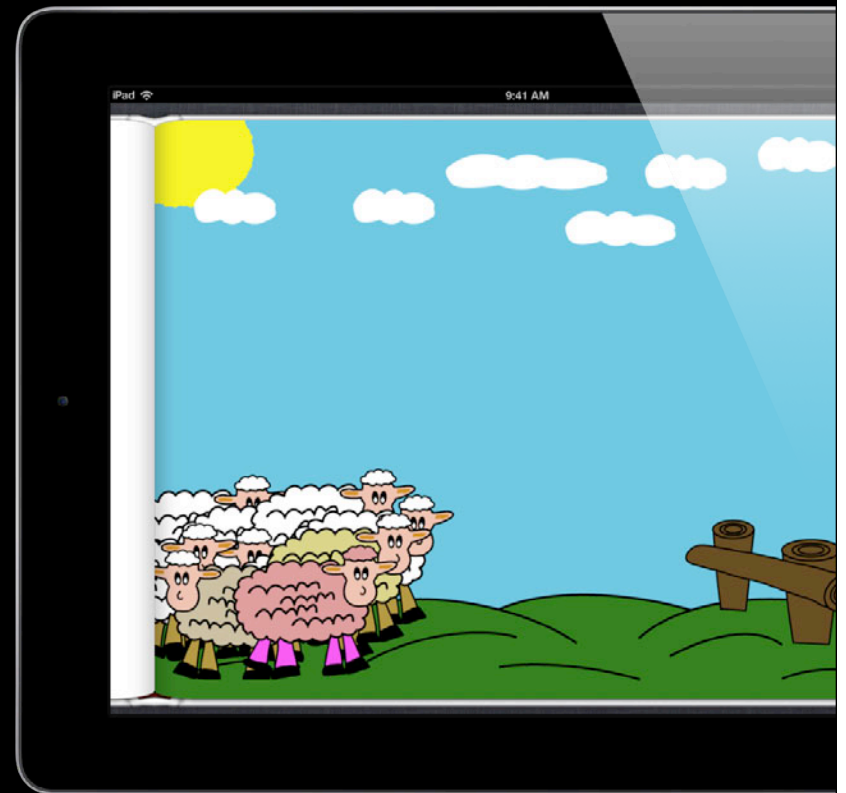


# Animating Page Elements

## CSS keyframe animations

- What goes in each keyframe?

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



# Animating Page Elements

## CSS transforms

- Move things around

```
-webkit-transform: translate(-50px, 50px);
```





# Animating Page Elements

## CSS transforms

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# Animating Page Elements

## CSS transforms

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-webkit-transform: translate(-50px, 50px);
```

- Make things bigger or smaller

```
-webkit-transform: scale(2.0);
```



# Animating Page Elements

## CSS transforms

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# Animating Page Elements

## CSS transforms

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-webkit-transform: translate(-50px, 50px);
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- Make things bigger or smaller

```
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```

- Spin or rotate things

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



# Animating Page Elements

## CSS transforms

- Move things around

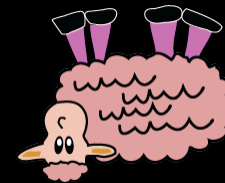
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-webkit-transform: translate(-50px, 50px);
```

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```
-webkit-transform: scale(2.0);
```

- Spin or rotate things

```
-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;  
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# Animating Page Elements

## CSS animations and transforms

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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"/>
```



# Multimedia

As easy as images

- HTML5 media elements

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



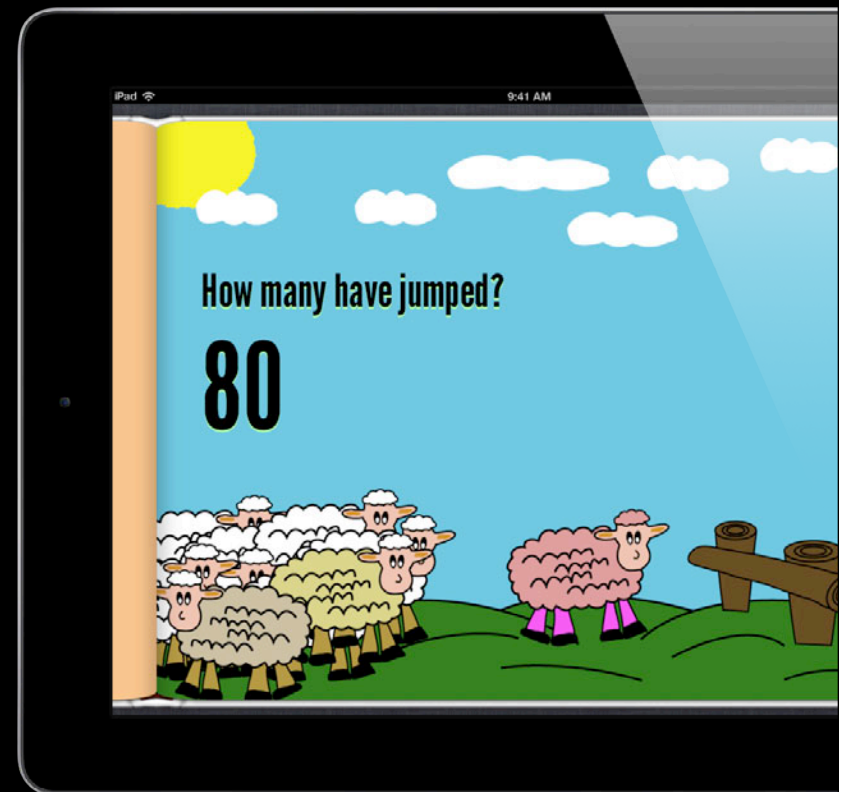
# What You Will Learn

## Beautiful content for digital books

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

# Counting Sheep

- Count each jump
- Book changes dynamically

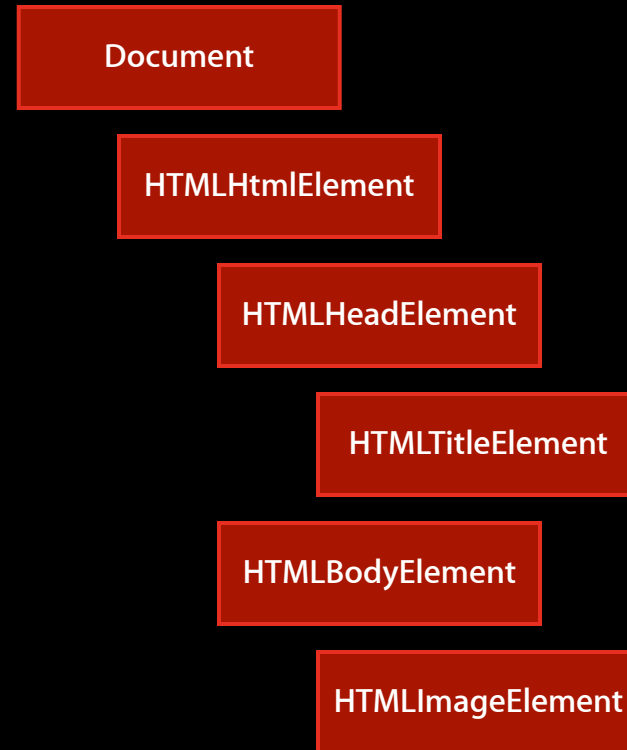


# Document Object Model

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

# Document Object Model

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



# 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

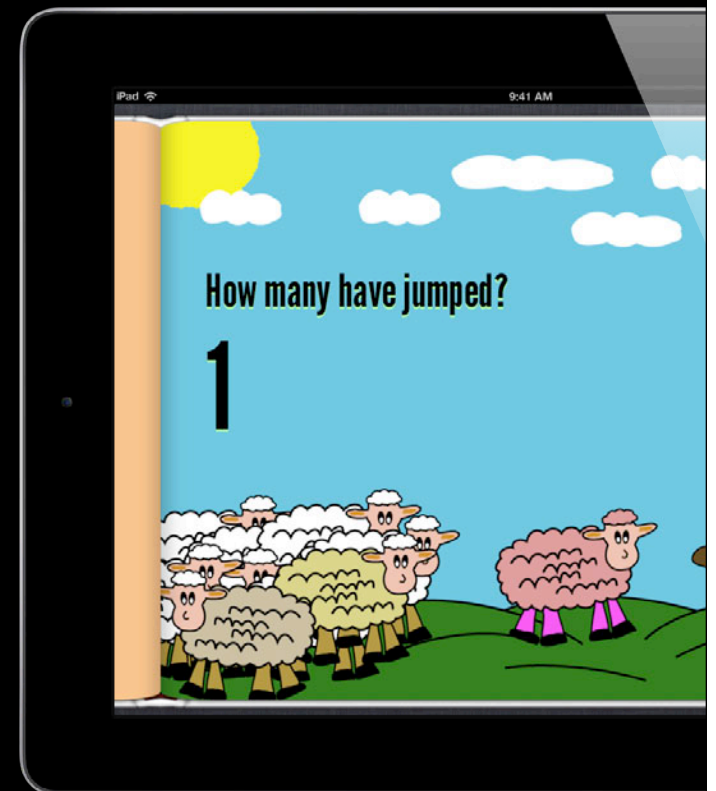
- Find the sheep

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

- Listen for animation iteration events

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

- Update the display in `updateCount()`



# 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

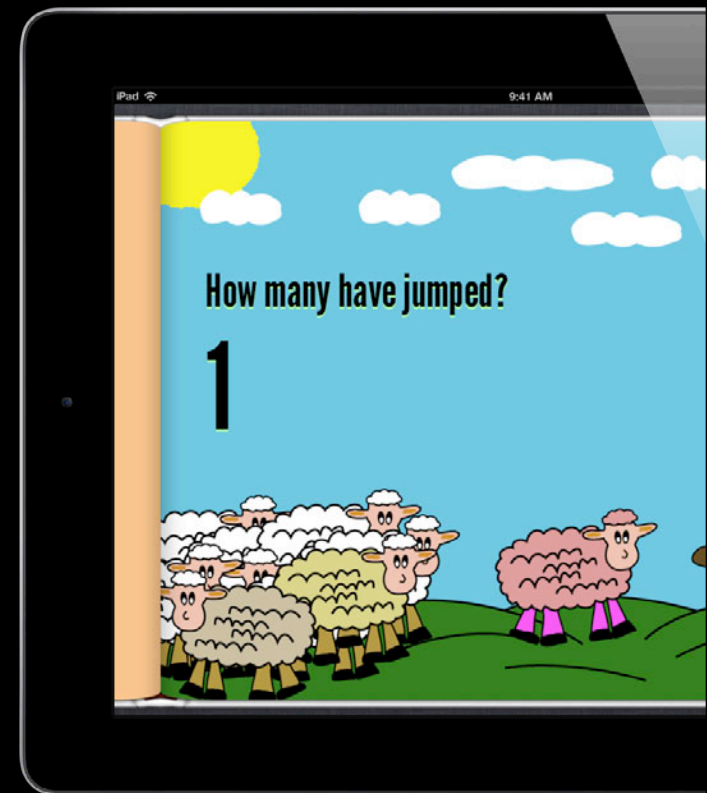
- Hide the counter with a class
- Add the class in HTML

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

- Hide it in CSS

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

- 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

 WWDC2012



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