

# Chapter 2 (cont)

## Introduction to CSS

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Lectured by:  
Nguyễn Hữu Hiếu

# CSS Units

BK  
TP.HCM

[https://www.w3schools.com/cssref/css\\_units.asp](https://www.w3schools.com/cssref/css_units.asp)

# CSS Units

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- CSS has several different units for expressing a length.
- Many CSS properties take "length" values, such as width, margin, padding, font-size, etc.
- Length is a number followed by a length unit, such as 10px, 2em, etc.
- A whitespace cannot appear between the number and the unit. However, if the value is 0, the unit can be omitted.
- For some CSS properties, negative lengths are allowed.
- There are two types of length units: absolute and relative.

# Absolute units

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- Specify a fixed value  
`P {margin: 1.25in;}`
- Cannot be scaled to client display
- Should only be used when exact measurements of destination medium are known



# Absolute units

The absolute length units are fixed and a length expressed in any of these will appear as exactly that size.

Unit	Description
cm	centimeters
mm	millimeters
in	inches (1in = 96px = 2.54cm)
px *	pixels (1px = 1/96th of 1in)
pt	points (1pt = 1/72 of 1in)
pc	picas (1pc = 12 pt)

# Relative units

---

- Enables scalable Web pages that adapt to different display types and sizes
- Recommended method for Web page design
- Relative measurement values such as em and px are designed to let you build scalable Web pages that adapt to different display types and sizes
- The W3C recommends that you always use relative values

# Relative Lengths

Relative length units specify a length relative to another length property

Unit	Description
em	Relative to the font-size of the element (2em means 2 times the size of the current font)
ex	Relative to the x-height of the current font (rarely used)
ch	Relative to width of the "0" (zero)
rem	Relative to font-size of the root element
vw	Relative to 1% of the width of the viewport*
vh	Relative to 1% of the height of the viewport*
vmin	Relative to 1% of viewport's* smaller dimension
vmax	Relative to 1% of viewport's* larger dimension
%	Relative to the parent element

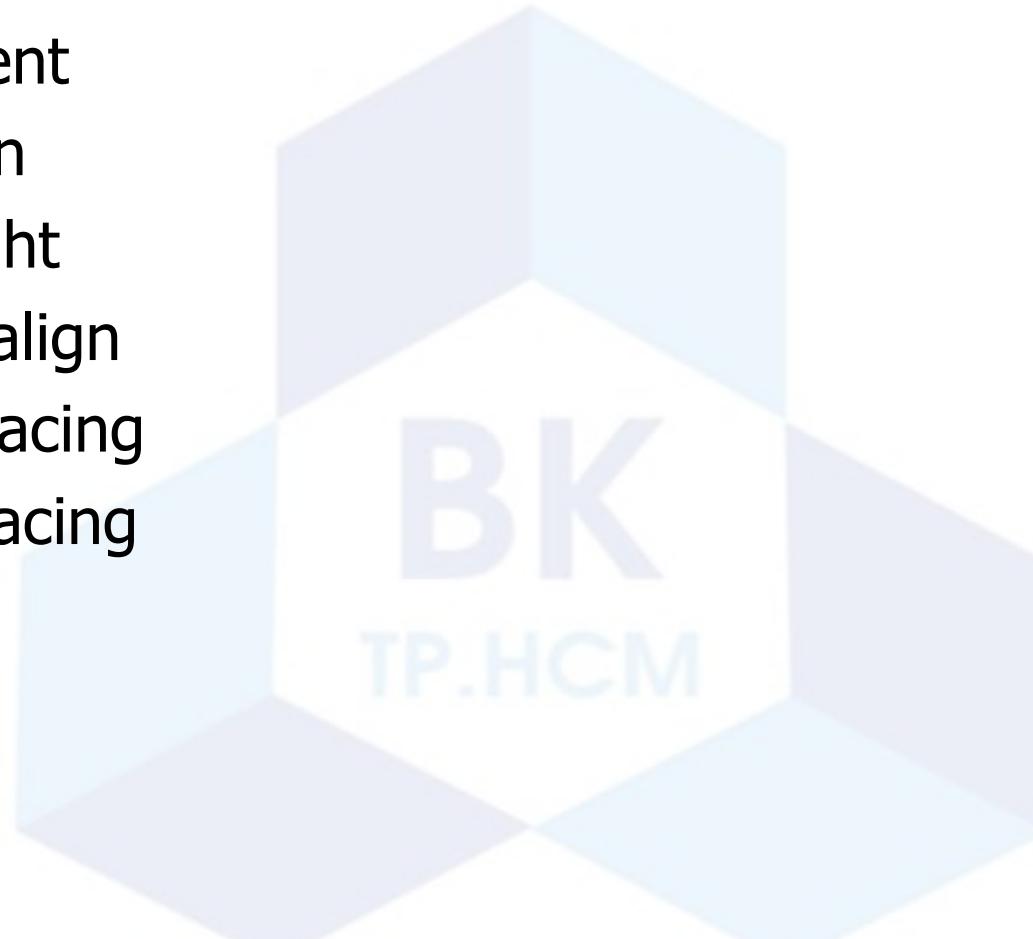
---

# Using the CSS Text Spacing Properties



# CSS Text Spacing Properties

- text-indent
- text-align
- line-height
- vertical-align
- letter-spacing
- word-spacing

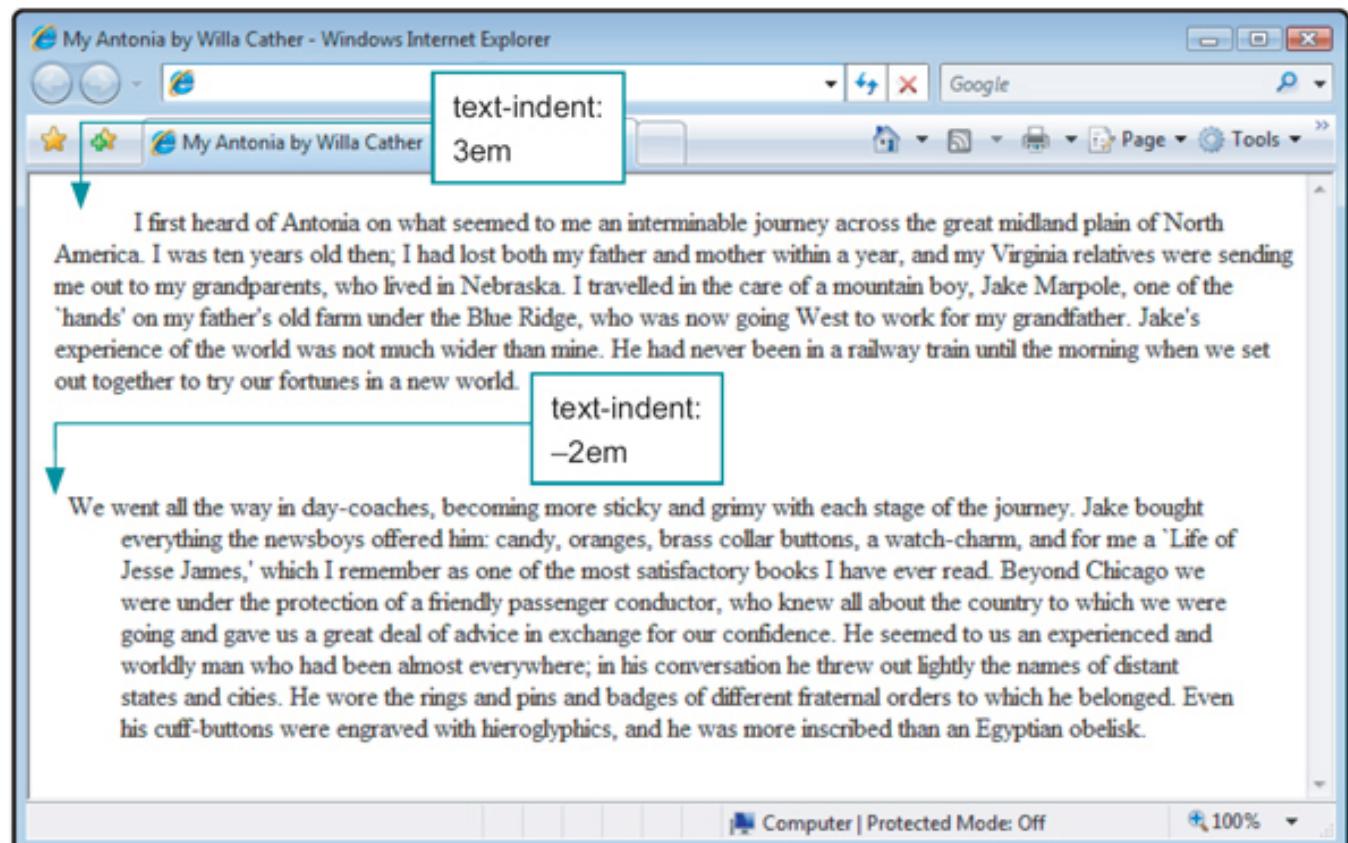


# Specifying Text Indents

```
p {text-indent: 24pt;}
```

- Use the text indent property to set the amount of indentation for the first line of text in an element, such as a paragraph
- The following rule sets an indent of 24 points:

**Figure 7-8**  
Text indents



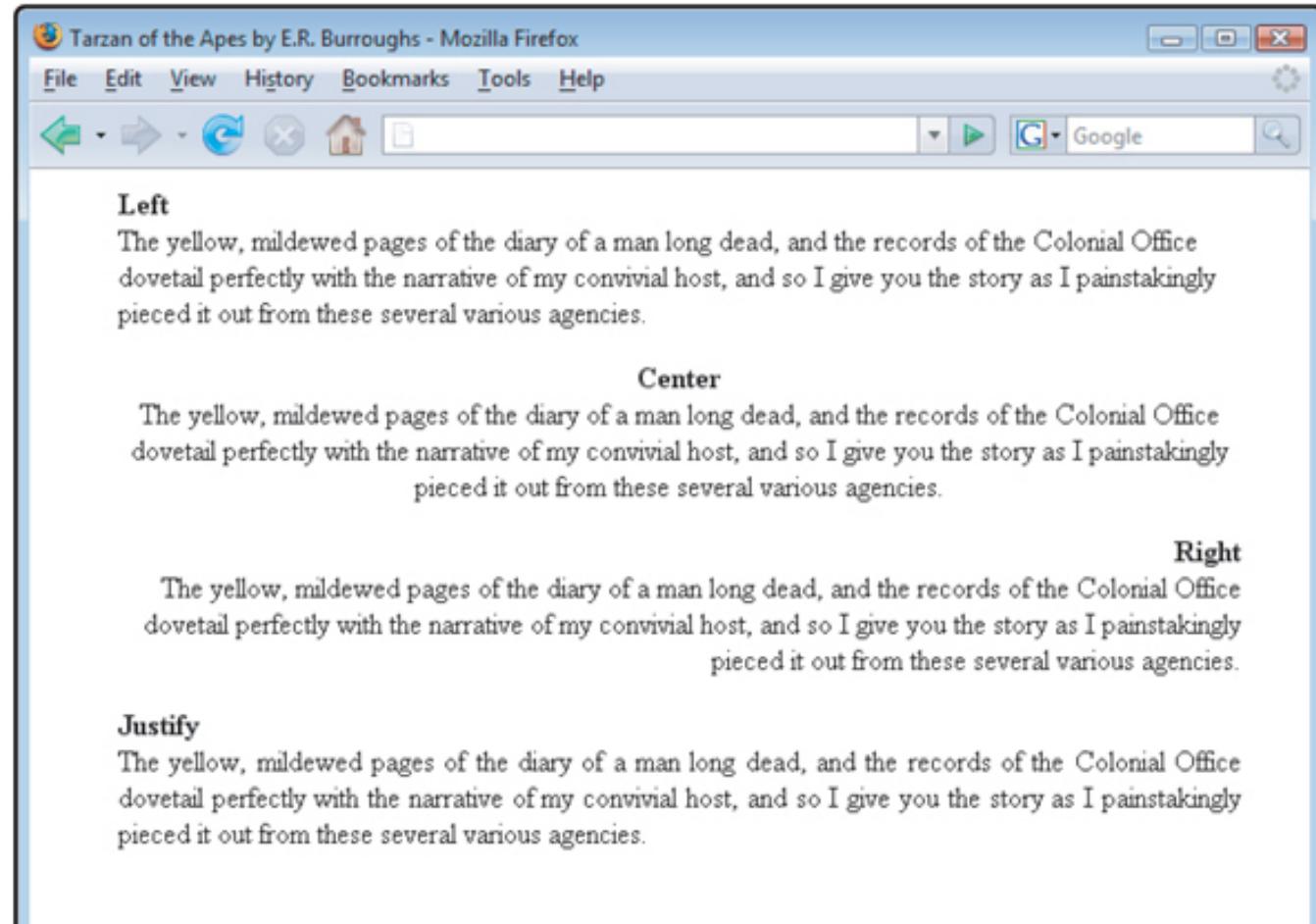
# Specifying Text Alignment

```
p {text-align: justify}
```

- Use the text-align property to set horizontal alignment for the lines of text in an element

**Figure 7-9**

Text alignments



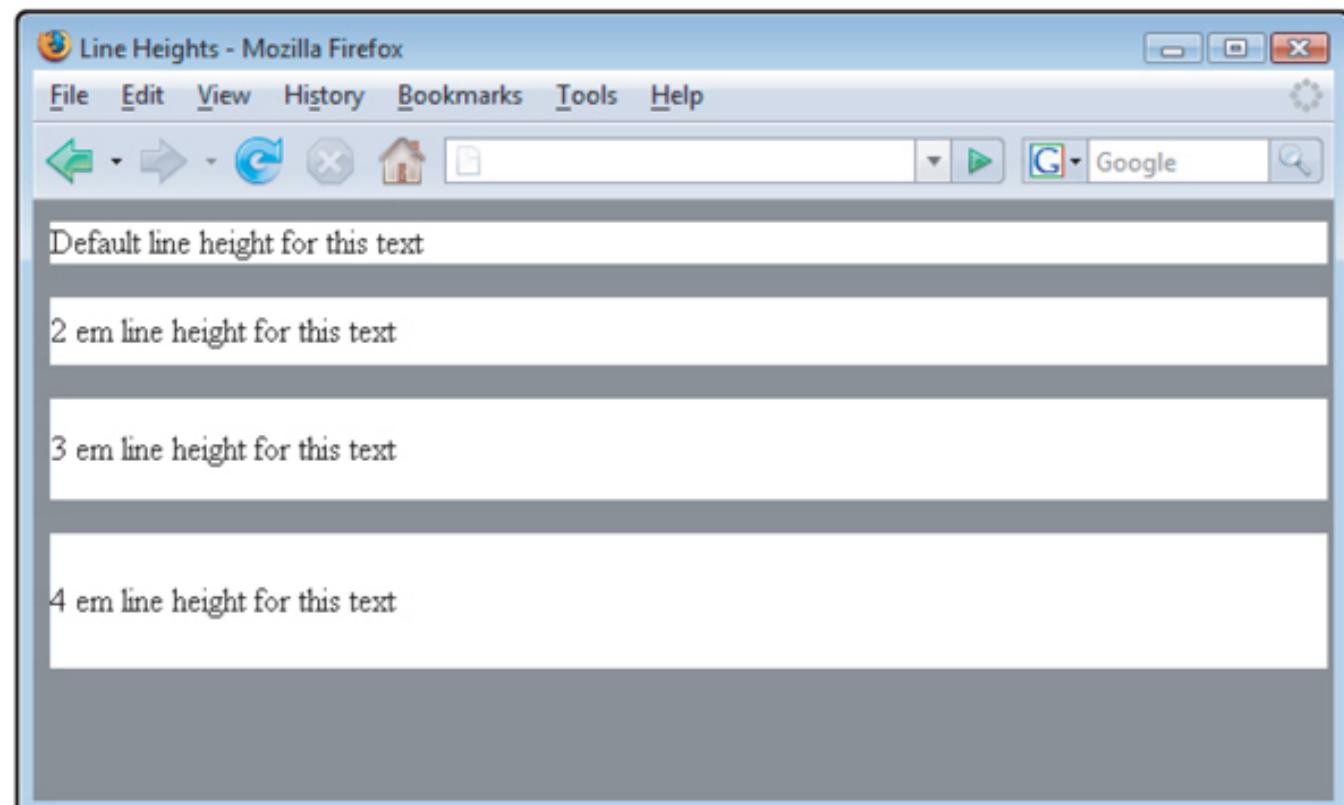
# Specifying Line Height

- CSS allows you to specify either a percentage or absolute value for the line height, which is more commonly called leading
- The following rule sets the line height to 2 em:

```
p {line-height: 2em; }
```

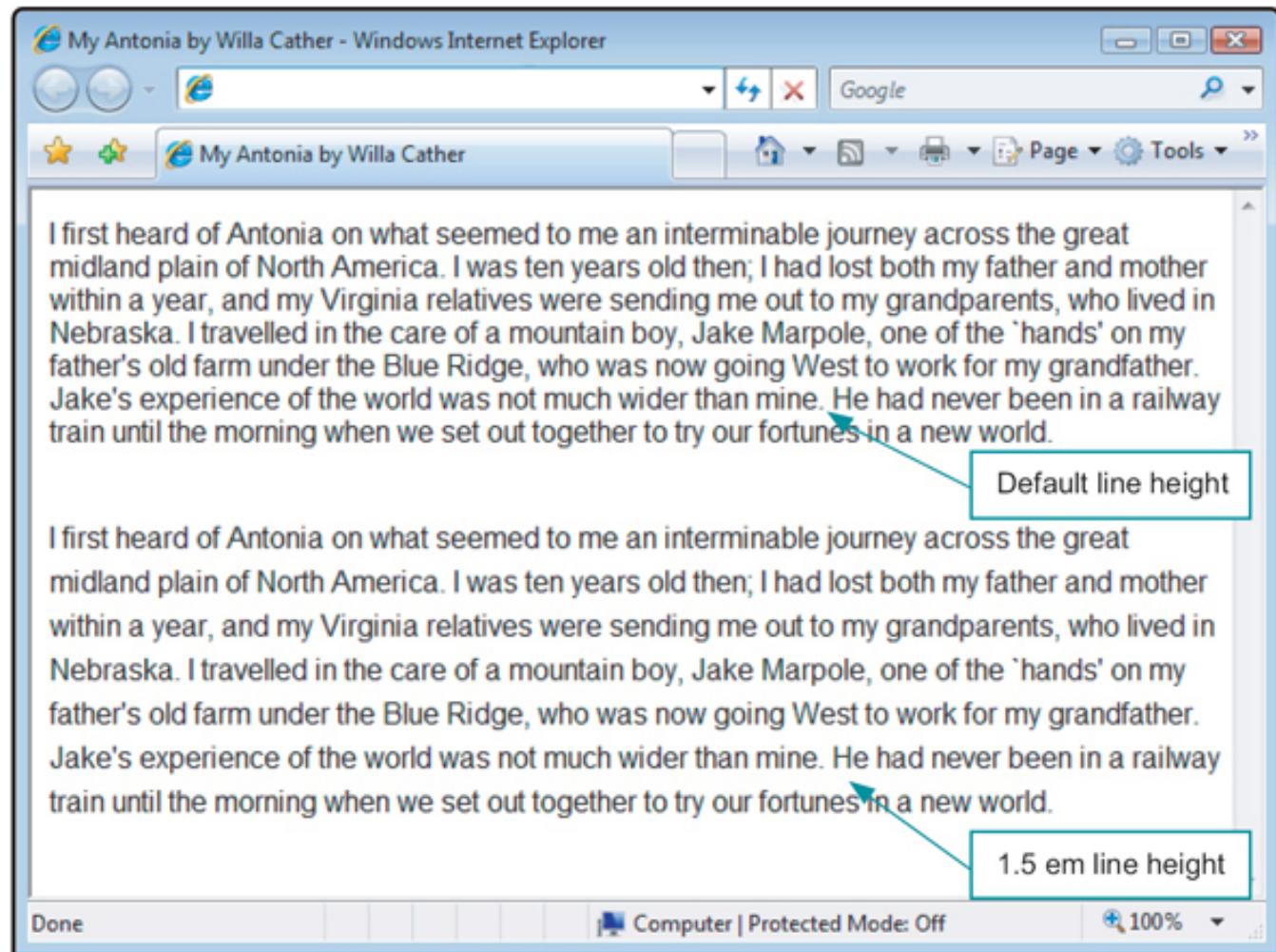
**Figure 7-11**

Line height



**Figure 7-12**

Adjusting line height increases legibility



# Specifying Vertical Alignment

- The vertical-align property lets you adjust the vertical alignment of text within the line box
- Vertical-align works on inline elements only



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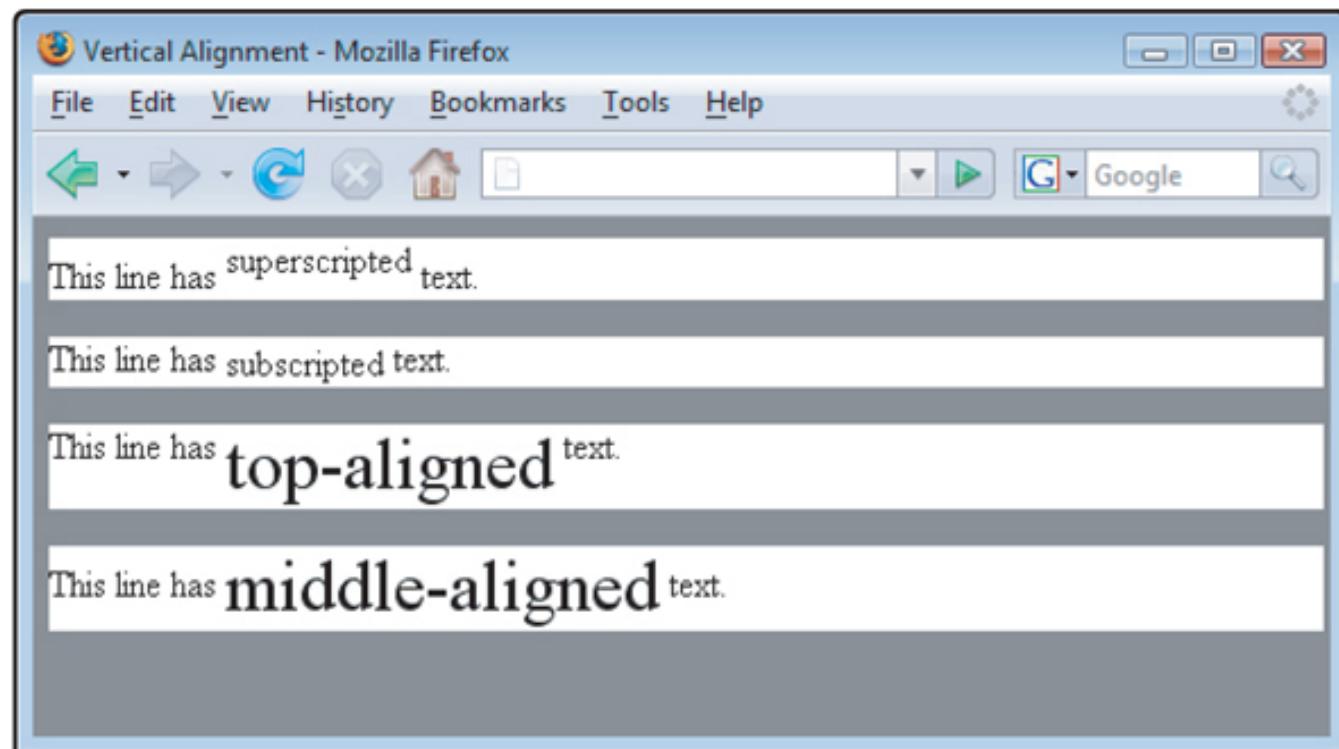
Value	Definition
baseline	Align the baseline of the text with the baseline of the parent element
sub	Lower the baseline of the box to the proper position for subscripts of the parent's box; this value does not automatically create a smaller font size for the subscripted text
middle	The CSS2 specification defines "middle" as "the vertical midpoint of the box with the baseline of the parent box plus half the x-height of the parent"; realistically, this means the middle-aligned text is aligned to half the height of the lowercase letters
super	Raise the baseline of the box to the proper position for superscripts of the parent's box; this value does not automatically create a smaller font size for the superscripted text
text-top	Align the top of the box with the top of the parent element's font
text-bottom	Align the bottom of the box with the bottom of the parent element's font
top	Align the top of the box with the top of the line box
bottom	Align the bottom of the box with the bottom of the line box

**Table 7-5** Vertical-align property values



**Figure 7-13**

Vertical alignments



# Specifying Vertical Alignment (continued)

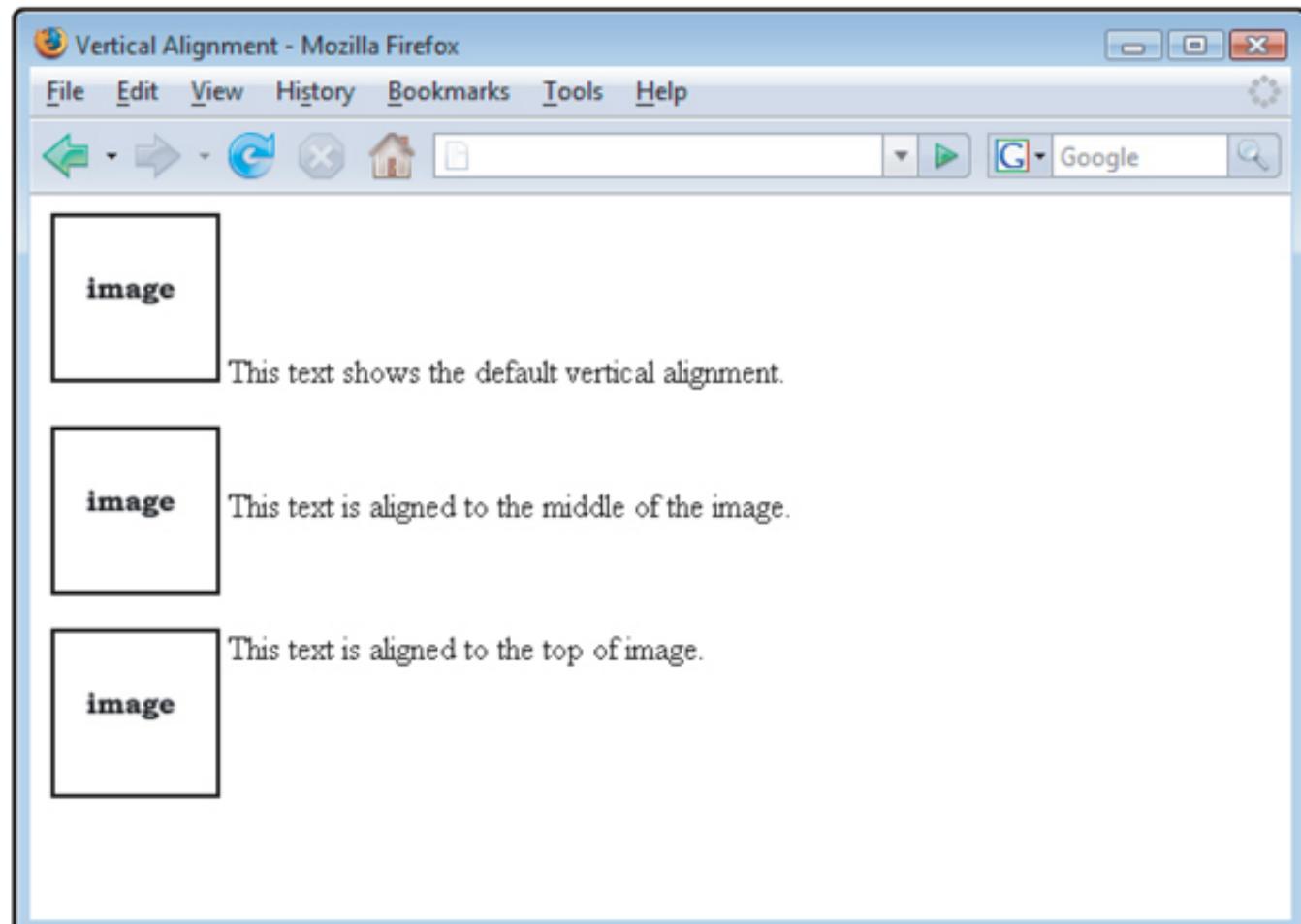
- You can also use vertical alignment to align text with graphics
- The following rule, added to the `<img>` element with the `style` attribute, sets the vertical alignment to top:

```

```

**Figure 7-14**

Vertically aligning text and graphics



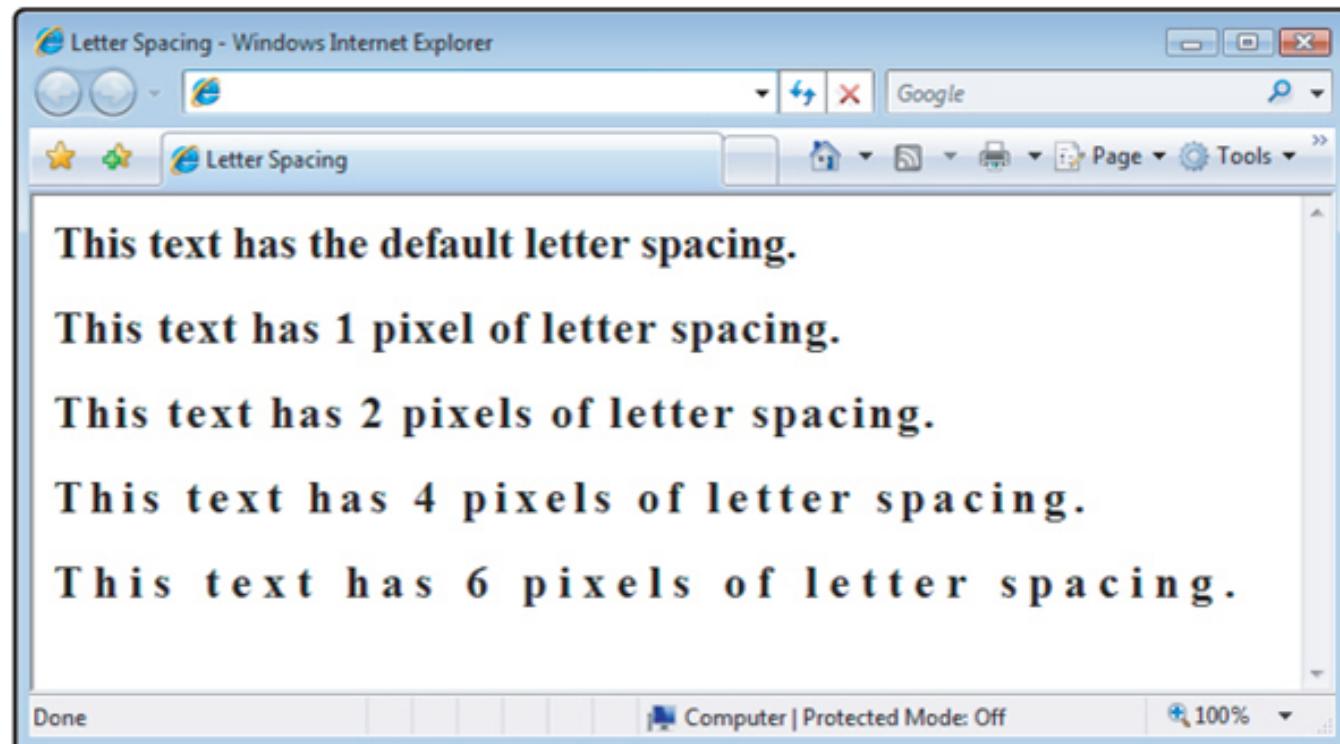
# Specifying Letter Spacing

- To adjust kerning, the printer's term for adjusting the white space between letters, use the letter spacing property
- The following rule sets the letter spacing to 4 points

```
h1 {letter-spacing: 4pt; }
```

**Figure 7-15**

Adjusting letter spacing



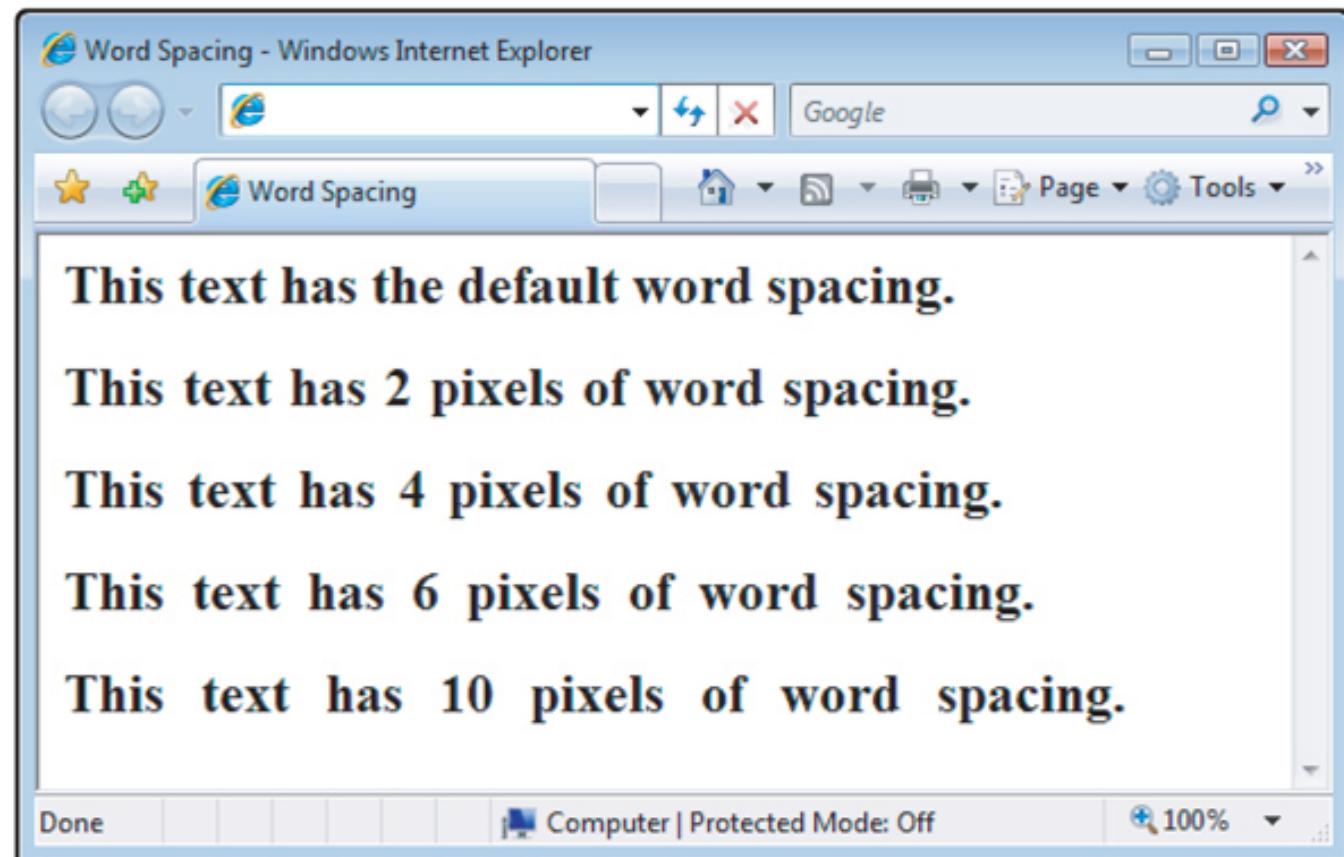
# Specifying Word Spacing

```
h1 {word-spacing: 2em; }
```

- The word-spacing property lets you adjust the white space between words in the text
- The following code sets the word spacing to 2 em

**Figure 7-16**

Adjusting word spacing



# Responsive Web Design

# Responsive Web Design

**RWD** is the concept of developing a website in a way that **allows the layout to adjust** according to the user's screen resolution (*view port*) using *media queries*



# What is RWD?



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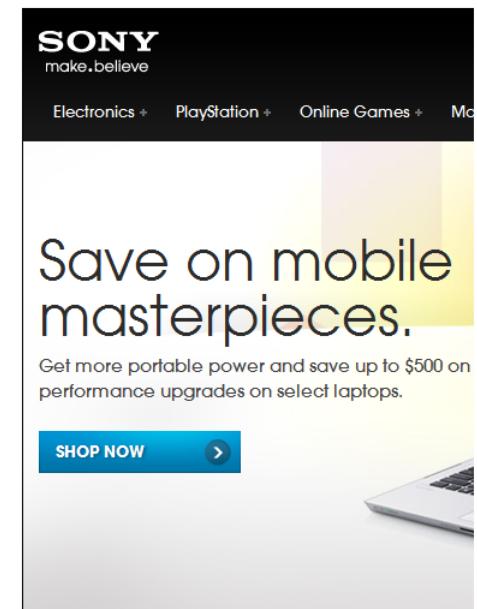
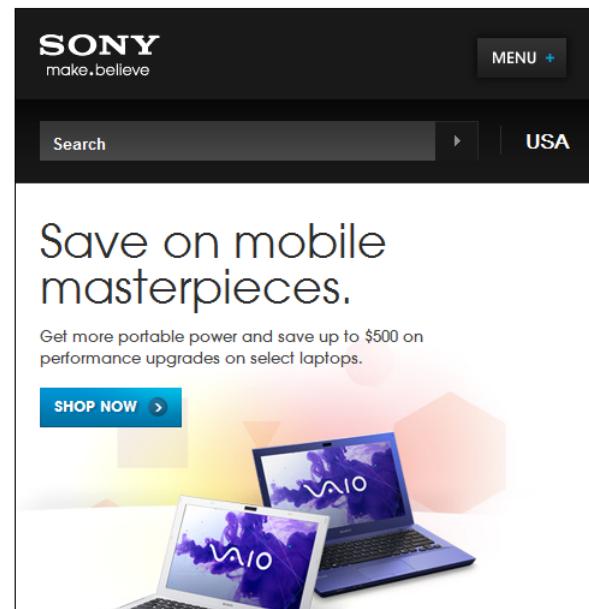
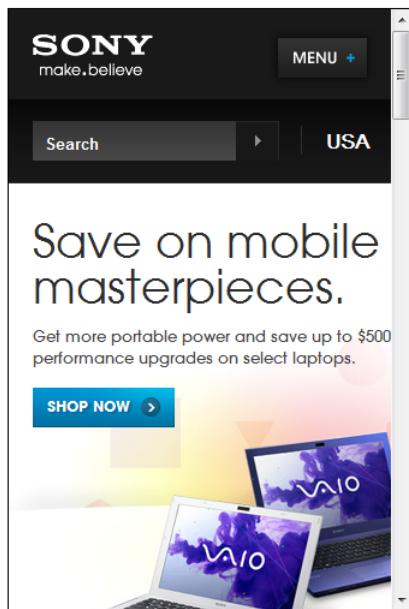
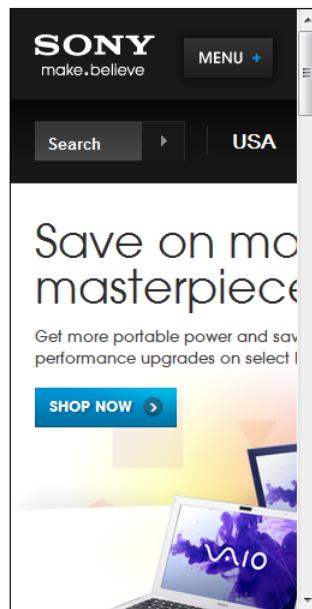
- Width only
- Device sizes

240

320

480

768

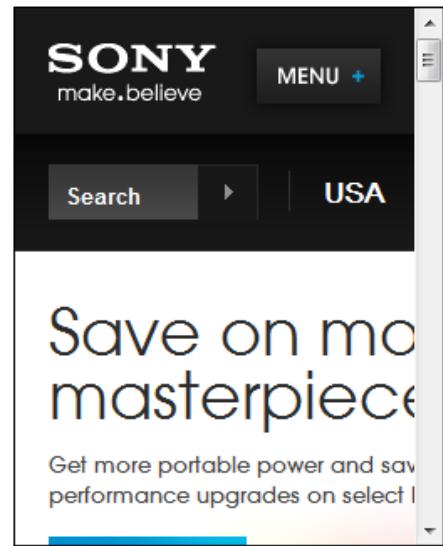


A tool by Matt Kersley - [Fork it on Github](#)

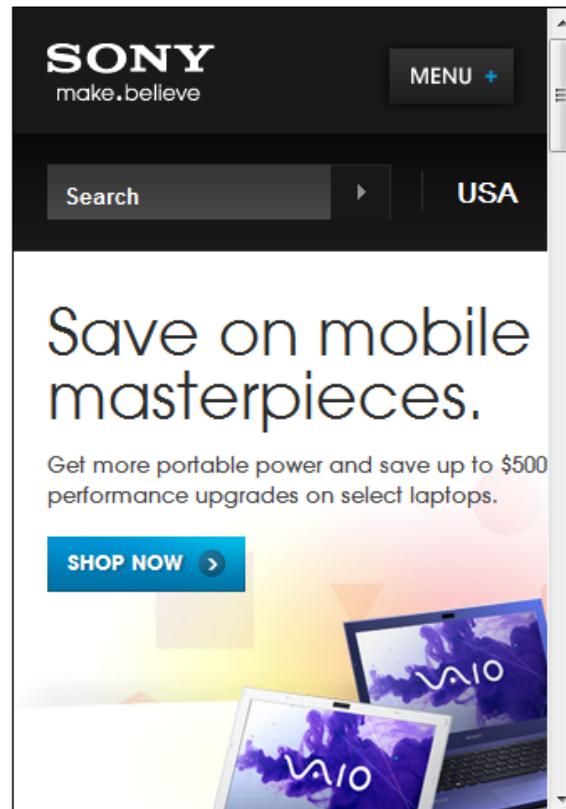
Note: The content width may not be pixel perfect - I have added 15px to the iframes to cater for the scrollbars

# What is RWD?

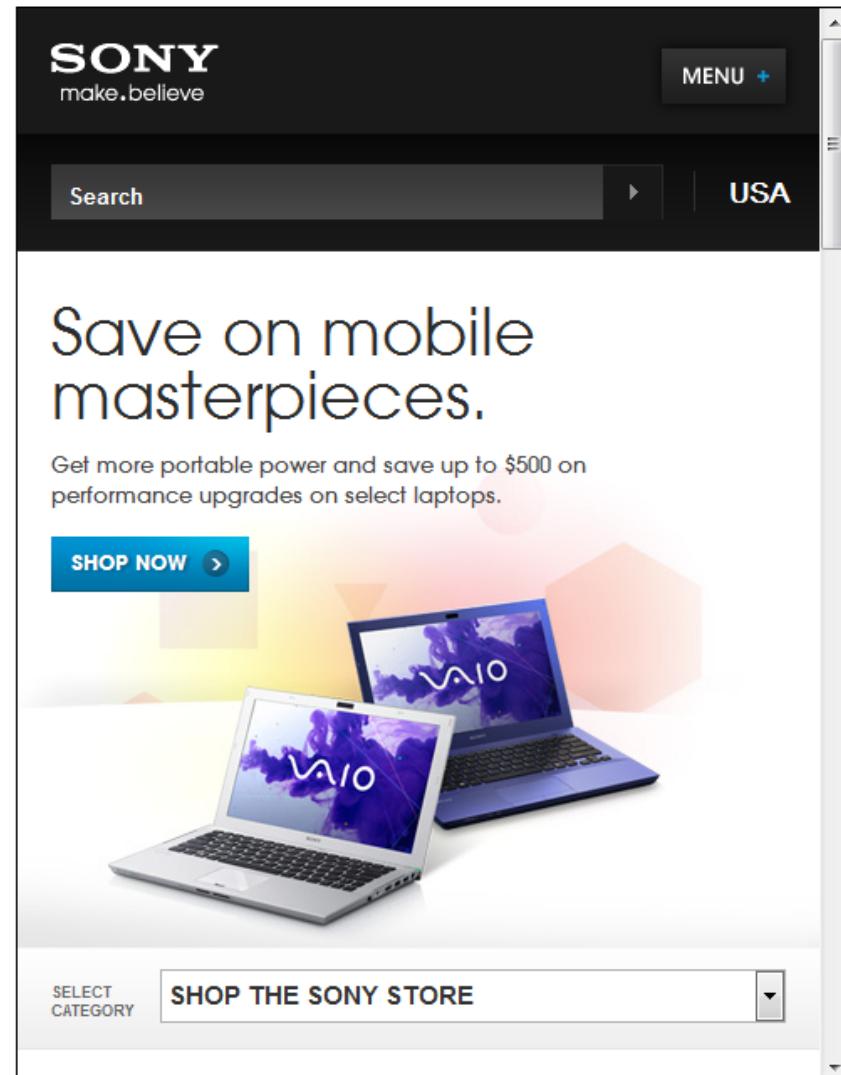
240 x 320 (small phone)



320 x 480 (iPhone)



480 x 640 (small tablet)



# What is RWD?

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If you have a laptop, and a smart phone and a tablet you can see what I'm talking about, by going here:

**<http://achv.in/rwdrob>**

**[http://mattkersley.com/responsive/?{website\\_url}](http://mattkersley.com/responsive/?{website_url})**

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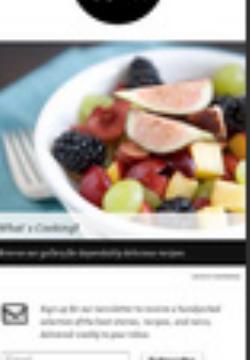
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# Clean Air Commute Challenge

The mobile version of the landing page features a blue header with the "CLEAN AIR WORKS" logo. Below it is a large title "CLEAN AIR COMMUTE CHALLENGE". A paragraph explains the Charlotte metropolitan area ranks 10th in the nation for poor air quality issues. It highlights the importance of learning about air pollution and taking steps to improve it. Below this are icons for various commute options: Ride Cars, Bike, Carpool, Vanpool, Walk, and Telecommute. A yellow "REGISTER" button is centered below the options. At the bottom, there's a green landscape illustration with a city skyline silhouette in the background, and a "KNOW THE CODES" section with a color-coded bar.

The tablet view of the landing page is similar to the mobile version but includes a larger "ARE YOU UP FOR THE CHALLENGE?" section. It encourages users to register by clicking the "REGISTER" button. Below this, there's a "KNOW THE CODES" section with a color-coded bar. The overall layout is designed to be responsive across different screen sizes.

The desktop view of the landing page includes a vertical navigation bar on the right side with four buttons: "REGISTER", "ENTER DAILY COMMUTE", "COMMUTE OPTIONS", and "RULES". The main content area features the "CLEAN AIR WORKS" logo, the challenge title, and the paragraph about air quality. It also includes the "ARE YOU UP FOR THE CHALLENGE?" section and the "KNOW THE CODES" section with a color-coded bar. The design is optimized for desktop displays.

# FlexSlider

# FLEXSLIDER

an awesome, fully responsive jQuery slider plugin.

**WHY FLEXSLIDER?**

- Simple, semantic markup
- Supported in all major browsers
- Slide and Fade animations
- Multiple slider support, highly customizable options
- Directional, keyboard, and touch swipe navigation
- Very Lightweight (file minified)
- Use any html elements in the slides
- Built for beginners and pros, alike
- Free to use under the MIT license



Captions and capslips, styling, controls, etc.

**GET STARTED** Install Setup

**ADVANCED OPTIONS** Customize your slider

**SUPPORT** About FlexSlider

**COMMUNITY** Ask questions here!

**DOWNLOAD THE KIT** Version 1.6 - Base 1.7.9rc

**Getting started with FlexSlider is quick and easy!**

**Step 1 - Link Files**  
Add these items to the `<head>` of your document. This will link jQuery and the FlexSlider core JS/CSS files into your webpage. You can also choose to host jQuery on your own server, but Google is nice enough to take care of that for us!

```
http://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js
http://flesler.github.com/flexslider/1.6/flexslider.css
http://flesler.github.com/flexslider/1.6/flexslider.js
```

**Step 2 - Add markup**  
The FlexSlider markup is simple and straightforward. First, start with a single containing element, `<div class="flexslider">` in this example. Then, create a `<ul class="slides">/</ul>`. It is important to use this class because the slide targets that class specifically (but your images and anything else you don't see with `<li>` and you are ready to rock).

**Not clever enough yet?**  
If you are having trouble getting FlexSlider working for you, check out the [demonstration page](#). The same demo is included in the download file and should help get you started.

# FLEXSLIDER

an awesome, fully responsive jQuery slider plugin.



Captions and capslips, styling, controls, etc.

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**GET STARTED**

**ADVANCED OPTIONS**

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**Getting started with FlexSlider is quick and easy!**

# What is RWD?

More examples:

- <http://foodsense.is>
- <http://earthhour.fr>
- <http://w3conf.org>
- <http://mediaqueri.es>
- <http://fourkitchens.com>

# Who needs RWD?

You need RWD if:

- You're starting from scratch.
- You want to keep costs low
- You want it to work even when new devices are released

# Media Queries and CSS3

In its essence a media query consists of a media type and an expression to check for certain conditions of a particular media feature. The most commonly used media feature is width.



# CSS3 & Media Queries

## In your CSS:

```
@media screen and (min-width: 480px) {  
    .content { float: left; }  
    .social_icons { display: none }  
    // and so on...  
}
```



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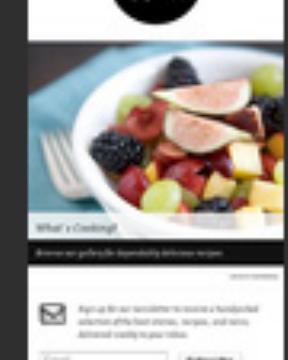
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# CSS3 & Media Queries

By restricting CSS rules to a certain width of the device displaying a web page, one can *tailor the page's representation* to devices with varying screen resolution (view port).

# Meta viewport

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

- A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling.
- The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).
- The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

# Meta viewport



Without the viewport meta tag



With the viewport meta tag

# CSS3 & Media Queries

```
/*===== Mobile First Method =====*/
/* Custom, iPhone Retina */
@media only screen and (min-width : 320px) {
    ...
}

/* Extra Small Devices, Phones */
@media only screen and (min-width : 480px) {
    ...
}

/* Small Devices, Tablets */
@media only screen and (min-width : 768px) {
    ...
}

/* Medium Devices, Desktops */
@media only screen and (min-width : 992px) {
    ...
}

/* Large Devices, wide Screens */
@media only screen and (min-width : 1200px) {
    ...
}
```

# CSS3 & Media Queries

```
/*===== Non-Mobile First Method =====*/
/* Large Devices, wide Screens */
@media only screen and (max-width : 1200px) {
    ...
}

/* Medium Devices, Desktops */
@media only screen and (max-width : 992px) {
    ...
}

/* Small Devices, Tablets */
@media only screen and (max-width : 768px) {
    ...
}

/* Extra Small Devices, Phones */
@media only screen and (max-width : 480px) {
    ...
}

/* Custom, iPhone Retina */
@media only screen and (max-width : 320px) {
    ...
}
```

# CSS frameworks



# What is CSS frameworks

- A **CSS framework** is a library allowing for easier, more standards-compliant web design using the Cascading Style Sheets language. Most of these frameworks contain at least a grid.
- CSS frameworks are tools used by UI developers to make their job easier.

# What is CSS frameworks

	BEST CSS FRAMEWORK	PRICE	GZIPPED SIZE	LAST UPDATED
92	 Bulma	-	-	Apr 5, 2020
87	 Bootstrap	FREE / PAID	-	Mar 20, 2020
83	 mini.css	-	-	Feb 5, 2020
83	 Foundation	-	-	Jan 25, 2020
81	 uikit	FREE	-	Mar 24, 2020
75	 Skeleton	-	-	Jan 27, 2020
74	 Semantic UI	-	-	Dec 23, 2019
73	 Spectre	0	-	Feb 17, 2020
72	 Materialize	-	-	Apr 4, 2020

<https://www.slant.co/topics/150/~best-css-framework>

# Tài Liệu Tham Khảo

- [1] *Unix Network Programming, Vol. 1, Third Edition, The Sockets Networking API*, W. Richard Stevens, Bill Fenner, Andrew M. Rudoff, Addison Wesley, 2003

