

HTML/CSS 101

CSE 154 Web Programming

Today's Project: Make a Web Page

- Today, you will learn:
 - HTML
 - CSS
 - Some basic Web Design Principles

Melissa Medsker-Galloway

Undergraduate Student
University of Washington - Human-Centered Design & Engineering

[Home](#) [Coursework](#) [Resume](#) [Personal](#)



Email: medskm@uw.edu

Welcome

About Me:

I'm an entrepreneurial-minded, curious, algorithmic problem-solver with an added passion for mentoring. In my free time, I'm either studying a new programming language, solving logic puzzles, or finding new things to learn, all with a hot cup of black coffee.

Academic Interests:

Machine Learning, Discrete Mathematics, Computer Science Education, Educational Game Design, Genomics and Proteomics

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The Ingredients for a Web Page

- HTML (Structure) + CSS (Style)
- Once you get the hang of these, you can add Javascript (Behavior)

HTML



CSS



JS



HTML

- Hyper-Text Markup Language
- Cool, huh? Let's start with the basics

```
<!DOCTYPE html>
<html>
  <head></head>
  <body></body>
  <footer></footer>
</html>
```

```
1 <!DOCTYPE HTML>
2 <html>
3   <head>
4     <title>Shawn's Profile Page</title>
5     <link rel="stylesheet" type="text/css" href="fakebook.css" />
6   </head>
7   <body>
8     <h3>fakebook</h3>
9     
12    <h1>Shawn Lee</h1>
13    <h3>Student at the University of Washington</h3>
14
15    <div>
16      <h3>About Me</h3>
17      <p>
18        My name is Shawn. I'm a college student, and I really like working with
19        computers! I also like to snowboard and play video games like
20        <a href="http://www.leagueoflegends.com/">League of Legends</a> and <a href
21        http://www.kleientertainment.com/games/dont-starve">Don't Starve</a>.
22      </p>
23    </div>
24    <div>
25      <h3>Cool Facts</h3>
26      <ul>
27        <li>You can use potatoes as a battery.</li>
28        <li>"Antidisestablishmentism" is longest word in the English language...tha
29        I could think of off of the top of my head.</li>
30        <li>This statement is false.</li>
31        <li>How much wood could a woodchuck chuck if a woodchuck could chuck wood?
32        Probably at least a few.</li>
33      </ul>
34    </div>
35  </body>
36 </html>
```

length: 1144 lines: 30 Ln: 30 Col: 8 Sel: 0|0 Dos\Windows UTF-8

What are these ‘<’ alligators?

- Tags! They label the parts of your page
 - You put associated content within your tags
- Two types:
 - Open and closing pairs
 - Ex: `<body>This is some text for my body</body>`
 - Most content tags will be of this type
 - Self-closing tags
 - ``
- Every tag must open and close like this!



Structural tags

- `<!DOCTYPE HTML>` lets the browser know you're using HTML 5
- `<html>` indicates when you are starting to write HTML

```
<!DOCTYPE html>  
<html>  
    ...  
</html>
```

The Header

- Sets up important information about webpage which isn't displayed within the body of the site
- We'll be using:

```
<title>Name</title>
```

```
<meta charset = "utf-8"/>
```



```
<!DOCTYPE html>
<html>
  <head>
    <title>My Page</title>
    <meta charset="utf-8"/>
  </head>
  <body></body>
  <footer></footer>
</html>
```

The Body

- Where the main content is organized and displayed
- We'll be using:

```
<div>... </div>
```

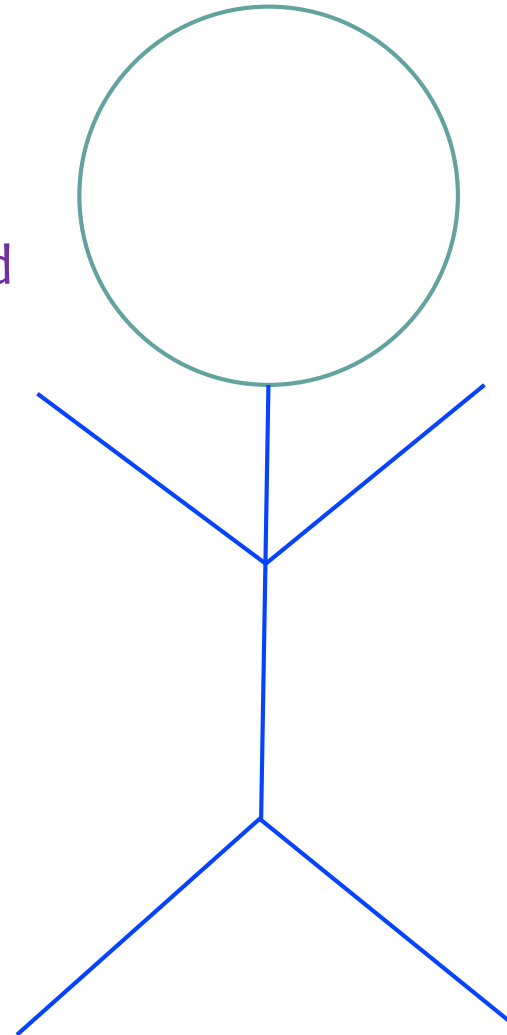
```
<p> ... </p>
```

```
<ul><li>... </li></ul>
```

```
<h1>... <h2>... <h3>... </h3></h2></h1>
```

```
<img />
```

```
<a />
```



An Example

<h1> LOGO **</h1>** And a little tagline, too. **<h3>**

**** Home **** About Portfolio Contact

<h2> Lorem Ipsum, Dolor sit

<h4> Nullam vulputate felis id odio interdum nec malesuada mi pretium.

<p> Praesent luctus egestas nisi, vitae vehicula eros rhoncus vel. Phasellus consequat arcu eu neque convallis eu vulputate diam vehicula. In eget venenatis nisi. Vestibulum id nulla eu sapien pellentesque malesuada pharetra ac lacus. Curabitur et ultricies quam. Aenean pretium aliquet velit, gravida vulputate urna tempus vel.

<p> Proin tempor erat sit amet nisi porta nec vulputate arcu imperdiet. Praesent luctus egestas nisi, vitae vehicula eros rhoncus vel. Phasellus consequat arcu eu neque convallis eu vulputate diam vehicula. In eget venenatis nisi. Vestibulum id nulla eu sapien pellentesque malesuada pharetra ac lacus. Curabitur et ultricies quam. Aenean pretium aliquet velit, gravida vulputate urna tempus vel. Proin tempor erat sit amet nisi porta nec vulputate arcu imperdiet.

<h4> Latest Updates

<h5> Vestibulum id nulla eu sapien pellentesque

<small> June 1, 2009

<p> Ut vel turpis a orci pulvinar tincidunt. Mauris id purus turpis. Aliquam metus arcu, facilisis quis pellentesque vitae, dapibus non nulla. Nulla suscipit sagittis sodales. Etiam laoreet ante in purus laoreet id malesuada duis pretium.

<h5> Vestibulum id nulla eu sapien pellentesque

<small> June 1, 2009

<p> Ut vel turpis a orci pulvinar tincidunt. Mauris id purus turpis. Aliquam metus arcu, facilisis quis pellentesque vitae, dapibus non nulla. Nulla suscipit sagittis sodales. Etiam laoreet ante in purus laoreet id malesuada duis pretium.

**** Subscribe!

<a> Subscribe via RSS **<a>**

<a> Get Email Updates **<a>**

<a> Follow us on Twitter **<a>**

**** Popular Items

<a> Lorem ipsum dolor site amet **<a>**

<a> Ultrinar tincidunt, Mauris id **<a>**

<a> Lorem ipsum dolor site amet **<a>**

<a> Proin tempor erat sit fene **<a>**

**** Contributors

<a> John Smith, freelance writer **<a>**

<a> Jack McCoy, designer **<a>**

<a> Lenny Briscoe, editor **<a>**

<a> John Smith, marketing **<a>**

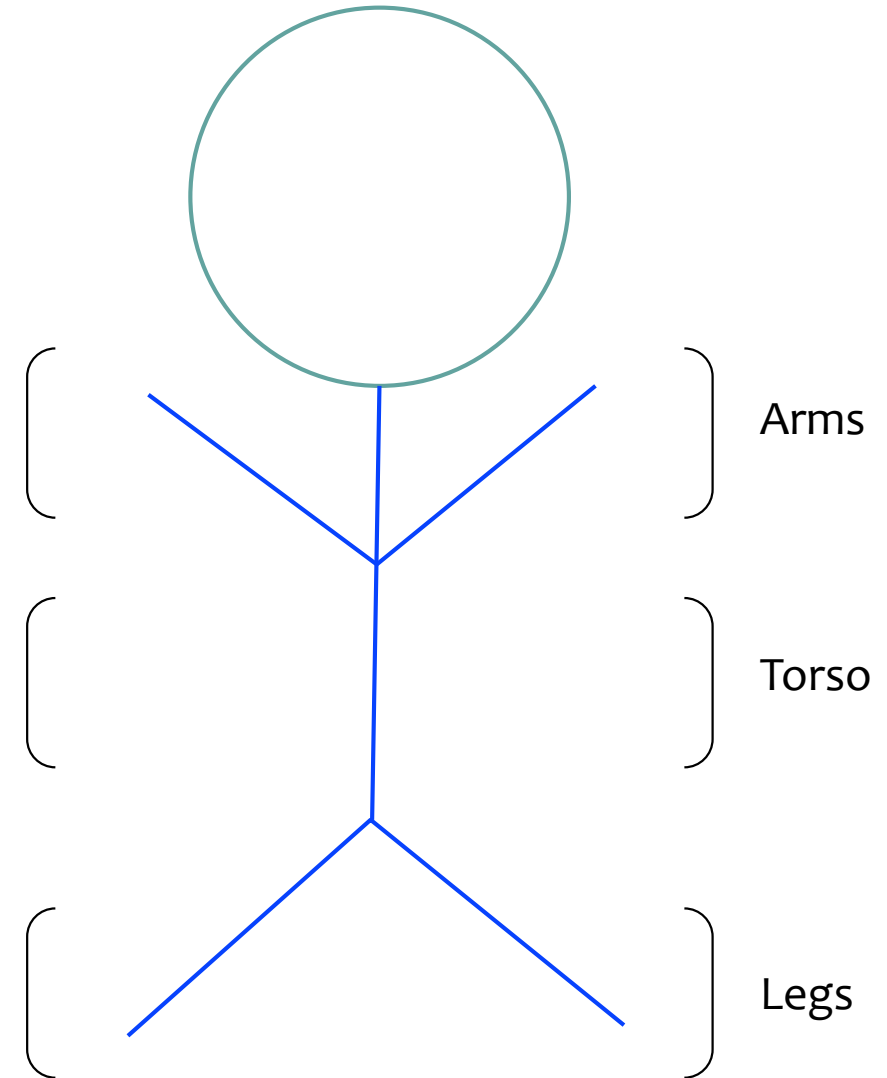
<a> Join Our Team ****

<p> Copyright © 2009 MySite
All Rights Reserved

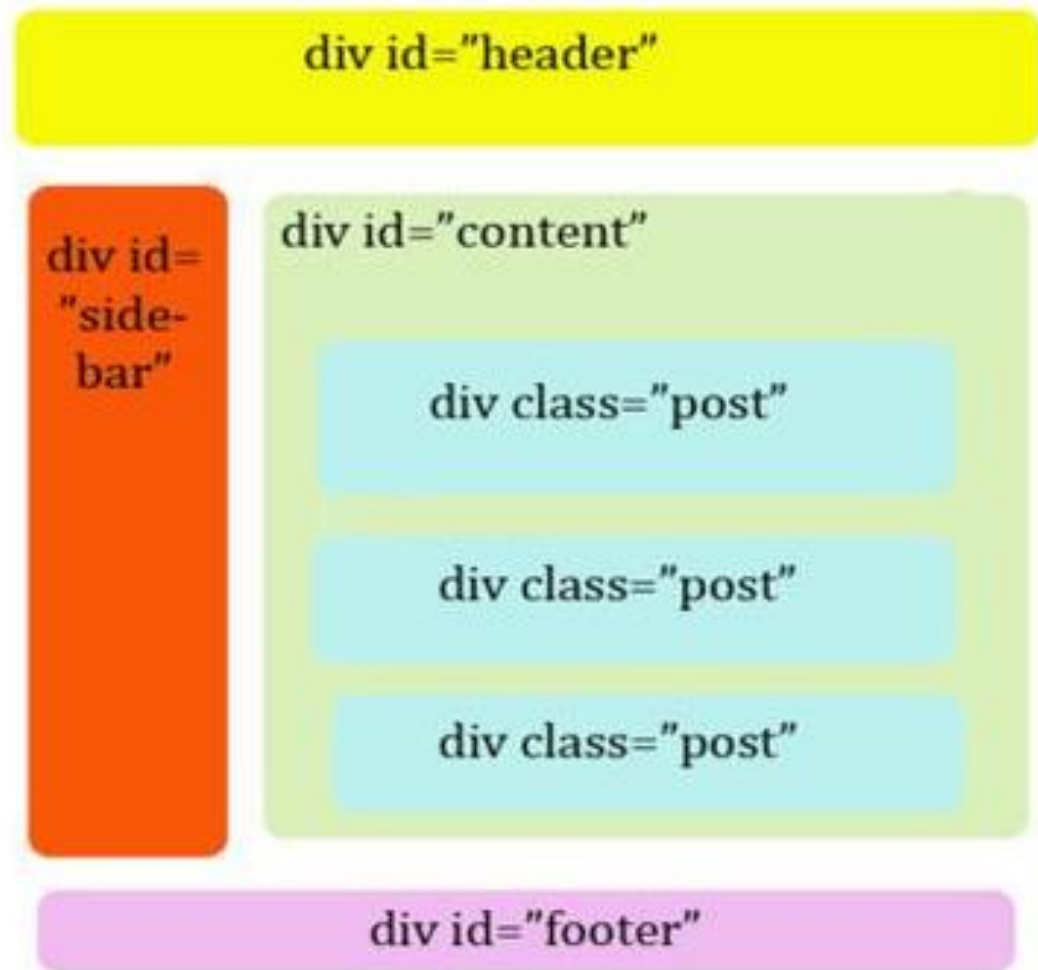
The Div

- Helps 'divide' your content into blocks
- Can put other tags you want contained within, such as `<p>` and ``
- How would you break the body of your profile page into categories?

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Page</title>
    <meta charset="utf-8"/>
  </head>
  <body>
    <div id="about"></div>
    <div id="contact"></div>
  </body>
  <footer></footer>
</html>
```



Divs in Practice



<h1>Main Heading</h1>,
<h2>Sub Heading</h2>,
<h3>Sub-sub-heading</h3> ...

- Heading tags
- h1 is the primary header, and is great for displaying your page's name
- h2 and h3 are sub-headers (not always necessary)

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Page</title>
    <meta charset="utf-8"/>
  </head>
  <body>
    <h1>Welcome to My Page!</h1>
    <div id="about">
      <h2>About Me</h2>
      <h3>Fun Facts</h3>
    </div>
    <div id="contact">Email:
    helloworld@uw.edu</div>
  </body>
  <footer></footer>
</html>
```

<p>Paragraph</p>

- The paragraph tag
- Where you write most of the body content
- Same idea as an ‘essay’ paragraph

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Page</title>
    <meta charset="utf-8"/>
  </head>
  <body>
    <h1>Welcome to My Page!</h1>
    <div id="about">
      <h2>About Me</h2>
      <p>My name is Melissa
Galloway and I am a UW student in Seattle, WA.
This is a really short bio.</p>
      <h3>Fun Facts</h3>
    </div>
    <div
id="contact">helloworld@uw.edu</div>
  </body>
  <footer></footer>
</html>
```

List elements!

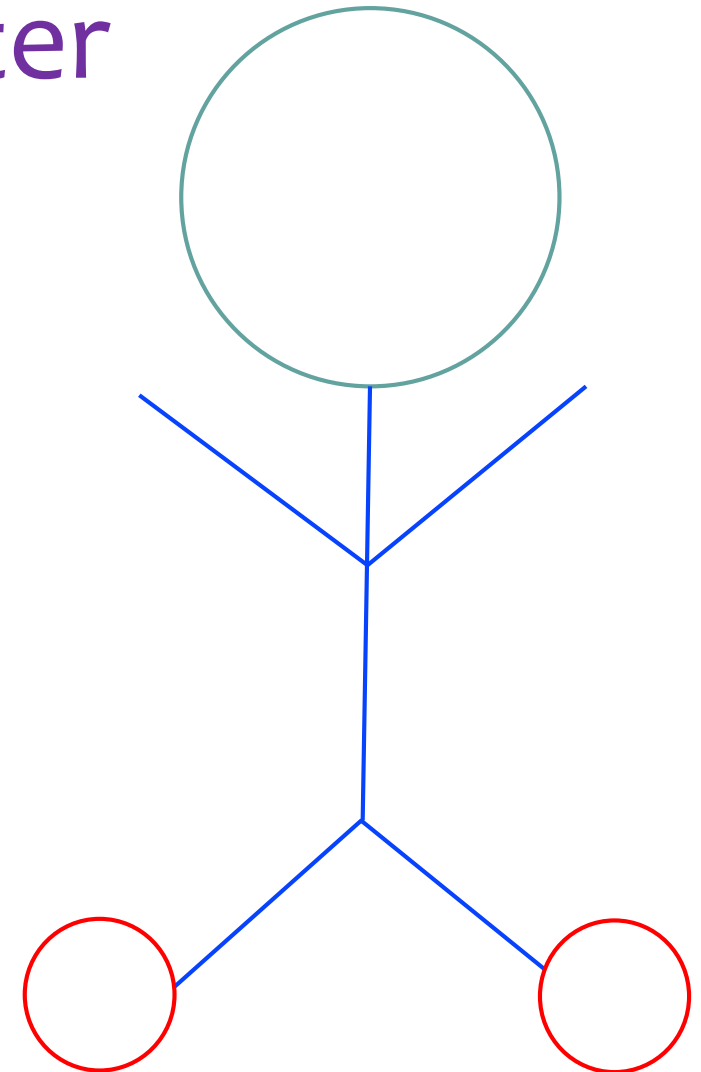
- Help you make lists of text with bullet points like this one
- starts your list, ends your list
- *item* is used for each list item

```
...
    <body>
        <h1>Welcome to My Page!</h1>
        <div id="about">
            <h2>About Me</h2>
            <p>My name is Melissa Galloway and I am a UW
student in Seattle, WA. This is a really short bio.</p>
            <h3>Fun Facts:</h3>
            <ul>
                <li>I love programming</li>
                <li>Favorite food is black coffee</li>
                <li>Favorite animal is Pikachu</li>
            </ul>
        </div>
        <div id="contact">Email: helloworld@uw.edu</div>
    </body>
</html>
```

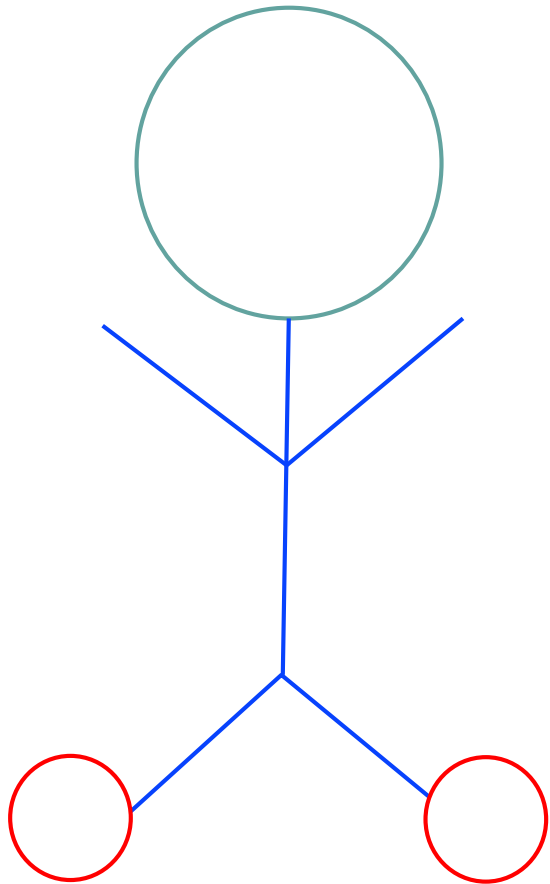
Back to our dude... The Footer

- The footer is optional, but you can put contact info and copyright date here:

```
...           <ul>
                <li>I love programming</li>
                <li>Favorite food is black coffee</li>
                <li>Favorite animal is Pikachu</li>
            </ul>
        </div>
        <div id="contact">Email: helloworld@uw.edu</div>
    </body>
    <footer>
        <p>&copy; 2015 Melissa Medsker-Galloway</p>
    </footer>
</html>
```



Our Model is Complete. Now You've Got Everything you Need...

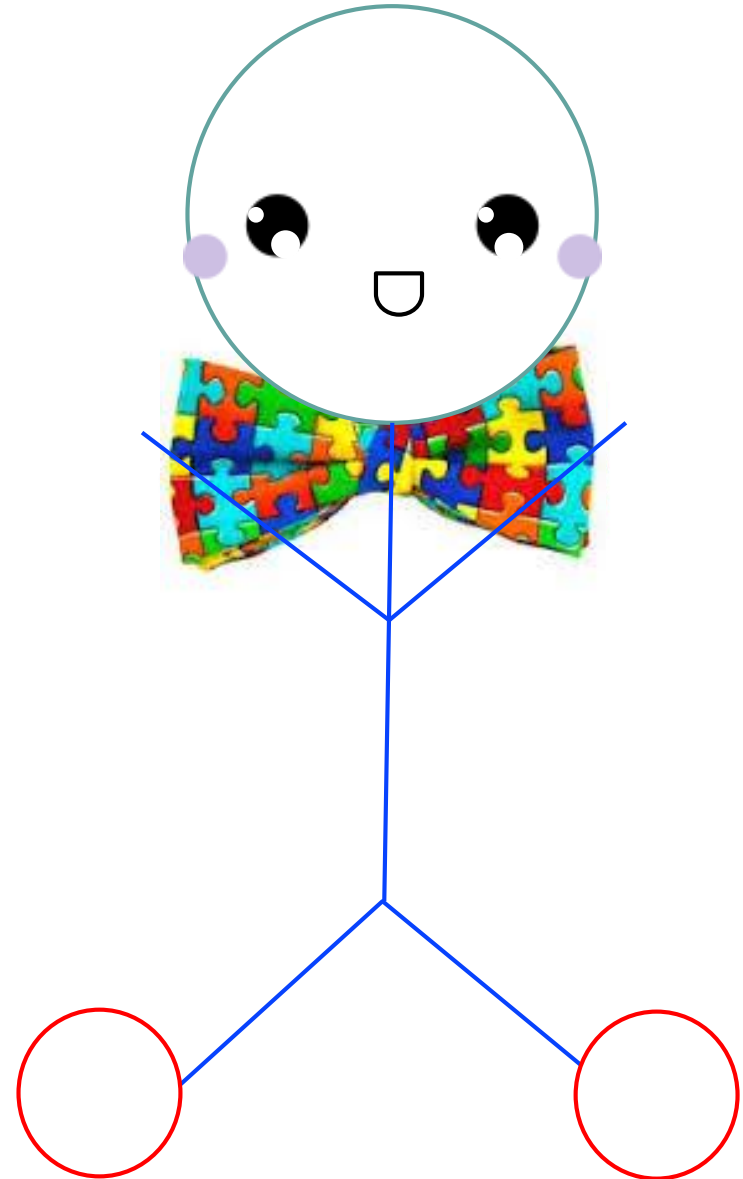


```
<!DOCTYPE html>
<html>
  <head>
    <title> ... </title>
    <meta charset="utf-8/">
  </head>
  <body>
    <h1> ... </h1>
    <div> ... </div>
    <div> ... </div>
  </body>
  <footer>
    <p> ... </p>
  </footer>
</html>
```

Or Do You?

CSS

- Cascading Style Sheets
- Adds 'style' to your HTML page
- Can switch out different CSS sheets for the same page



Purpose of CSS

- CSS describes the layout of the page, whereas HTML describes the content

```
<head>  
  <title>Blog post</title>  
  <link rel="stylesheet" type="text/css" href="example.css" />  
</head>
```

CSS basic syntax

- Files consist of one or more rules
- In a rule, select HTML elements you want to style and then set the style properties within the rule
- Syntax is important

```
selector {  
    property: value;  
    property: value;  
    ...  
    property: value;  
}
```

Essential CSS Tool Kit

- Text
- Border
- Background

An example

```
body {  
    background-color: #A2B964;  
    font-family: Arial, Helvetica, sans-serif;  
}  
  
img {  
    height: 100px;  
    width: 100px;  
    border: 2px solid black;  
    border-radius: 100%;  
}
```

More on color

- You can select more basic colors like blue, green, and red by typing their name, but you can also select hexadecimal values for more complex colors
- Visit http://www.w3schools.com/tags/ref_colorpicker.asp to easily find the hexadecimal value that matches the color you want (or google “html css color picker”)



HEX COLOR CODES

#000000
RED GRN BLU

HEXADECIMAL NUMBERS		EXAMPLES	
Red Value:	First 2 Digits	#FF0000	Pure Red
Green Value:	2nd 2 Digits	#6600FF	Purple
Blue Value:	Last 2 Digits	#888888	Light Gray
Range:	0-9 & A - F	#4B78B5	Medium Blue
Higher Values:	Light Colors	#00CD1D	Light Green
Lower Values:	Dark Colors	#FF5500	Orange
		#FFCC00	Yellow

background-color

- Change the color of the background of the specified element

```
body {  
    background-color: #A2B964;  
}
```



font-family

- Change the font of the text in the element selected
- If the browser can't display the first font described, it will move on to the next one
- Extra fonts on Google fonts!

```
body {  
    font-family: Arial, Helvetica, sans-serif;  
}
```


height and width

- Resize the selected element

```
img {  
    height: 100px;  
    width: 100px;  
}
```

border

- Change the border of the selected element
- Takes a border size (1px, 5px, etc.), border style (solid, dotted, etc.), and border color (black, #ABC123, etc.)

```
img {  
    border: 2px solid black;  
}
```

border

- Many related properties, like border radius
- This makes the border a more circular shape

```
img {  
    border: 2px solid black;  
    border-radius: 100%;  
}
```

Many more properties

- Many kinds of styles
- Most are found by googling around
- We'll stick to the basics for today

CSS Properties
align-content
align-items
align-self
all
animation
animation-delay
animation-direction
animation-duration
animation-fill-mode
animation-iteration-count
animation-name
animation-play-state
animation-timing-function
backface-visibility
background
background-attachment
background-blend-mode
background-clip
background-color
background-image
background-origin
background-position

color
opacity
Background and Bo
Property
background
background-attachment
background-blend-mode
background-color
background-image
background-position
background-repeat
background-clip
background-origin
background-size
border

... w3schools.org/cssref

Some Web Inspirations

- [Mario-style resume](#)
- [Agar.io](#)
- [LOLMyThesis](#)
- [Solve the Riddle](#)
- [Madeon Adventure Machine](#) (music maker)
- [Adobe Color Picker](#) (great for CSS reference!)
- [Interactive Music Video](#)
- [Smarty Pins Google Map Trivia](#)

Additional Resources

- [Codecademy](#)
- [Codepen](#)
- [Dabblet](#)
- [Google Fonts](#)
- [Code.org](#)
- [CSS Color-Picker](#)
- [W3School](#)
- [Text Editor: Notepad++](#) (for making HTML & CSS documents)

Now It's Your Turn!

- You get to make your own profile!
- Steps:
 1. Start with an HTML page
 - i. Make sure to test your page as you add elements – this is great debugging practice!
 - ii. Start with `<head></head>`, then `<body></body>` and finally `<footer></footer>` sections
 - iii. It's ok if it looks a little meshed at first. That's what CSS is for!
 2. Now make a CSS file. Use your cheat sheet and the online resources for inspiration!