Browse and Build





Virtual Camp 2021

Getting to know you! Cameras on!

What is your name?
What grade are you going into?
What is your favorite color?

Resources used in class

- 1. Notepad++ Editor used in class to create and edit HTML, CSS and JavaScript files
- 2. W3Schools.com HTML, CSS and JavaScript tutorials, code samples, try it editor, color wheel etc.
- 3. Collabedit.com Used to share code with students so they didn't have to type it themselves
- 4. Pixabay.com Royalty free image library
- 5. Weebly
 - a. https://education.weebly.com/ Teacher login page.
 - b. http://students.weebly.com/ Student login page
 - i. Username: firstname-lastname
 - ii. Password: ninja123

Day 1 - Getting Started on the Web

Web Concepts - Terms to know

- Website
 - Collection of web pages
- WWW World Wide Web
 - Way to access information on the internet
- Web browser
 - Used to view a website on the internet e.g. Chrome, Safari, Internet Explorer, Microsoft Edge, Firefox and more.
- HTML Hyper Text Markup Language
 - Simple language used to write code for the web
 - Just text that can be written in notepad
- CSS & JavaScript
 - More advanced languages to make websites cool
 - More on these later in the camp...

HTML

Hyper Text Markup Language

```
href="home-events.html">Home Events
href="multi-col-menu.html">hultiple Col
 class="has-children"> <a href="#" class="curr
      < Li><a href="tall-button-header.html">Tall Button Header</a>

<ii><a href="image-logo.html">Image Logo</a>

<ii class="active"><a href="tall-logo.html">Tall Logo Image

    lass="has-children"> <a href="#">Carousels</a>
             ► href="variable-width-slider.html">Variable Image Wi
                 href="testimonial-slider.html">Testimonial Slider
                  href="featured-work-slider.html">Featured Work Slider.html">Featured Work Slider.html
                  href="equal-column-slider.html">Equal Column Slider.html">Equal Column Slider.html
                  href="video-slider.html">Video Slider</e>
              href="mini-bootstrap-carousel.html">Mini Slider
```

HTML Versions

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014

Image Credit: W3 Schools

HTML Concepts - Building blocks of a website

- **Elements -** HTML consists of a series of elements
 - Building blocks of all web pages
 - Tell the browser how to display the content
- Tags HTML elements are represented by tags
 - Text surrounded by angle brackets < >
 - Browsers do not display the HTML tags, but use them to render the content of the page
 - Most come in pairs
 - Start and end tags
 - End tags have a forward slash

Element is everything from start to end tag

E.g. This is a paragraph

HTML Concepts - Tags

Doctype - Type of document (HTML5)

```
<!DOCTYPE html>
```

Html - HTML content

```
<html> and </html>
```

Head - Heading section

```
<head> and </head>
```

• **Title** - Title of the webpage

```
<title>My first Webpage</title>
```

```
<!DOCTYPE html> \( \) Type of document

<html> \( +\) HTML document

<head>

<title>My first Webpag </title> \( +\) Title

</head>

</html>
```

HTML Concepts - Body Tags

- Body
 - Contains visible content on a webpage
 - o <body> </body>
- Headings
 - o h1 h6
 - <h1> </h1> ... <h6> </h6>
- Paragraph
 - ○

```
<!DOCTYPE html> ← Type of document
<html> ← HTML document
<body> ← Body
<h1>
              </h1> ← Heading
>
               \leftarrow Paragraph
</body>
</html>
```

Headings: <h1> - <h6>

This is heading 1

This is heading 2

This is heading 3

This is heading 4

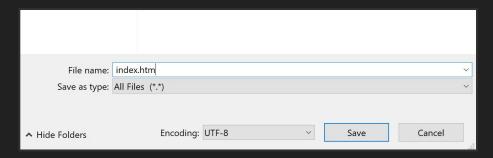
This is heading 5

This is heading 6

Our First Webpage - Step by Step Instructions

- 1. Open Notepad
- 2. File ->Save As...
 - Use filename index.htm
 - Save as type All Files
 - Encoding UTF-8

- 3. Write HTML
- 4. Save
- 5. View webpage (using Chrome)



Our First Webpage - Getting started...

- Find Browse and Build folder on desktop
- 2. Find and Open folder with your name
- 3. Open index.htm with Notepad++
- 4. Locate the following keys on the keyboard
 - Angle brackets used for tags
 - **-** <
 - **-** >
 - Forward slash used to close tags
 - o Exclamation used for comments etc.

Let's build! - Use what you learned so far

- 1. Add the following to your personal website
 - Title and Header
 - Your First Name + Webpage
 - Body
 - Headings
 - Your First Name and Last Initial
 - Paragraph
 - List three facts about yourself

See sample on the right. ====>

```
<title>Shivani C Webpage</title>
    <h1>Shivani C</h1>
    I am an engineer.
      My favorite color is fushia.∢p
```

More HTML Tags

Day 1 Part 2

HTML Concepts - Formatting text

- Bold text
- Important text
- <i> Italic text
- Emphasized text

Activity - Apply some of these to your webpage

HTML Concepts - Images

```
<img src="dexter.jpg" alt="Dexter the Dog"
width="350" height="400">
```

HTML Concepts - Links

```
<a href="https://www.google.com">
Link to Google
</a>
```

HTML Concepts - Buttons

<button>Click me

Buttons and Links Combined

```
<button>
<a href="https://www.google.com">
Click me
</button>
```

Let's show off!

Let's see what you build. Show your work to your classmates and senseis.

Finished Code Sample

17 </html>

```
🔚 index1.htm 🔣
  1 <!DOCTYPE html>
 3 | <title>Shivani C Webpage</title>
 4 |<body>
 5
   <h1>Shivani C</h1>
  7 <strong>I love teaching kids to code. </strong>
 8 I am an <em>engineer.</em>
    My favorite color is <b>fushia.</b>
   I have a dog named <i>Dexter.</i>
11
    <img src="dog.ipg" alt="dog image" height="400" width="600" >
13
   <button><a href="https://www.w3schools.com">Click Me</button>
15
16 </body>
```

Day 2

HTML Cont. & Introduction to CSS

```
41-10013-->
*lank rel* shortcut icon href* /favicon.ico type*image/s-tcm*
      *limit rel "icon" href="/favicon.ico" type="image/x-icon"
            type "text/css" rel="stylesheet" brefs"css/materialize and con mean communications and continue 
              rel="stylesheet" href="https://naxxdn.bootstrapdn.com/funt persons t limited by the stylesheet" href="https://naxxdn.bootstrapdn.com/funt persons t limited by the stylesheet by th
                  clink rel stylesheet href='(css/animate.css')
                    "link rele stylesheet" href="css/theme.css">
                                        «div class» banner >
                                                                                                              come classe nav. >
                                                                            edix class= nav-mrapper >
                                                                                              «div class container">
```

Day 1 Review

HTML pages are made up of elements, which are created using tags

- HTML tag, head tag, body tag
- Headers and paragraphs
- Formatting text (bold and italic)
- Images
- Links
- Background color, font color, border color
- Comments

View Source of a Web Page

- Browse to a website e.g. Google.com
- 2. Right click anywhere on the page
- 3. Click "View page source" or Ctrl+U



HTML Concepts - Comments

- Used to help others/you understand your code
- Can be helpful to find bugs in your code by hiding HTML code

```
<!-- This is a comment -->
```

```
<!-- Do not display this image at the moment
<img border="0" src="pic_trulli.jpg" alt="Trulli">
-->
```

HTML Concepts - Colors

Colors can be defined in a few ways:

- Color Name
 Red, Violet, MediumSeaGreen
- RGB Red, Green, Blue

```
rgb(255, 0, 0) rgb(238, 130, 238) rgb(60, 179, 113)
```

Hex

```
#ff0000#ee82ee#3cb371
```

And a few more..

HTML Colors - What can you color?

Background Color

Hello World

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
Lorem ipsum...
```

Text Color

More colors

Borders

Hello World Hello World

Hello World

Example

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
<h1 style="border:2px solid Violet;">Hello World</h1></h1></h1>
```

HTML Concepts - Lists

Ordered e.g. numbered 1,2,3

```
     Coffee
     Tea
     Milk
```

• Unordered e.g. bullets

```
     <!i>Coffee</!i>
     <!i>Tea</!i>
     <!i>Milk</!i>
```

Putting it together

Add the following to your webpage (index.htm):

1. Colors

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
Lorem ipsum...
<h1 style="color:Tomato;">Hello World</h1>
This paragraph contains..
```

2. List

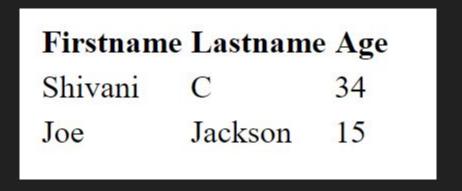
HTML Tables

- Tags used to define table
 - Table

 - Table Heading
 - Bold and Centered
 - Table Data/Cell
 - Can contain all kinds of HTML elements e.g. text, images, lists, other tables etc.
- By default table doesn't have a border

HTML Table - Code Example

```
th>Firstname
Lastname
Age
Shivani
C
34
Joe
Jackson
15
```



Day 2 - Part 2 css Cascading Style Sheet

Places to visit in Ninjaburg

Check out these great places the next time you pay a visit to beautiful Ninjaburg!

- · The Dojo
- · Ninja-Mart
- City Hall
- · Traditional Gardens
- Throwing-Star Bucks
- · The Hidden Opera House

VS



CSS Basics - What is it?

- CSS Cascading Style Sheet.
 - Used to define the layout/style of a HTML document
 - Code once and use everywhere on a website
 - Provides consistent look
 - Control layout of multiple pages all at once!
 - Saves time

Site without CSS

What's the Deal With CSS?

Click on the buttons to try different styles

- · Style 1
- Style 2
- Style 3
- No style

The Content is Always the Same

Even though each page looks dramatically different, the actual HTML stays exactly the same. The only difference are the different CSS styles: Style 1 Style 2 Style 3

Without CSS

By using tags, styles for look, size, and layout for each section can be made. If you want to see what this looks like without CSS, click here: No style

Did You Know?

CSS is short for "Cascading Style Sheets." HTML controls the content of a web page while CSS gives you lots of options for the look.

Many web pages put important information concerning contact information, support and privacy down here.

CSS - One site, 3 Looks

What's the Deal With CSS?

Click on the buttons to try different styles

Style 1 Style 2 Style 3

No style

The Content is Always the Same

Even though each page looks dramatically different, the actual HTML stays exactly the same. The only difference are the different CSS styles: Style 1 Style 2 Style 3

Without CSS

By using tags, styles for look, size, and layout for each section can be made. If you want to see what this looks like without CSS, click here:

No style

Did You Know?

CSS is short for "Cascading Style Sheets." HTML controls the content of a web page while CSS gives you lots of options for the look.

Many web pages put important information concerning contact information, support and privacy down here.

What's the Deal With CSS?

Click on the buttons to try different styles

Style 1 Style 2 Style 3 No style

The Content is Always the Same

Even though each page looks dramatically different, the actual HTML stays exactly the same. The only difference are the different CSS styles: Style 1 Style 2 Style 3

Without CSS

By using tags, styles for look, size, and layout for each section can be made. If you want to see what this looks like without CSS, click here:

Did You Know?

CSS is short for "Cascading Style Sheets." HTML controls the content of a web page while CSS gives you lots of options for the look.

Many web pages put important information concerning contact information, support and privacy down here.

What's the Deal With CSS?

Click on the buttons to try different styles

The Content is Always the Same

Even though each page looks dramatically different, the actual HTML stays exactly the same. The only difference are the different CSS styles: Style 1 Style 2 Style 3

Without CSS

By using tags, styles for look, size, and layout for each section can be made. If you want to see what this looks like without CSS, click here:

No style

Style 3 No style

Style 1

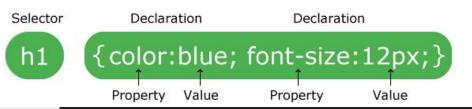
Style 2

Did You Know?

CSS is short for "Cascading Style Sheets." HTML controls the content of a web page while CSS gives you lots of options for the look.

Many web pages put important information concerning contact information, support and privacy down here.

CSS - What does it look like?



CSS Backgrounds

- Defines background effects for elements
- CSS background properties:
 - Background-color

```
body {
  background-color: lightgray;
}
```

background-image

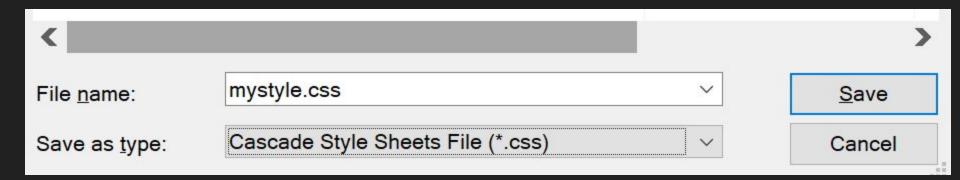
```
body {
  background-image: url("dog.jpg");
}
```

Adding CSS to a Webpage

- Placement of CSS
 - Within HTML document
 - External file (.css) Recommended!

Let's Code! - Step by Step Instructions for CSS

- 1. Create a new file in Notepad++
- 2. File-> Save As...
 - File name: mystyle
 - Save as type: Cascade Style Sheets File (*.css)



Let's Build - Add CSS to your Webpage

3. Add code to <head> section of your day2.htm.

4. Add code to the newly created css file mystyle.css

```
body {
background-color: lightblue;
}

margin-left: 30px;
}
```

Let's Build - Add CSS to your Webpage

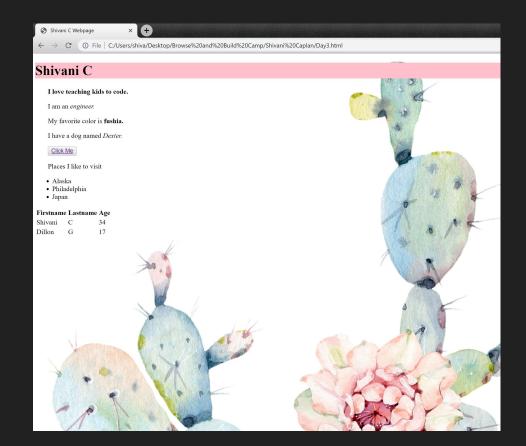
3. Add style code to <head> section of your html page.

```
<head>
<style>
body {
    background-color:lightblue;
}
p {
    margin-left: 30px;
}
</style>
</head>
```

Let's show off!

Let's see what you build.

Show your work to your classmates and senseis.



Completed Code Sample

```
body{
background-image:url("cactus.png");

margin-left:30px;
}
```

mystyle.css

```
<!DOCTYPE html>
  <html>
 =<head>
     k rel="stylesheet"
     type="text/css"
     href="mystyle.css">
     </head>
  <title>Shivani C Webpage</title>
 =<body>
  <!--July 23 2019 -->
  <h1 style="background-color:pink;">Shivani C</h1>
  <strong>I love teaching kids to code. </strong>
  I am an <em>engineer.</em>
  My favorite color is <b>fushia.</b>
  I have a dog named <i>Dexter.</i>
  <!--<img srg="dog.jpg" alt="dog image" height="400" width="600" >-->
 cp><button><a href="https://www.w3schools.com">Click Me</a></button>
  Places I like to visit
     <111)>
     Alaska 
     Philadelphia 
     Japan 
     ) d
   Firstname
     Lastname
     Age
    Shivani
     C
     34
    Dillon
     G
     17
    6 
  </body>
  </html>
```

Day 3

More HTML and CSS



Day 2 Recap - HTML

HTML Concepts covered

- Comments
- Colors
- Lists
- Tables

Day 2 Recap - CSS

CSS - Cascading Style Sheets

- Helps us define the layout/appearance of a web page.
- Saves time by applying consistent style to a HTML element with a couple lines of code.
- Add style inline in html file or in .css file (recommended)

```
<style>
body{
background-color: lightblue;
}
h1{
background-color:DeepPink;
}
</style>
```

CSS Concept - Comments

```
p {
  color: red;
  /* This is a single-line comment */
  text-align: center;
}
```

```
/* This is
a multi-line
comment */
```

CSS Concept - Selectors

- Used to find HTML element based on the following:
 - Name e.g. to add margin to all paragraph elements on our webpage

```
    ID
    Class
    More...
4
5    pp{
        margin-left:30px;
        More...
```

HTML Concept - id Attribute

- Specifies a **unique** name for a HTML element
 - Can't use the same name twice

E.g. Heading 2 below has a name called "city"

```
<h2 id="city">Bellevue</h2>
```

Used in CSS and JavaScript to perform certain tasks. More on this shortly...

CSS id Selector

- Uses id attribute of an HTML element to find the element on an HTML page
- To select an element with a specified id, use hash (#) character followed by the id name
- E.g. to select the element with id="name", use the following code

```
8
9 #name{
    color:blue;
    text-align:center;
}
```

Let's code!

1. Add a multiline comment to the top of CSS file

```
|/*Shivani's Style
|July 24 2019
|*/
|body{
| background-image:url("cactus.png");
|}
```

2. Add an id to a HTML element e.g. h1

```
<h1 id="name" style="background-color:pink;">Shivani C</h1>
```

3. Add a new style for #2. in .css file

```
12 =#name{
13     color:blue;
14     text-align:center;
15 }
```

Images

• To use an image as a link, put the tag inside the <a> tag:

```
<a href="default.asp">
    <img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;">
    </a>
```

Use the CSS float property to let the image float to the right or to the left of a text:

Float the image to the right:

A paragraph with a floating image. A paragraph with a floating image. A paragraph with a floating image.



```
<img src="smiley.gif" alt="Smiley face" style="float:right;width:42px;height:42px;">
The image will float to the right of the text.
```

CSS Table

FirstnameLastnameAgeShivaniC34DillonG17

- We can use CSS to make our table fancy.
 - Table borders
 - Use the border property

```
table, th, td {
  border: 1px solid black;
}
```

Table Color

```
th {
  background-color: #4CAF50;
  color: white;
}
```

Hoverable Table

```
tr:hover {background-color: #f5f5f5;}
```

https://www.w3schools.com/css/css_table.asp

HTML Videos

Easiest way to add videos to your site is to use YouTube videos.

```
<iframe width="420" height="315"
src="https://www.youtube.com/embed/tgbNymZ7vqY">
</iframe>
```

Other Link Formatting

```
a:link{
a:visited{
a:hover{
a:active{
/*must be in this order*/
```

CSS Text Decoration Property

text-decoration: none;

/*no underline*/

text-decoration: underline;

/*underline*/

/*other common properties used with links include background-color and color

More Styles...

Background Repeat

If the background image is smaller than the element, the image will repeat itself, horizontally and vertically, until it reaches the end of the element. To avoid this, add background-repeat style.

```
<style>
body {
   background-image: url('example_img_girl.jpg');
   background-repeat: no-repeat;
}
</style>
```

Day 4

HTML and CSS
Design Tricks



Recap and Review

- HTML Lists
- HTML Tables
- CSS intro
- CSS selectors-- tag and id
- CSS comments
- CSS table styling
- CHALLENGE: table of links

HTML Grouping Tag - <div>

- Defines a division or a section of a web page
- Tags <div> </div>
- Often used with CSS to layout a web page.

```
57
    <h2>Places and Capital</h2>
58
59
    <div class="state">Pennsylvania </div>
60
    <div class="capital">The capital city is Harrisburg. </div>
61
62
    <div class="state">Alaska </div>
63
    <div class="capital">The capital city is Juneau. </div>
64
65
    <div class="state">Washington </div>
    <div class="capital">The capital city is Olympia. </div>
66
```

Let's Talk About Div Formatting

```
-Float (left)
-Sizing
div{
     float: left;
     width: 400px;
     border: 2px solid black;
```

HTML Concept - Class

- Grouping of similar elements
- Different types of elements can share the same class name e.g.
- Can be used with CSS to style elements in the same way

```
<h2 class="city">Paris</h2>
Paris is the capital of France
```

CSS class Selector



```
∃.state
   background-color: tomato;
   color: white;
   padding: 10px;
   font-size:20px;
□.city {
   background-color: black;
   color: white;
   padding: 20px;
```

Let's Work On Formatting with Divs

(Demo but you can make it how you want)

Navigation menus

- -Let's make another HTML page
- -Div tag with float and width/height set (demo)
- -Linking 2 HTML pages

Weebly

Create a free website

Create a Free Class Website

and let your students build sites too



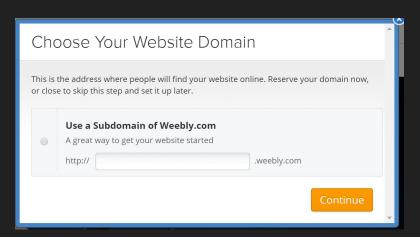
What can I do with Weebly?

- Easily create a classroom website & blog
- Manage your students' accounts
- Accept homework assignments online
- Keep your parents up to date

Weebly - Web Editor

Login to https://students.weebly.com/editor/

If prompted - create a subdomain (a url for your personal site e.g. shivanicaplan.weebly.com



Username: firstname-lastname

Password: cnstudents72219

If you created a subdomain for your website e.g. dextercaplan.weebly.com, use the password, **cnstudents72219** to login when visiting your published site.

Day 5 JavaScript (JS)

Advanced topic for making webpages interactive

```
$(window).on('resize', function(){cards();));
         var width = $(window).width();
 ▼ function cards(){
         if(width < 750){
              cardssmallscreen();
             cardsbigscreen();
46 4
          ]else{
   50
```

Day 3 & 4 Recap - CSS and HTML

HTML

- <div>
- Video (using iframe)
- Images
- Headers and paragraphs
- <hr> and

- Links and buttons
- Text formatting and link formatting

CSS

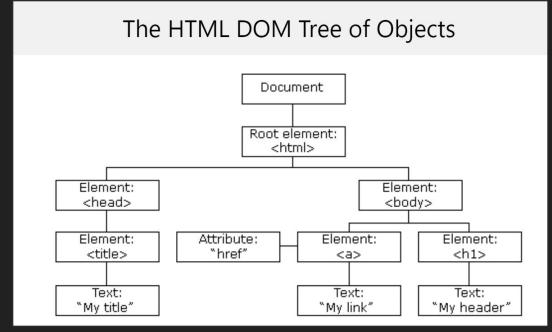
- Comments /* This is a comment*/
- Selectors
 - o name
 - \circ id
 - Class
- Table Style
 - Border
 - Color
 - Hover

Javascript Basics

- What is it?
 - Programming language for the web
 - HTML used to define what should be on the website
 - CSS used to specify how the website should look
 - JavaScript used to program how the website should behave
 - Also used in many desktop and server programs.

HTML Document Object Model (DOM)

When a browser loads a web page, it creates something called a Document
 Object Model of the page.



What to do with the DOM?

Get, Change, Add, Delete all the HTML elements in a web page

HTML DOM and JavaScript

- JavaScript can do the following with the help of the DOM
 - o Get, Change, Add, Delete all the HTML elements in a web page
 - E.g. Get/Read the text of a paragraph, Change a heading, Add a button
 - o Change all the HTML attributes in a web page e.g. color of the text
 - Change all the CSS styles in a web page

And more...

HTML DOM - Methods and Properties

- Methods Actions you can perform on HTML Elements e.g. etElementById()
- Properties Values you can set or change of an HTML Element e.g. innerHTML

```
<script>
document.getElementById("city").innerHTML =
"Bellevue";
</script>
```

HTML Events & JavaScript

- HTML Event is something the browser does or something the user does
 E.g. user clicks the button, browser loads the webpage
- JavaScript lets you execute code when events are detected

Common HTML Events

Here is a list of some common HTML events:

Event	Description
onchange	An HTML element has been changed
onclick	The user clicks an HTML element
onmouseover	The user moves the mouse over an HTML element
onmouseout	The user moves the mouse away from an HTML element
onkeydown	The user pushes a keyboard key
onload	The browser has finished loading the page

Javascript Events

 Events: Something a browser or user does e.g. when a page finishes loading or when a user clicks on a button

Syntax: <elementName eventName ="JavaScript eventResponse">

- The **elementName** is the tag that the event will be executed on e.g. button or img
- The eventName is the name of this event e.g. onclick, onload etc.
- The JavaScript eventResponse represents the action that you want to happen in response to the eventName e.g. calling a function

Let's Code in JavaScript!

Adding Javascript to a Webpage

- Tags
 - < <script> and </script>
- Placement of script
 - Head -> This is what we will do in class
 - Body
 - External file (.js)

JavaScript Example - Script in <head>

Add a paragraph with id city

Add the code below in <head> section of your html page

```
<script>
//This function will add City of Bellevue to my webpage.
 function myFunction() {
  document.getElementById("city").innerHTML = "Bellevue";
  document.getElementById("city").style.color = "blue";
</script>
```

Add the code below to the <body> section of your html page 3.

```
<button type="button" onclick="myFunction()"> Click me
```

JavaScript Example - Script in <head>

```
<!DOCTYPE html>
<html>
<head>
    <script>
    function myFunction() {
      document.getElementById("demo").innerHTML = "Paragraph changed.";
    </script>
</head>
<body>
<h1>A Web Page</h1>
A Paragraph
<button type="button" onclick="myFunction()">Try it</button>
</body>
</html>
```

Day 5 - Part 2

Continue working in Weebly



Website vs. Webpage

Website

Collection of web pages, styles and scripts

• Example from camp

- o index.html
- favorite.html
- mystyle.css
- myScript.js

Learn at Home Resources



W3schools.com

World's largest web developer site

Javascript tutorial - https://www.w3schools.com/js HTML tutorial - https://www.w3schools.com/html CSS tutorial - https://www.w3schools.com/css/



Free Website builder using drag and drop interface

https://students.weebly.com/

Password: ninja123



The Magazine for Kids, Code and Computer Science https://www.kidscodecs.com/html-coding-for-beginners/



Learn to code and help nonprofits https://www.freecodecamp.org/