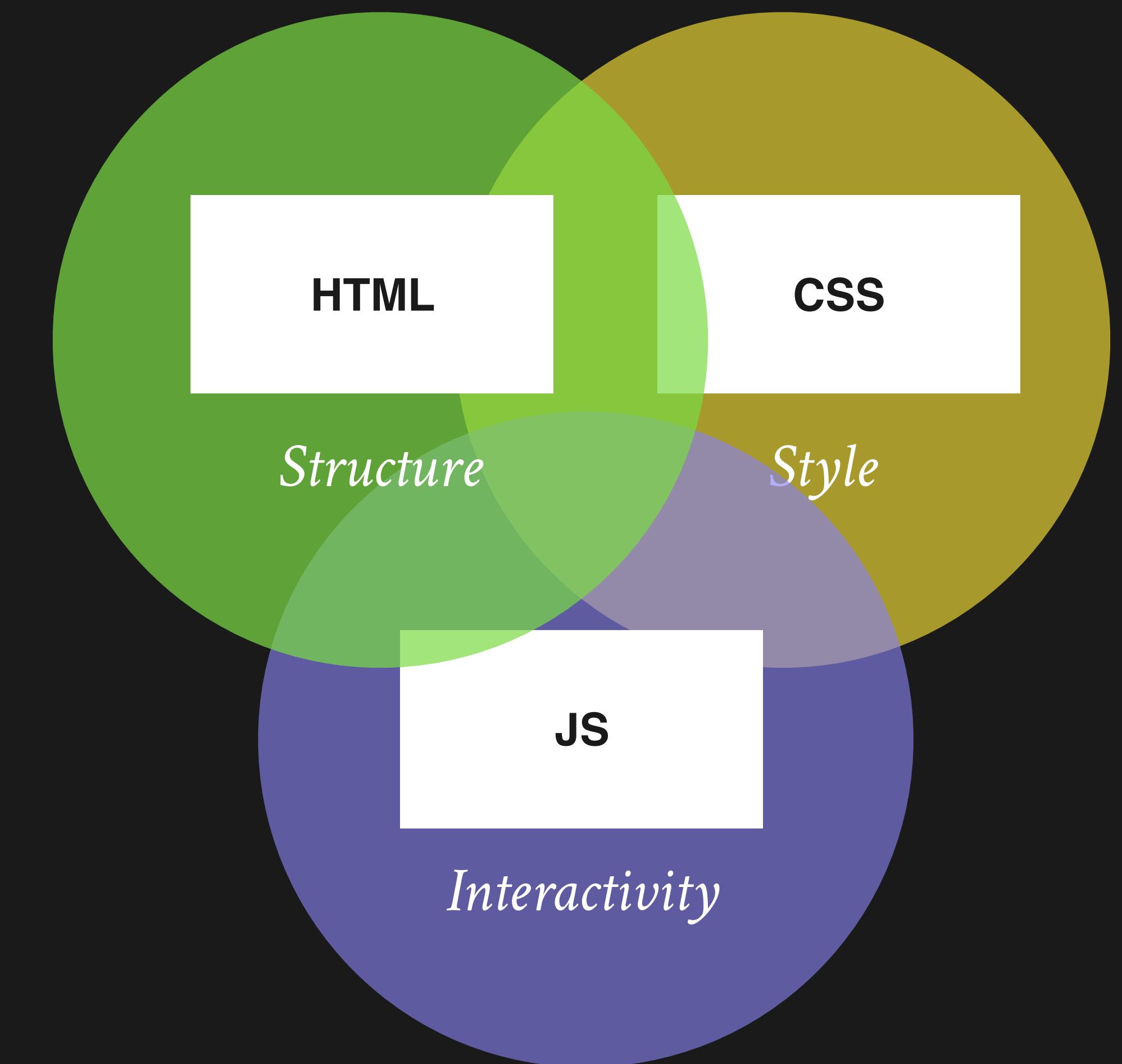




WEB TECHNOLOGIES PROGRAM

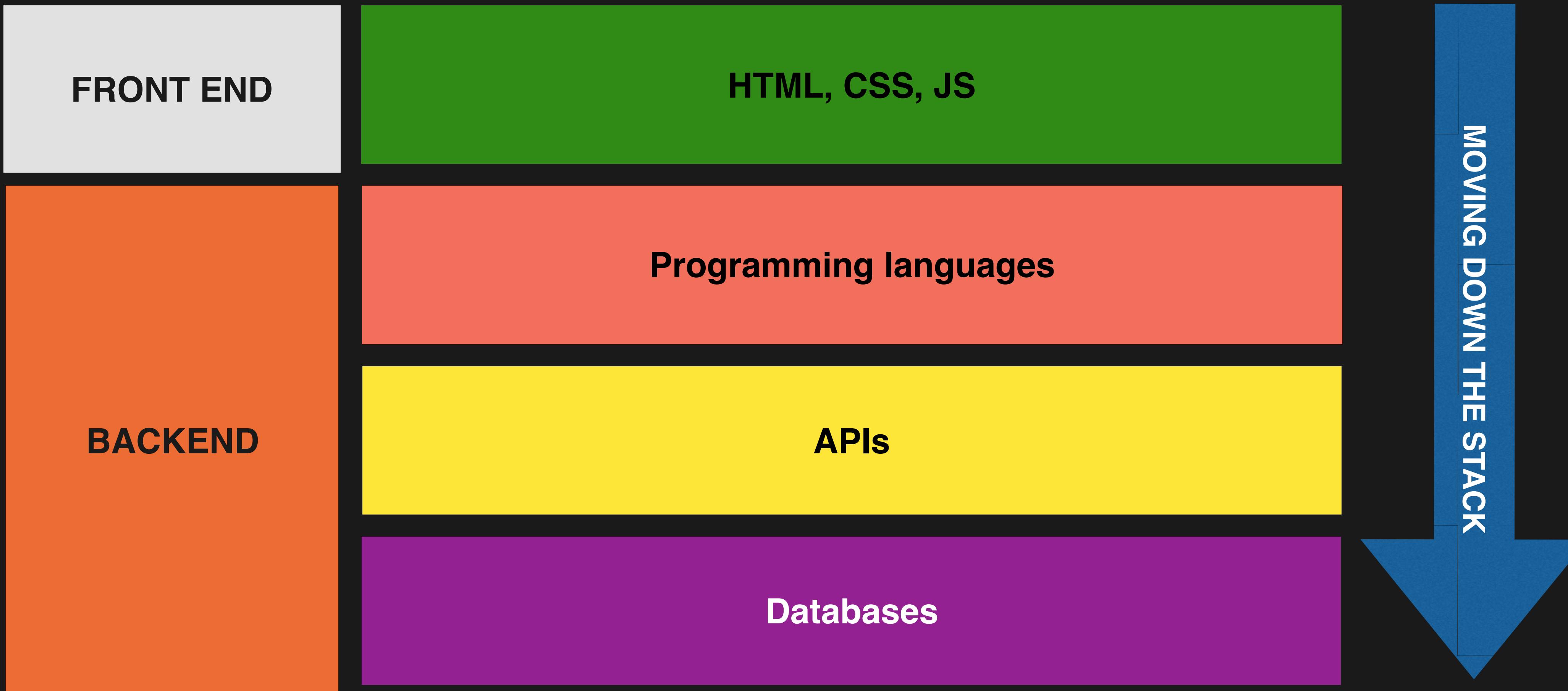
An introduction to CSS

How styles and structure work together



CSS in the full stack

Where does it fit into the picture?



C

Cascading

S

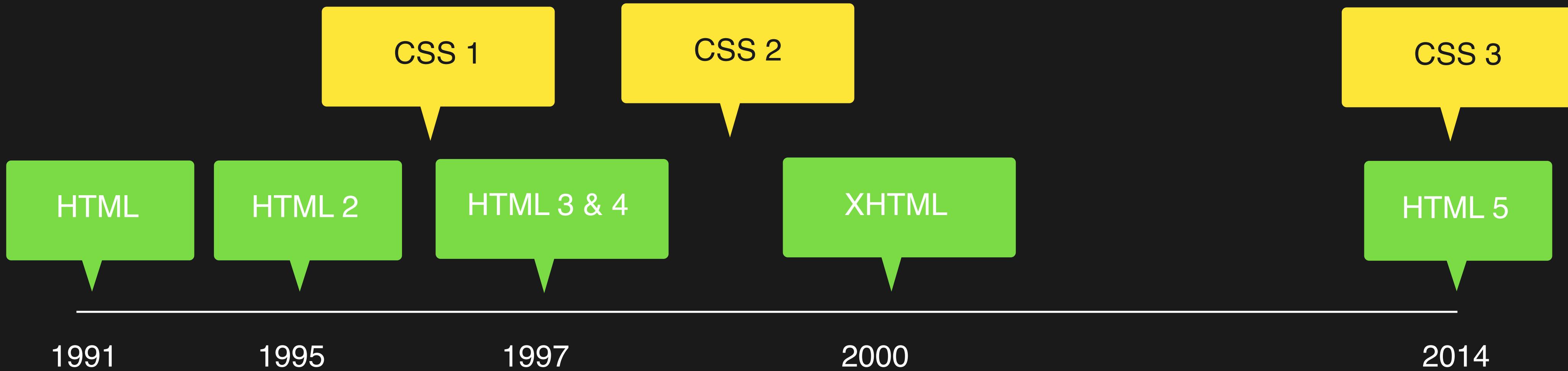
Style

S

Sheets



A brief history





Rounded corners!

A red shadow.

Gradient Background



What can CSS do?



HTML only

The screenshot shows a simple HTML-based registration form. At the top, there's a green logo consisting of a stylized butterfly and the word "freedom". Below the logo is a navigation menu with links to "Features", "Why Freedom?", "Gift", "Pricing", "Sign in", and "Register". The main heading is "Stop being distracted by your". A subtext below it says "Freedom is the world-famous Internet, social media, and app blocker. Freedom works on your iPhone, iPad, and Mac and Windows computers.". The registration form has two input fields: "Your name" containing "richard.holmes84@gmail.com" and a password field containing ".....". A validation message "Password must contain at least six characters" is displayed next to the password field. Below the form are buttons for "Be Productive Now", "Sign in here.", "Reset your password.", and "Register for Freedom".

HTML + CSS

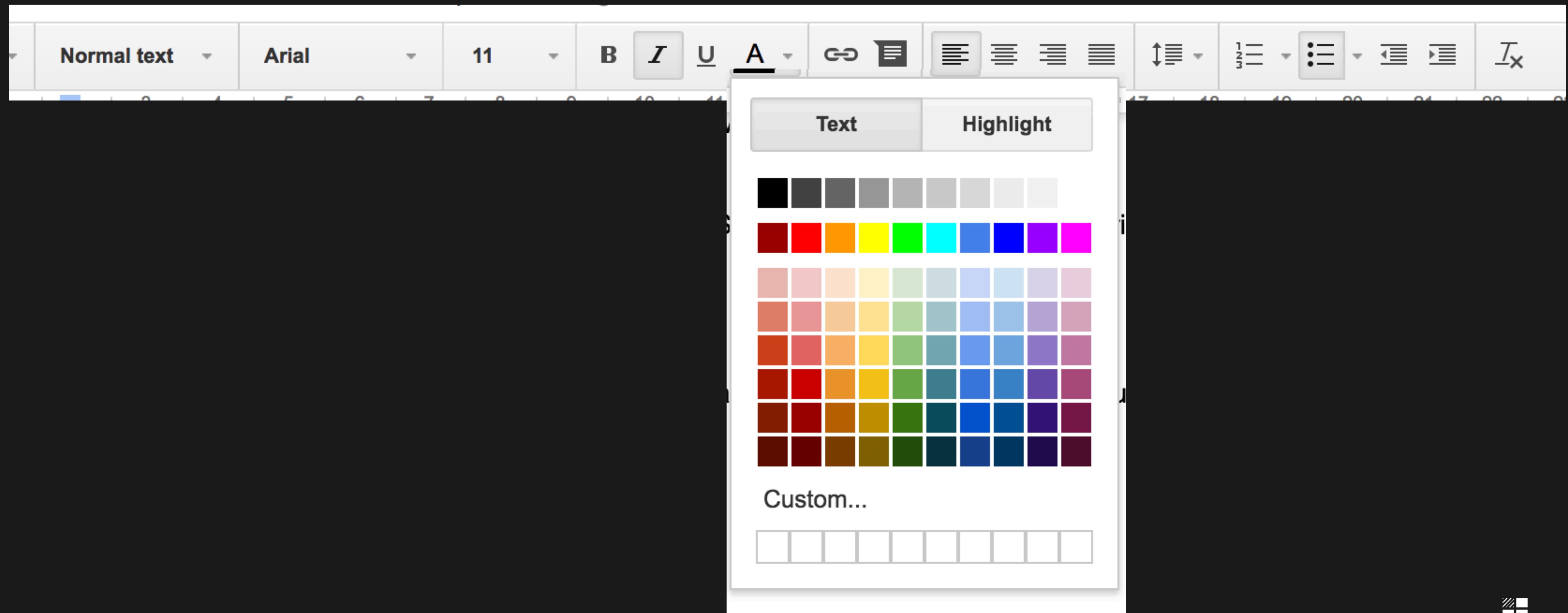
This screenshot shows the same website but with added CSS styling. The overall layout is cleaner and more modern. The top navigation bar includes the "freedom" logo, "Features", "Why Freedom?", "Gift", "Pricing", "Sign in", and a prominent green "Register" button. The main heading "Stop being distracted by your" is overlaid on a background image of a computer monitor displaying a green screen with the same text. Below the heading is a brief description: "Freedom is the world-famous Internet, social media, and app blocker. Freedom works on your iPhone, iPad, and Mac and Windows computers.". The registration form uses CSS to style the input fields and buttons. The "Your name" field contains "richard.holmes84@gmail.com", and the password field contains ".....". A validation message "Password must contain at least six characters" is shown above the password field. A large green button labeled "Be Productive Now" is centered below the form. At the bottom right, there are links for "Sign in here.", "Reset your password.", and a small logo.

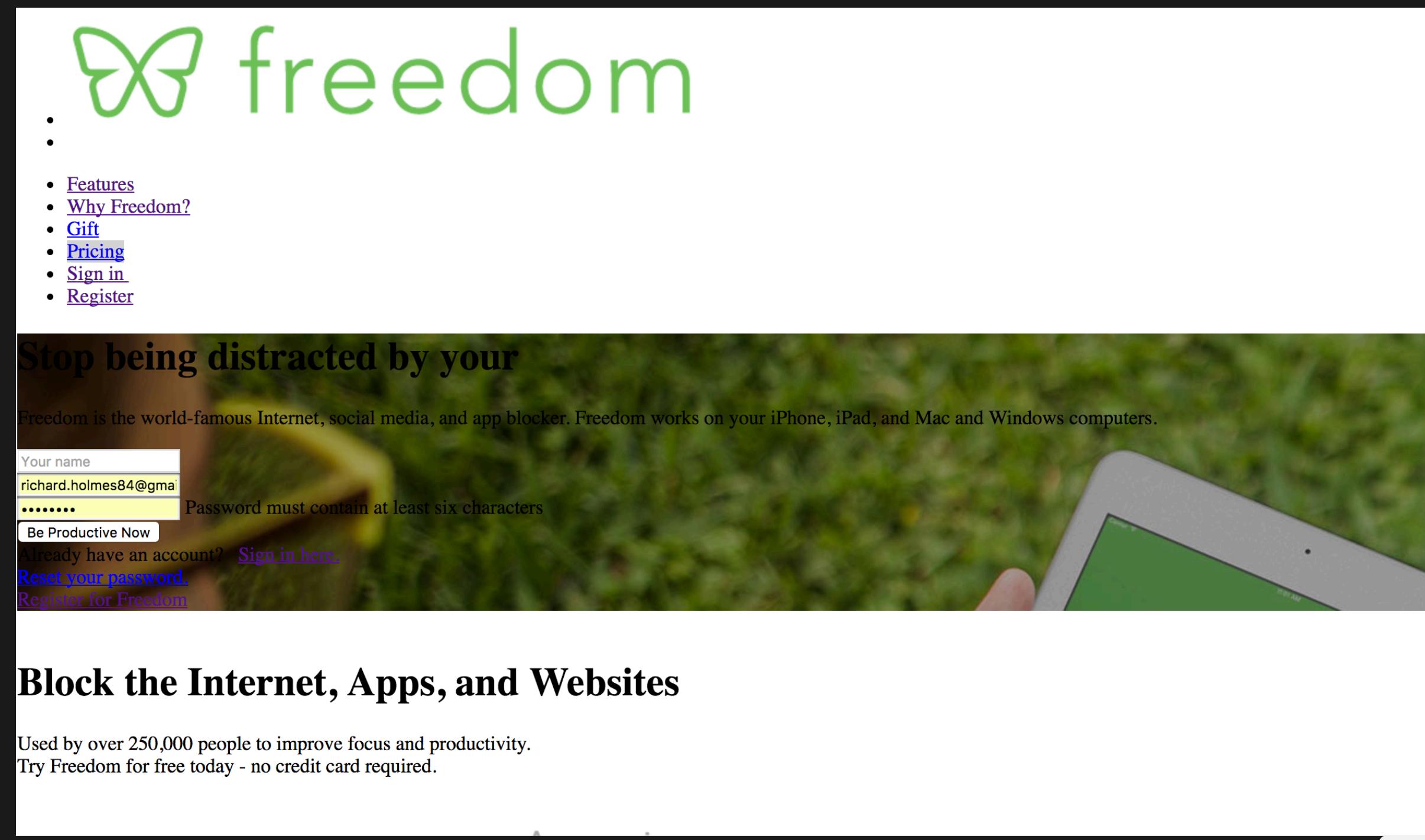
The 2 functions of CSS

Applying styles

**Positioning
elements**







CSS positioning

CSS background



Who uses CSS?



How is CSS applied?



The front end development process



How is CSS applied?

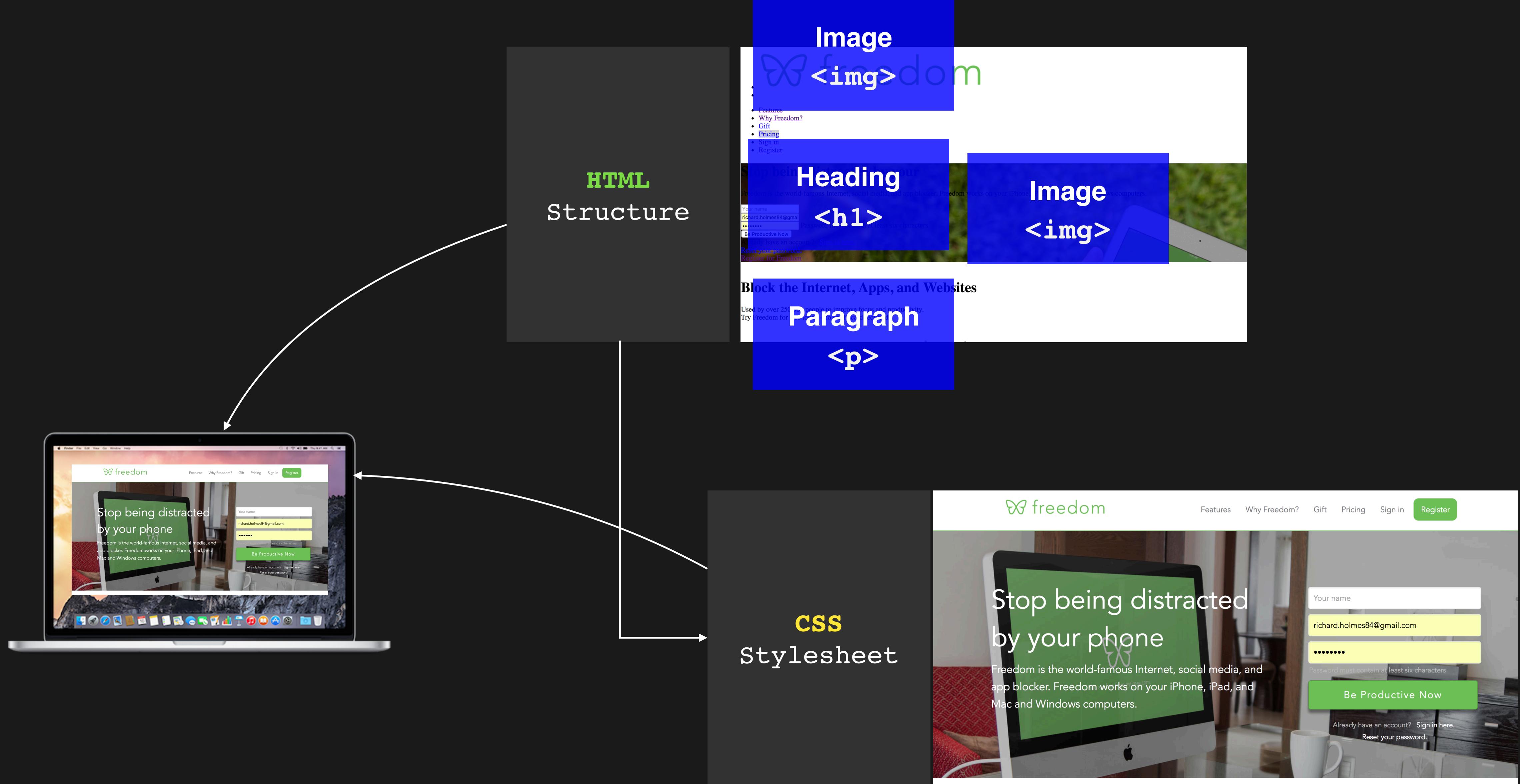
**CSS
Stylesheets**

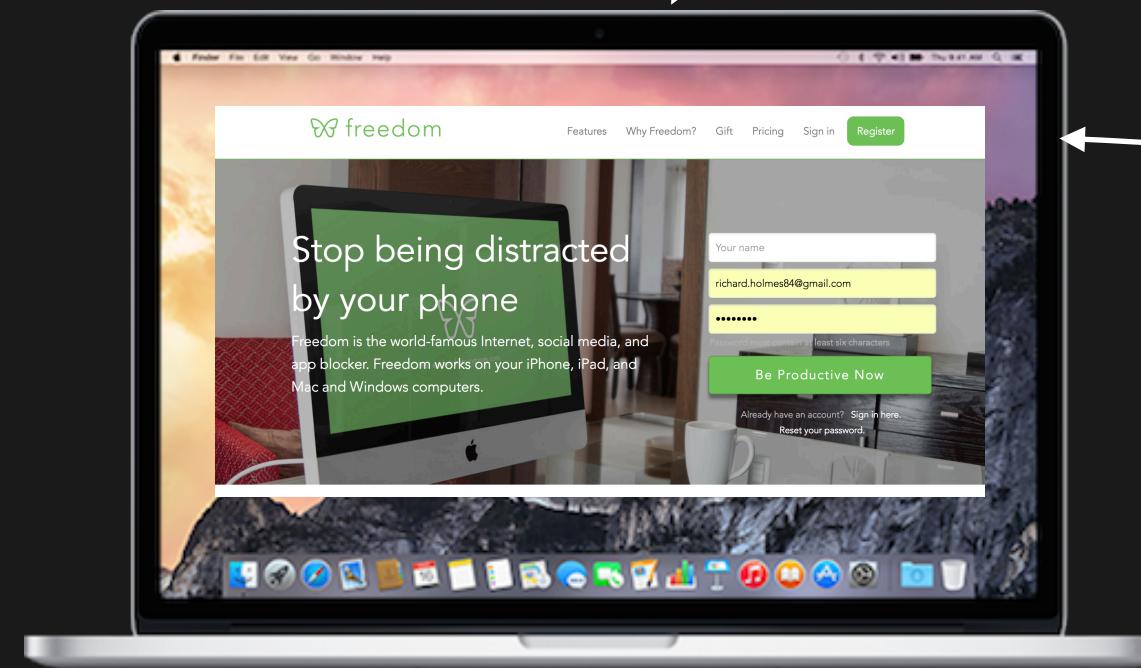
Inline CSS



CSS stylesheets







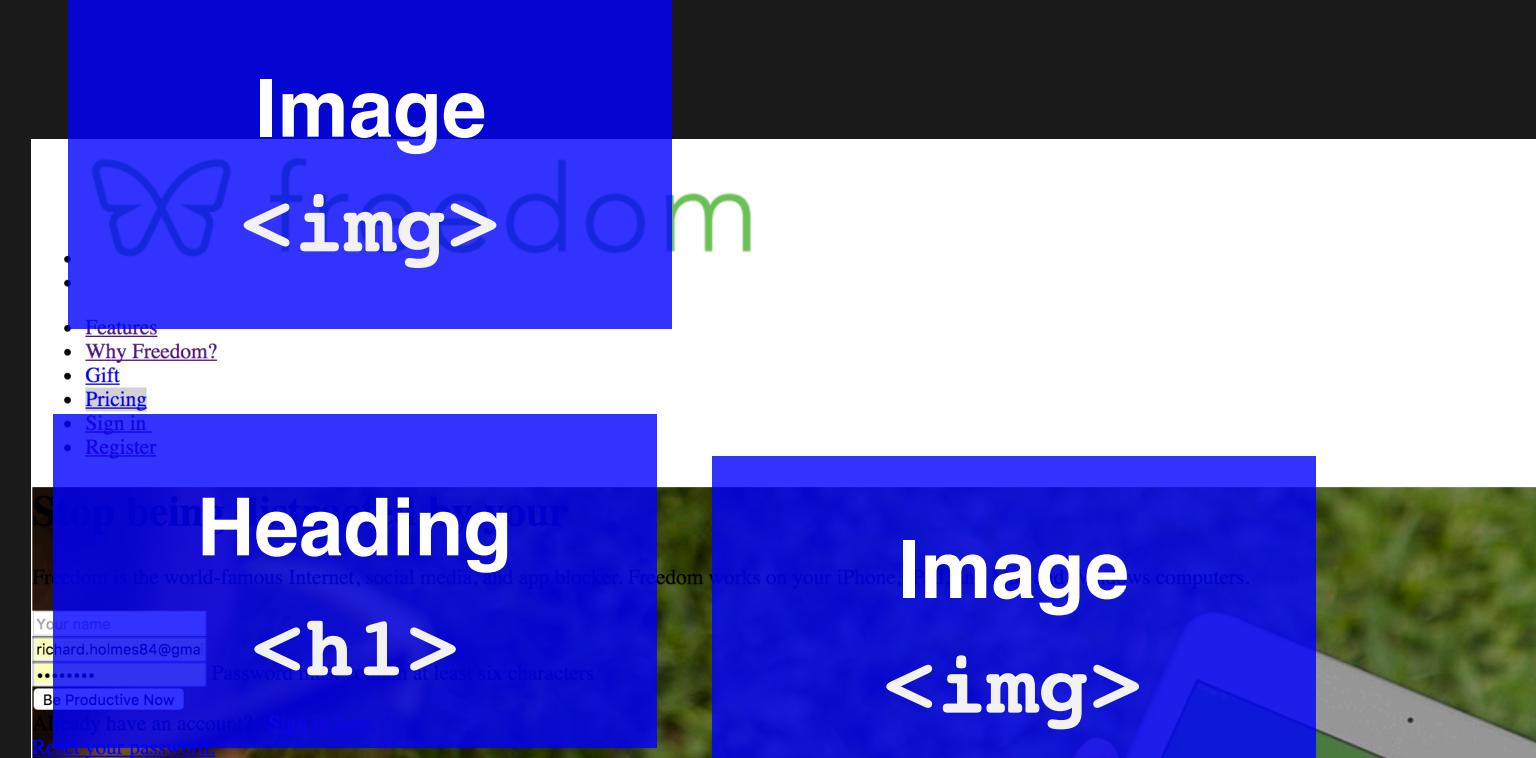
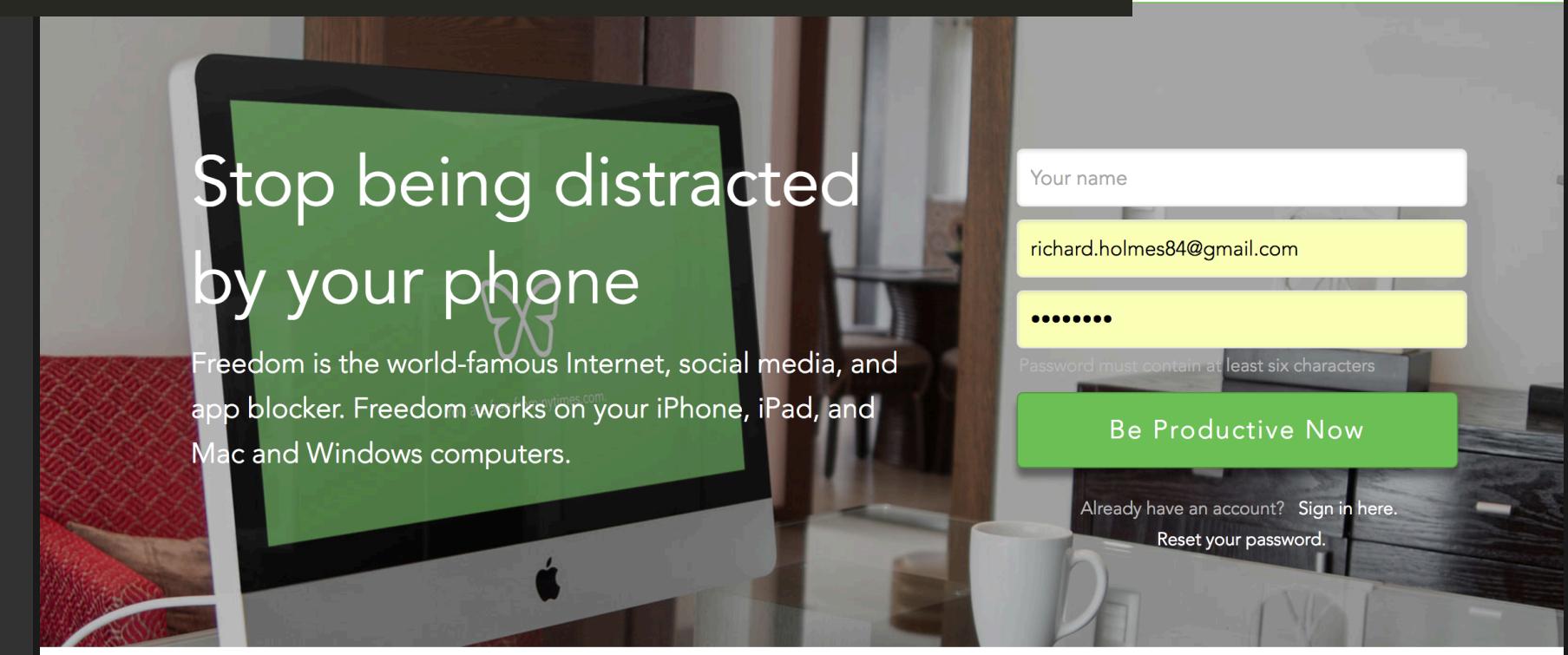
HTML Structure

```
<!DOCTYPE html> - <!-- appears once, before any HTML tags. It helps the browser to display content correctly. -->
<html>
<head>

<title>Title of website</title>
<!-- CSS styles are put in the header-->
<link rel="stylesheet" type="text/css" href="styles.css">
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>

</head>
<body>
<!-- the elements of the web page are put inside the body tags. -->
</body>
</html>
```

CSS Stylesheet



CSS stylesheet

```
/*--This is the finished stylesheet. This is how you add comments in CSS--*/
```

```
#passana-container h1 {  
    font-size: 48px;  
    font-weight: 400;  
}
```

Make the font size 36px

```
#passana-container h2 {  
    font-size: 36px;  
    font-weight: 400;  
}
```

```
.center {  
    text-align: center;  
}
```

```
h1, p, body {  
    font-family: 'Hind';  
}
```

```
.underline {  
    text-decoration: underline;  
}
```

```
p {  
    line-height: normal;  
}
```

```
/*-----Header section-----*/
```

```
.main-logo {  
    display: block;  
    margin: 0 auto;  
}
```

```
nav {  
    padding: 0 5% 0 5%;  
    margin-top: 3%;  
}
```

```
nav li {  
    display: inline;  
    list-style-type: none;  
    padding-right: 3%;  
    font-size: 14px;  
}
```

Center the text

Add space above the navigation

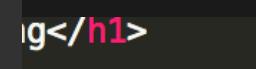


Advantages of stylesheets

1. Increased control
2. SEO benefits
3. Maintainability



HTML Structure

```
<h1 style="color:blue;ma

```

CSS Stylesheet

```
/*--This is the finished styles
#passana-container h1 {
  font-size: 48px;
  font-weight: 400;
}

#passana-container h2 {
  font-size: 36px;
  font-weight: 400;
}

.center {
  text-align: center;
}

h1, p, body {
  font-family: 'Hind';
}

.underline {
  text-decoration: underline;
}

p {
  line-height: normal;
}

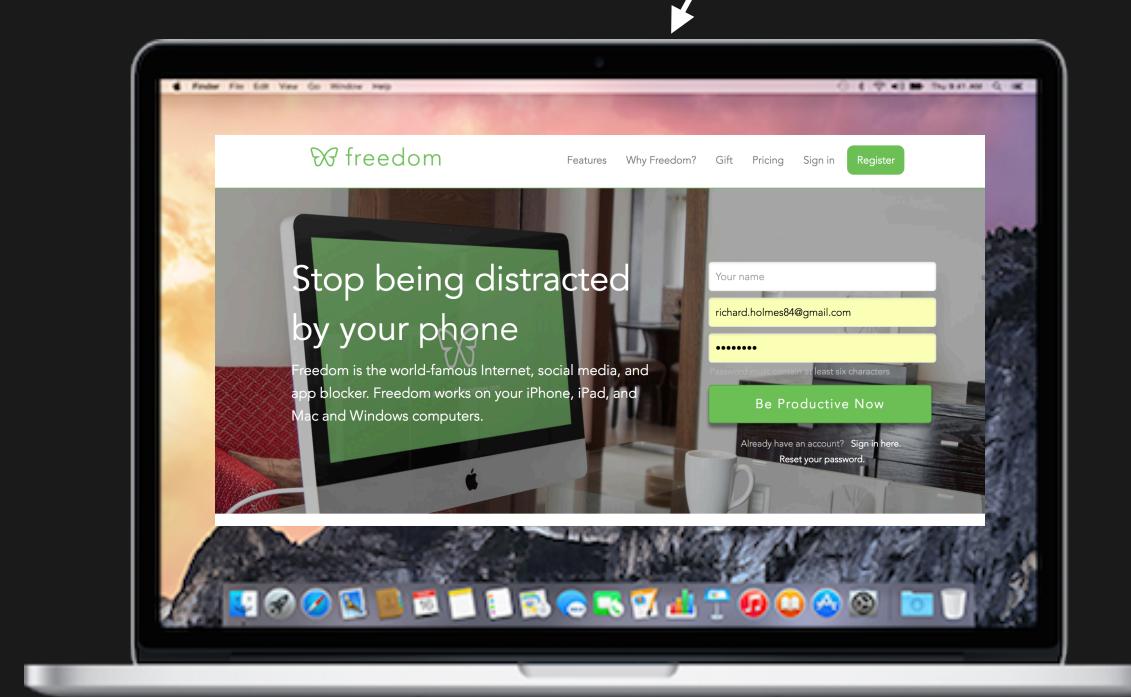
/*-----Header section-----*/
.main-logo {
  display: block;
  margin: 0 auto;
}

nav {
  padding: 0 5% 0 5%;
  margin-top: 3%;
}

nav li {
  display: inline;
  list-style-type: none;
  padding-right: 3%;
  font-size: 14px;
```

Inline CSS



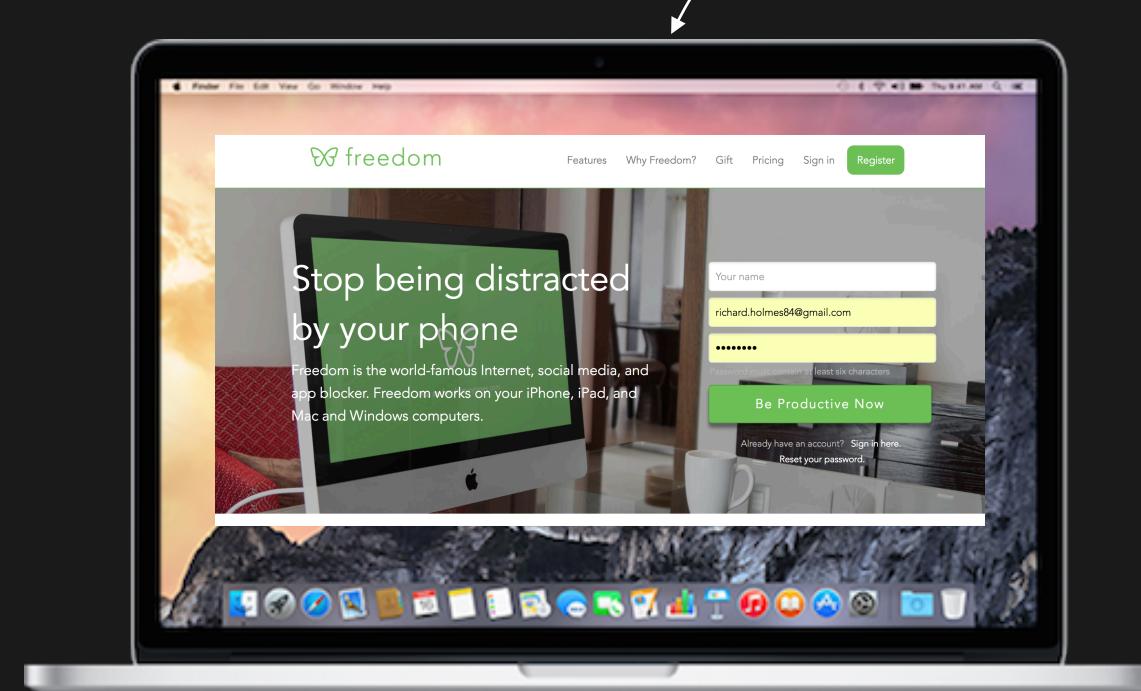


The Freedom website's registration form is shown in detail. It includes a logo with a butterfly icon and the word "freedom". A navigation menu with links to "Features", "Why Freedom?", "Gift", "Pricing", "Sign in", and "Register". The main content area has a heading "Stop being distracted by your" followed by a sub-headline "Freedom is the world-famous Internet, social media, and app blocker. Freedom works on your iPhone, iPad, and Mac and Windows computers." A registration form with fields for "Your name" (containing "richard.holmes84@gmail.com") and "Password" (containing "*****"). A button labeled "Be Productive Now". Below the form, links for "Sign in here", "Reset your password", and "Register for Freedom". A background image shows a hand holding an iPad displaying the website.

HTML Structure

CSS Stylesheet





```
<h1 style="color:blue;margin-left:30px;">This is a heading</h1>
<h2>What does HTML do? </h2>
<h3>Structure - </h3>
<p>HTML enables you to describe the structure of a document so it can be interpreted and displayed correctly by the browser and styled CSS. It tells the browser what the page consists of. It tells the browser 'this is an image, this is a table, this is a paragraph and so on'. These are known as elements.</p>
<ul>
<li>Elements - the 'things' on a page are known as elements. </li>
<li>Linking - one of the most important elements in HTML is the anchor tag - this allows documents to be linked together. This was one of the primary reasons for HTML when it was introduced; linking documents together to create a 'network' of documents that scientists could use</li>
</ul>
<h3>Who uses HTML?</h3>
<ul>
<li>Your front end developers work with HTML, primarily to build the structure of web pages. </li>
<li>Backend programmers will sometimes use it but </li>
<li>Marketing folks may use HTML for writing blog posts </li>
<li>Example - tools like WordPress have a 'Visual' editor or a 'Text' editor - https://www.evernote.com/l/AHVsuBQpKP1Hu6lo5x0uErrXWxkr1mFbq-w</li>
<a href="http://www.link.com">Click</a>
</ul>

```



Why not to use inline CSS

1. Separation of structure and styles
2. *Maintenance*
3. However...



Where inline may be acceptable

THE VERGE [TWEET](#) [SHARE](#) I saw nothing revolutionary about 4K on the Xperia Z5. Sony has a partnership with Amazon for 4K HDR content, and the HDR element truly does wonderful things for colour reproduction. In one of Sony's demos against the Z5 Premium, the XZ showed off warmer, more natural yellows and a broadly more realistic and inviting reproduction of the streets of Lisbon. A Portuguese Sony rep was on hand to confirm, effusively, that the XZ Premium display was more faithful to the real Lisbon.

Sony Xperia XZ Premium

Sort by Date ▾

- [Milan Fashion Week](#) 06:17
How Milan's fashion week is becoming more international. The city's designers are looking to the world for inspiration.
- [Oscars 2017: how to watch the Academy Awards online](#) 06:17
A comprehensive guide to the 89th Academy Awards.
- [Nokia's 3310 returns to life as a modern classic](#) 06:17
The original feature phone is back, and it's better than ever.
- [AT&T is making its unlimited plan way more competitive](#) 06:17
The carrier is offering a new plan that's more competitive with others.

TODAY'S MUST READ

Milan Fights for Emerging Labels

BY OSMAN AHMED

Milan is revamping its fashion week line-up with a slew of young labels — many from Asia. But can it really rival London as a



Quick mockups / demos

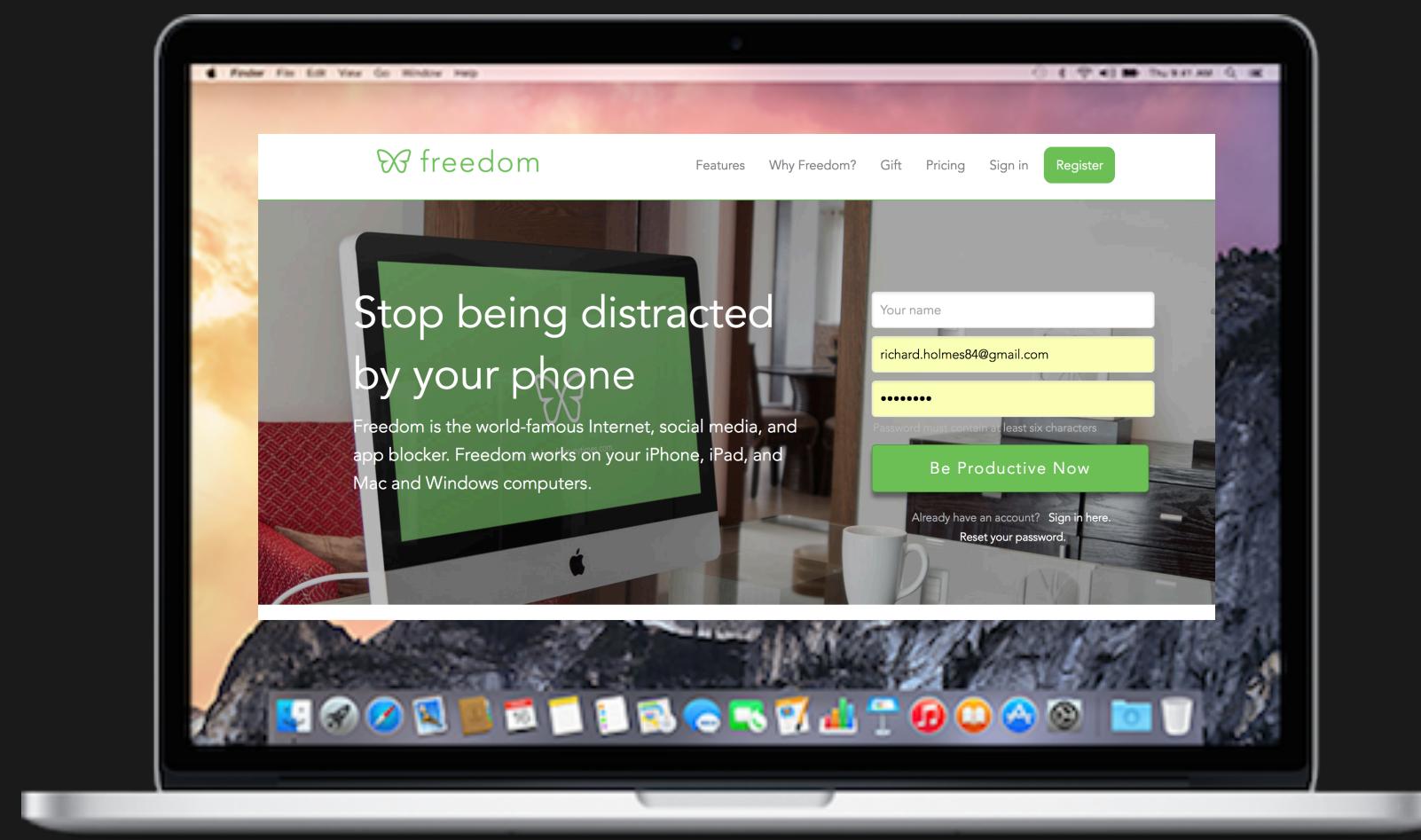


Emails

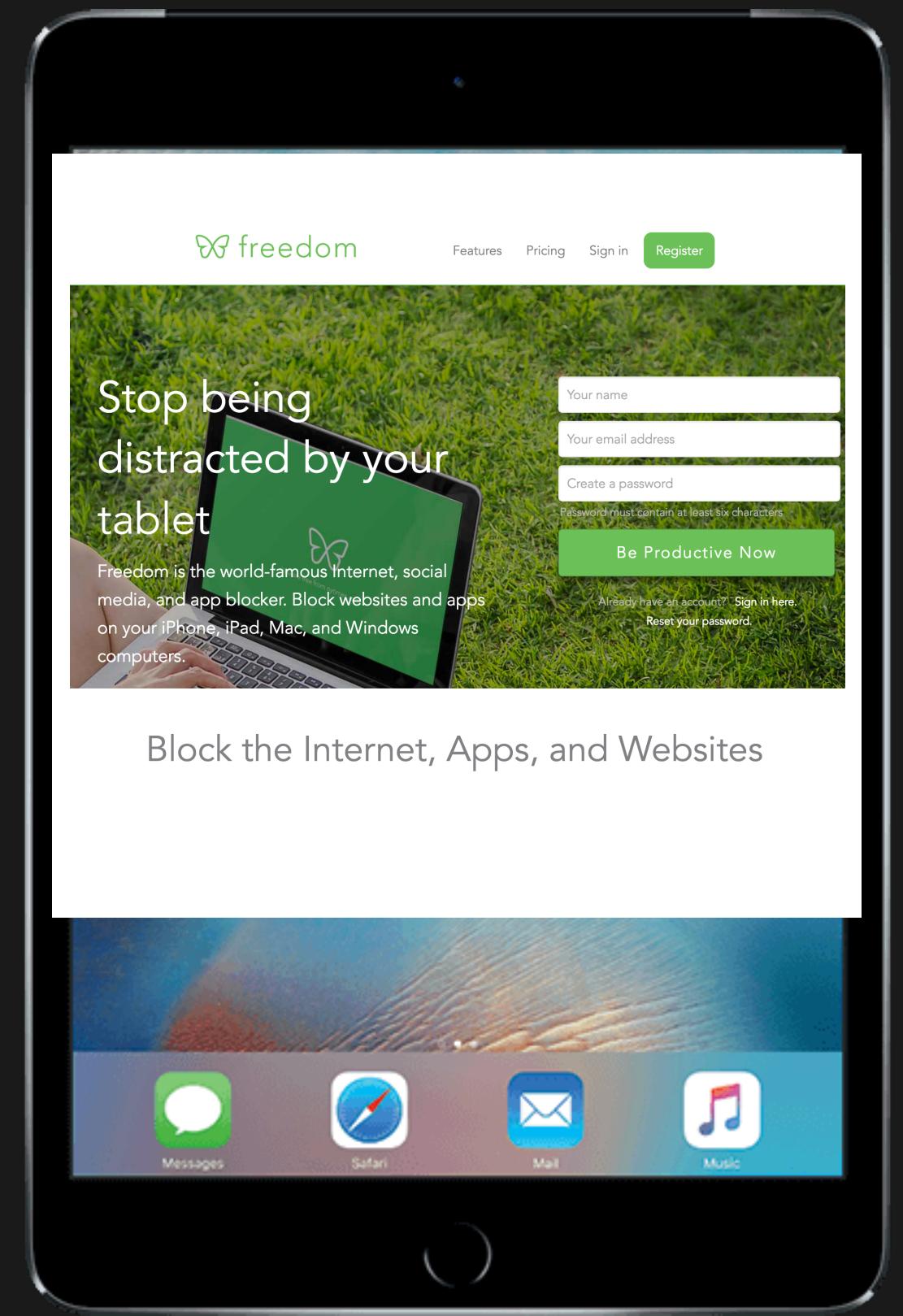


CSS & mobile

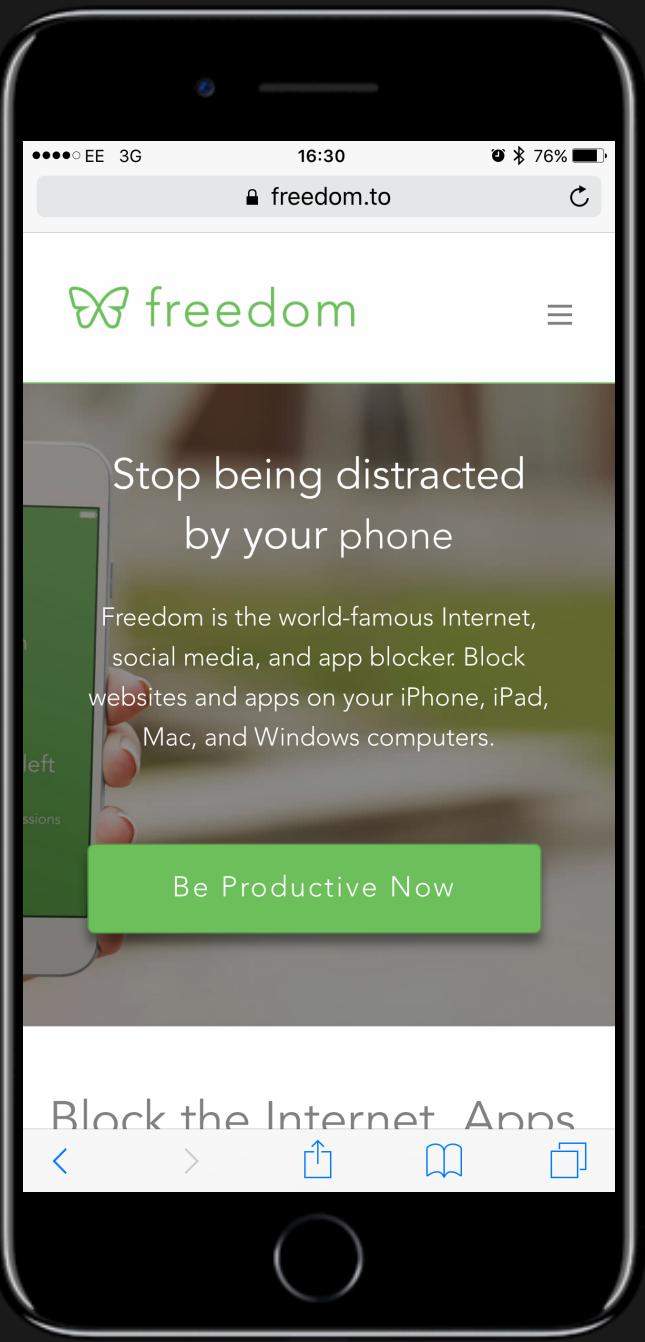




Desktop

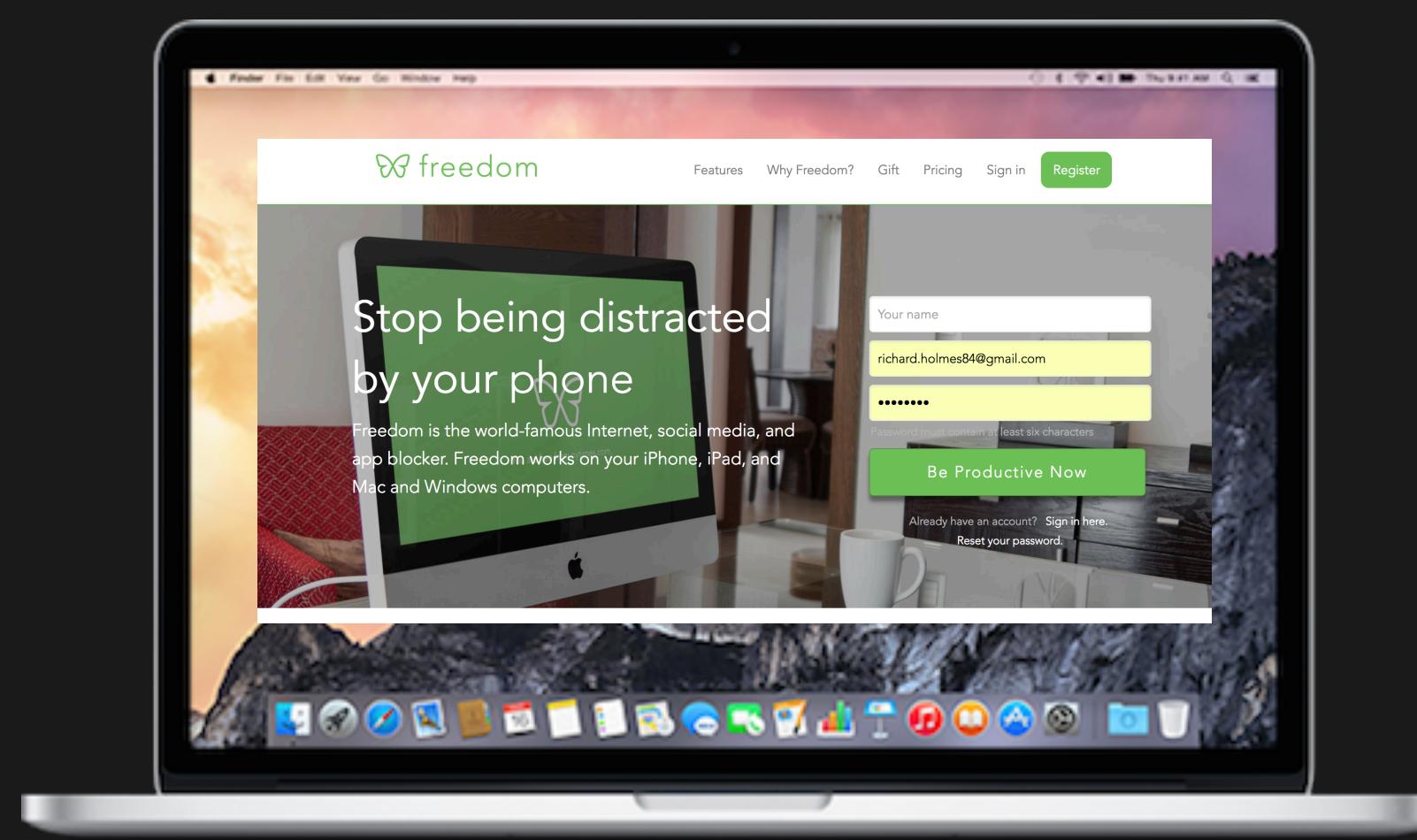


Tablet



Mobile

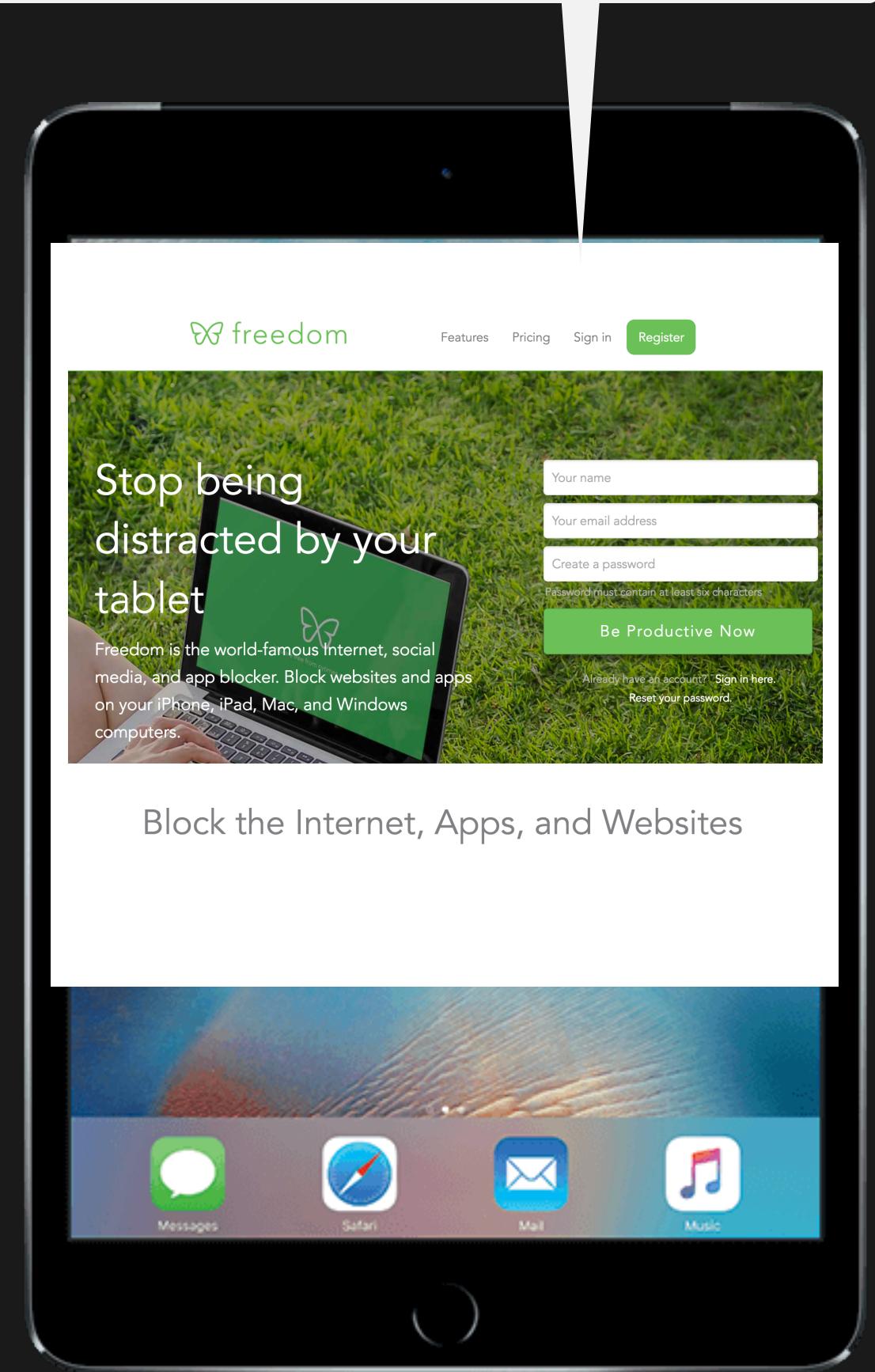




Desktop

If device is desktop,
apply styles 1

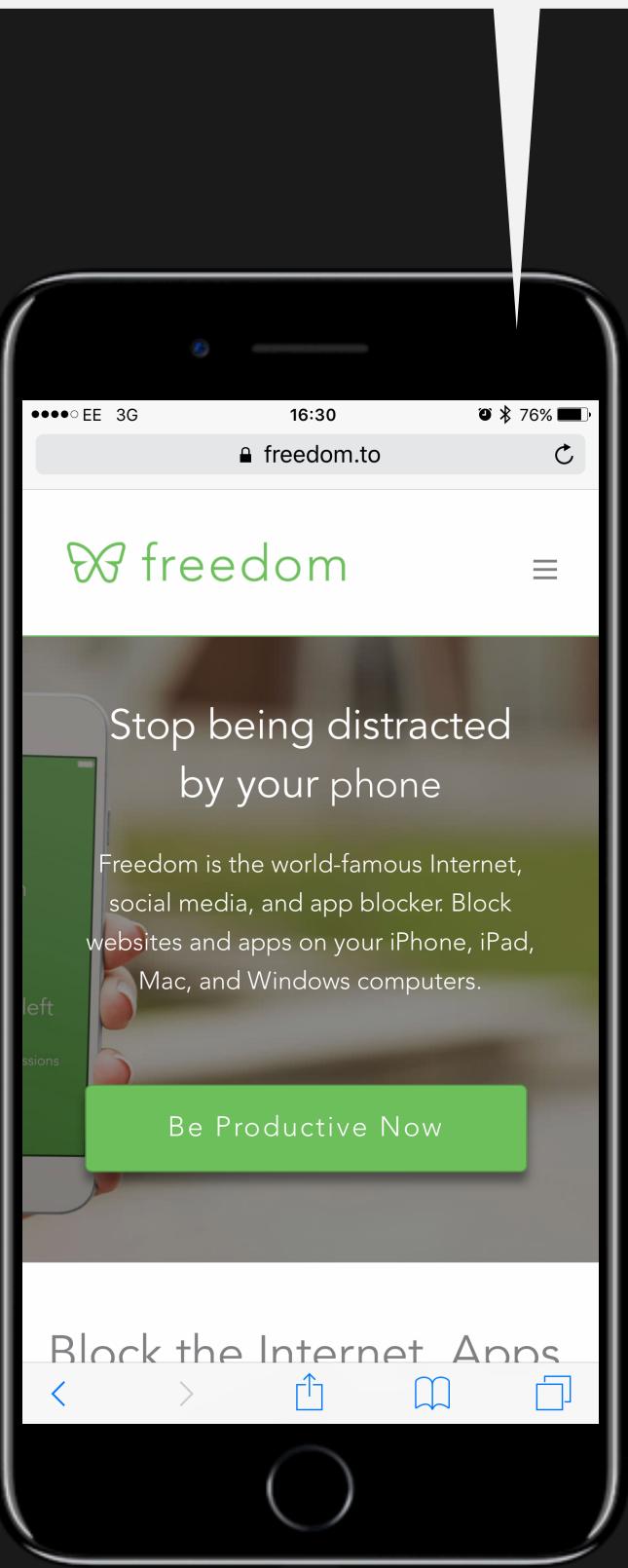
Remove navigation elements



Tablet

If device is tablet,
apply styles 2

Use navigation hamburger

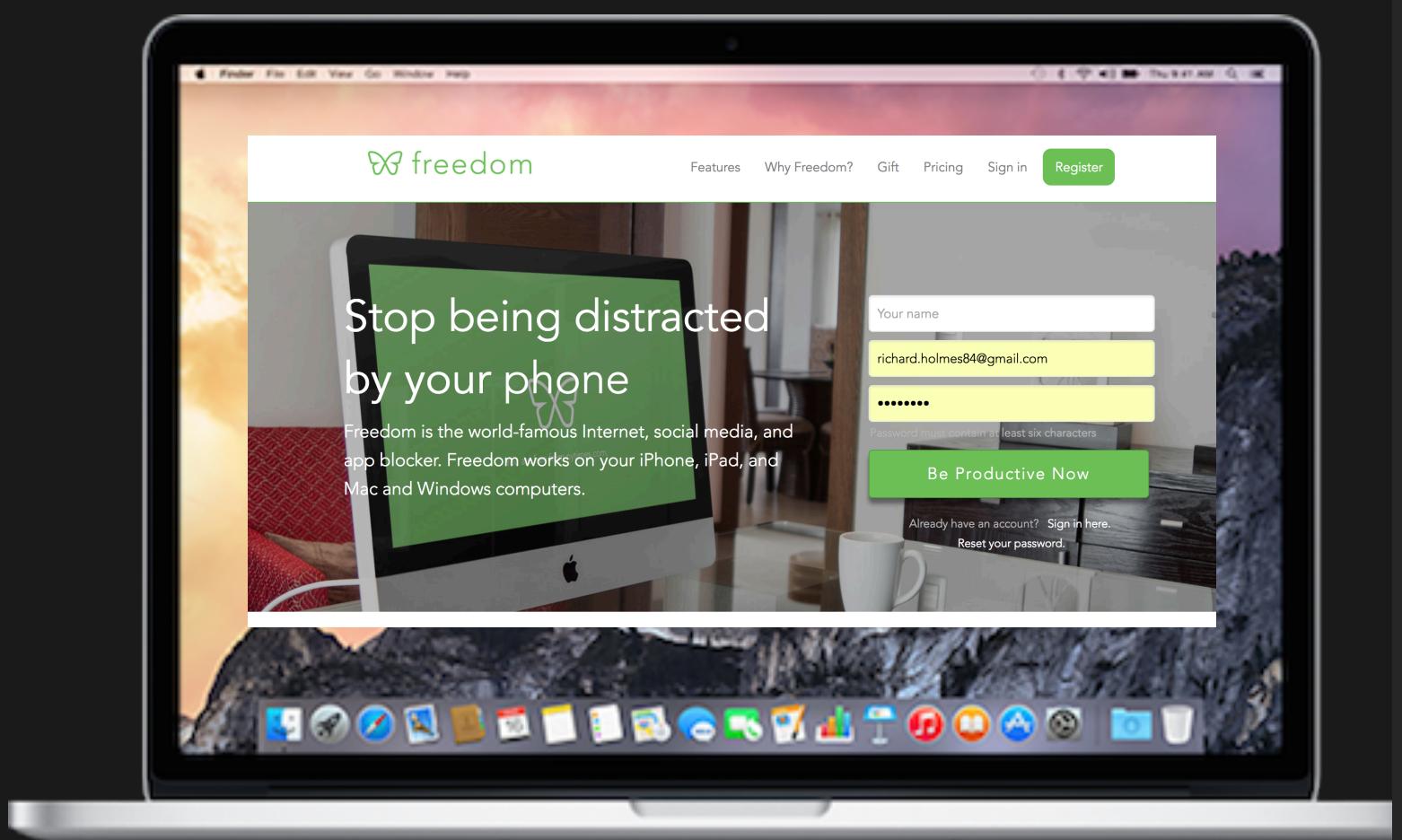


Mobile

If device is phone,
apply styles 3



Examples of media queries



Desktop

```
/* ----- iPad 3 and 4 ----- */  
/* Portrait and Landscape */  
@media only screen  
and (min-device-width: 768px)  
and (max-device-width: 1024px)  
and (-webkit-min-device-pixel-ratio: 2) {  
  
}  
  
/* Portrait */  
@media only screen  
and (min-device-width: 768px)  
and (max-device-width: 1024px)  
and (orientation: portrait)  
and (-webkit-min-device-pixel-ratio: 2) {  
  
}  
  
/* Landscape */  
@media only screen  
and (min-device-width: 768px)  
and (max-device-width: 1024px)  
and (orientation: landscape)  
and (-webkit-min-device-pixel-ratio: 2) {  
  
}
```

Tablet

```
/* ----- iPhone 6 ----- */  
/* Portrait and Landscape */  
@media only screen  
and (min-device-width: 375px)  
and (max-device-width: 667px)  
and (-webkit-min-device-pixel-ratio: 2) {  
  
}  
  
/* Portrait */  
@media only screen  
and (min-device-width: 375px)  
and (max-device-width: 667px)  
and (-webkit-min-device-pixel-ratio: 2)  
and (orientation: portrait) {  
  
}  
  
/* Landscape */  
@media only screen  
and (min-device-width: 375px)  
and (max-device-width: 667px)  
and (-webkit-min-device-pixel-ratio: 2)  
and (orientation: landscape) {  
  
}
```

Mobile



CSS syntax



CSS syntax

```
h1 {  
  color: red;  
}
```

1. Selector

What are you selecting? What element do you want to apply CSS to e.g. H1.

2. Property

*What's the property?
What are you trying to change?
E.g. 'color'*

3. Value

*What's the value?
Properties have specific values that are applicable e.g. red.*



1. Selectors



Selectors

Selector	Example
Element	<pre>h1 { property: value }</pre>
ID	<pre>#box { property: value }</pre>
Class	<pre>.center { text-align: center; }</pre>



Live example

Using element selectors to make elements red



Divs & CSS

The screenshot shows the header of the Scientific American website with a blue navigation bar. The bar includes a 'SUBSCRIBE' button, the 'SCIENTIFIC AMERICAN' logo, language and cart options ('English', 'Cart 0', 'Sign In | Register'), and a search icon. Below the bar, a menu lists categories: THE SCIENCES, MIND, HEALTH, TECH, SUSTAINABILITY, EDUCATION, VIDEO, PODCASTS, BLOGS, and STORE. A large article title 'Will Democracy Survive Big Data and Artificial Intelligence?' is displayed in a dark blue box, with the subtitle 'We are in the middle of a technological upheaval that will transform the way society is organized. We must make the right decisions now' underneath it. The article is categorized under 'POLICY & ETHICS'.

SUBSCRIBE

SCIENTIFIC
AMERICAN

English Cart 0 Sign In | Register

THE SCIENCES MIND HEALTH TECH SUSTAINABILITY EDUCATION VIDEO PODCASTS BLOGS STORE Q

POLICY & ETHICS

Will Democracy Survive Big Data and Artificial Intelligence?

We are in the middle of a technological upheaval that will transform the way society is organized. We must make the right decisions now

By Dirk Helbing, Bruno S. Frey, Gerd Gigerenzer, Ernst Hafen, Michael Hagner, Yvonne Hofstetter, Jeroen van den Hoven, Roberto V. Zicari, Andrej Zwitter on February 25, 2017



Divs & CSS

The screenshot shows the top navigation bar of the Scientific American website. It features a blue header with white text. On the left is a 'SUBSCRIBE' button. In the center is the 'SCIENTIFIC AMERICAN' logo. On the right are links for 'English', 'Cart' (with a count of 0), 'Sign In', 'Register', and a search icon. Below the header, there's a horizontal menu with categories: THE SCIENCES, MIND, HEALTH, TECH, SUSTAINABILITY, EDUCATION, VIDEO, PODCASTS, BLOGS, and STORE. A search icon is also present.

The screenshot displays a scientific article from Scientific American. The title 'Will Democracy Survive Big Data and Artificial Intelligence?' is centered in large, bold, dark blue letters. Above the title is a category 'POLICY & ETHICS'. Below the title is a subtitle: 'We are in the middle of a technological upheaval that will transform the way society is organized.' At the end of the subtitle is a call-to-action: '[Take part in the discussion! Pensions now](#)'. The background of the article section is a dark blue gradient.

By Dirk Helbing, Bruno S. Frey, Gerd Gigerenzer, Ernst Hafen, Michael Hagner, Yvonne Hofstetter, Jeroen van den Hoven, Roberto V. Zicari, Andrej Zwitter on February 25, 2017

The screenshot shows a social media sharing interface. On the left, there's a box with icons for Facebook, Twitter, LinkedIn, and Print. To its right is a large image of Earth from space. On the far right is a white box containing the 'pentaho' logo and a small video player interface with play and stop buttons.

ID selectors

```
<div id =“box”>
```

HTML

Stylesheet

#box

CSS stylesheet



Class selectors

For re-usable styles



Class selectors

```
<div class =“center”>
```

```
<h2 class =“center  
underline blue”>
```

HTML

Stylesheet

```
.center {  
text-align: center;  
}
```

```
.underline {  
text-decoration: underline;  
}
```

```
.blue {  
color: blue;  
}
```

CSS stylesheet



Live examples

Divs & CSS working together



2. Property



CSS syntax



What are you selecting? What element do you want to apply CSS to e.g. H1.

2. Property

*What's the property?
What are you trying to change?
E.g. 'color'*

3. Value
*What's the value?
Properties have specific values that are applicable e.g. red.*



CSS properties

What's useful to learn?

Font-family (*chooses the font*)

Font-size (*chooses the font size*)

Text-align (*chooses text orientation*)

Background-color (*sets the background color*)



3. Value



CSS syntax



What are you selecting? What element do you want to apply CSS to e.g. H1.

2. Property

*What's the property?
What are you trying to change?
E.g. 'color'*

3. Value

*What's the value?
Properties have specific values that are applicable e.g. red.*



Resources

Property	Description	Values	Example
<code>color</code>	The color of the element	#RRGGBB (Red, Green, Blue hex values)	<pre>h1 { color: red; } p { text-align: center; }</pre>
<code>text-align</code>	The alignment of an element, usually text	left right center justify	<pre>p { text-decoration: underline; }</pre>
<code>text-decoration</code>	Decorates the text with a variety of funky decorations. Most common is underline.	none underline overline line-through blink inherit	<pre>h2 { text-transform: uppercase; } p { line-height: 1%; }</pre>
<code>text-transform</code>	Transforms text - often into uppercase.	none capitalize uppercase lowercase	<pre>p { letter-spacing: 2px; }</pre>
<code>line-height</code>	The height between lines in text	px, %	<pre>p { font-family: Arial, Helvetica, Sans Serif; }</pre>
<code>letter-spacing</code>	Defines the space between letters in text	normal or px value	<pre>p { font-size: 12px; }</pre>
<code>font-family</code>	Defines the font family for text	font or font-family [, font or font-family ...]	<pre>p { font-weight: normal; }</pre>
<code>font-size</code>	Defines the size of a font for text	px or em value	

CSS cheat sheet



Live examples

CSS properties and values

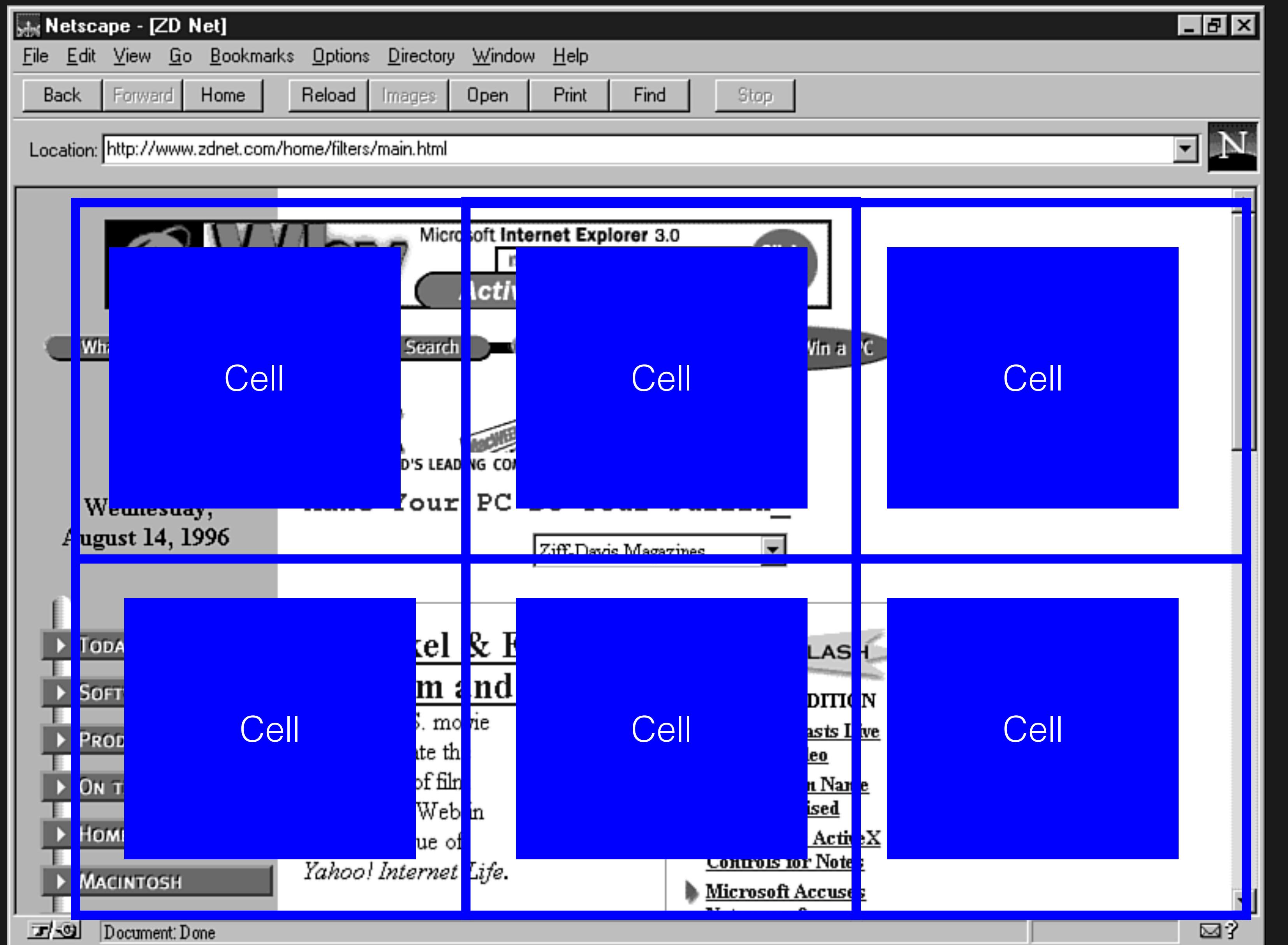


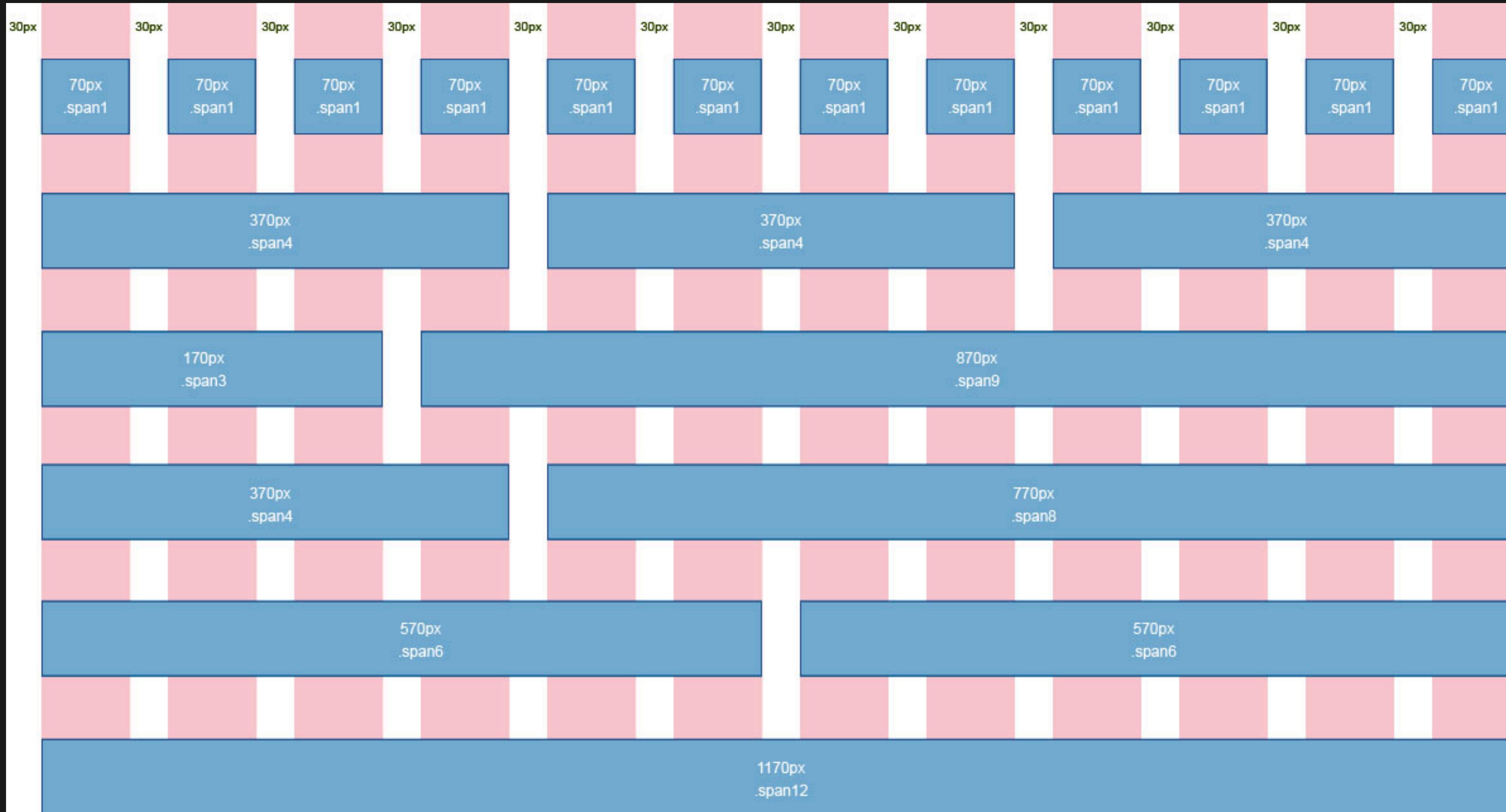
The 2 functions of CSS

Applying styles

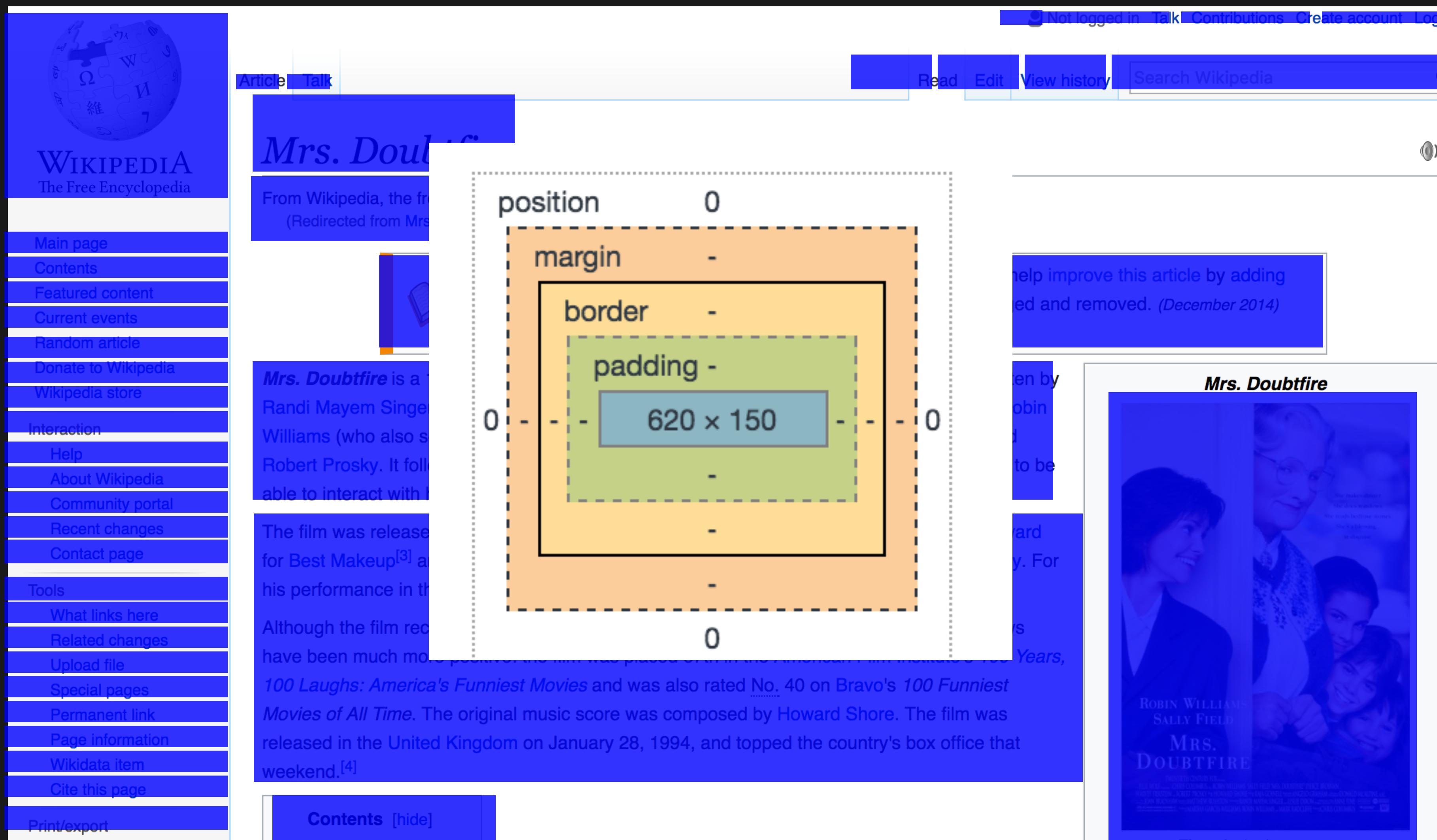
**Positioning
elements**



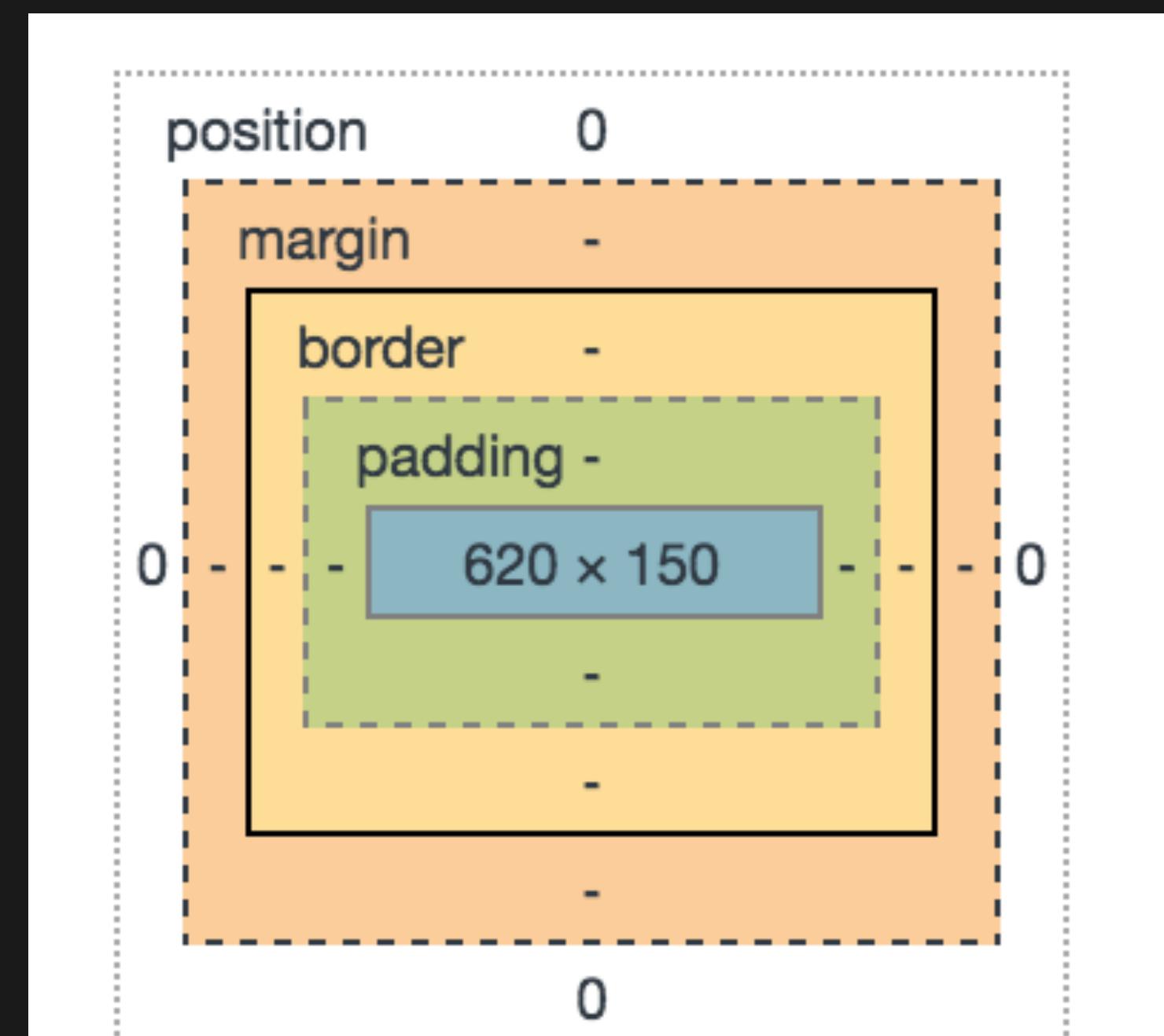




The box model



The box model



Live examples

The box model in action



CSS grids and frameworks

Shiny, new toys = shiny, happy developers





{less}

Sass





Bootstrap

Bootstrap Grid System

Bootstrap's grid system allows up to 12 columns across the page.

If you do not want to use all 12 column individually, you can group the columns together to create wider columns:

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	
span 4				span 4				span 4				
span 4		span 8										
span 6						span 6						
span 12												

Bootstrap's grid system is responsive, and the columns will re-arrange depending on the screen size: On a big screen it might look better with the content organized in three columns, but on a small screen it would be better if the content items were stacked on top of each other.





Contextual backgrounds

Similar to the contextual text color classes, easily set the background of an element to any contextual class. Anchor components will darken on hover, just like the text classes.

EXAMPLE

Nullam id dolor id nibh ultricies vehicula ut id elit.

Duis mollis, est non commodo luctus, nisi erat porttitor ligula.

Maecenas sed diam eget risus varius blandit sit amet non magna.

Etiam porta sem malesuada magna mollis euismod.

Donec ullamcorper nulla non metus auctor fringilla.

```
<p class="bg-primary">...</p>
<p class="bg-success">...</p>
<p class="bg-info">...</p>
<p class="bg-warning">...</p>
<p class="bg-danger">...</p>
```

Single button dropdowns

Turn a button into a dropdown toggle with some basic markup changes.

EXAMPLE

Default ▾ Primary ▾ Success ▾ Info ▾ Warning ▾ Danger ▾

```
<!-- Single button -->
<div class="btn-group">
  <button type="button" class="btn btn-default dropdown-toggle" data-toggle="dropdown" aria-
haspopup="true" aria-expanded="false">
    Action <span class="caret"></span>
  </button>
  <ul class="dropdown-menu">
    <li><a href="#">Action</a></li>
    <li><a href="#">Another action</a></li>
      <li><a href="#">Something else here</a></li>
    <li role="separator" class="divider"></li>
    <a href="#">Separated link</a></li>
  </ul>
</div>
```

Copy



A brief recap

1. CSS syntax specifies 3 parts: the *selector*, the *property* and the *value*
2. Over 40 CSS properties are available; each has a specific value
3. CSS positioning uses the *box model* and *floats* to achieve table-free layouts

