Session 1: WHAT'S IN A WEBSITE?

HTML

HyperText Markup Language **(HTML)** is the coding language that we use so that our browser can understand and display the website. Common examples of a browser include Chrome, Firefox, Safari, or Microsoft Edge. Everything on our website, and all websites for that matter, will live within **HTML** *elements*. **Elements** are pieces of this language that *describe* everything we want on our web page.

CSS

Cascading StyleSheets **(CSS)** allow us to set the styles (colors, text fonts, background, and more) for our website, making it as attractive and as easy to use for visitors as possible. **CSS** can also help us lay out our **HTML elements** (the pieces that make up our website) on the page. The user experience for every website is super important, and **CSS** helps us in achieving that.

IMAGES

Many websites will include images to help visitors understand their content or to make the website more visually appealing. Images are added as an **HTML element** and can be styled (their size and layout on the page) with **CSS**. To use an image you find online using something like Google Image search, right click on the image and select "Copy Image Address" (NOT "Copy Image") and paste the copied URL into the appropriate element in your **HTML** (see code examples).

JAVASCRIPT

JavaScript is one of the many coding languages in Computer Science. A lot of websites use **JavaScript** to add actions to the page. For example, when you click a button and it *does something*, the button calls **JavaScript**. On the Girls Code Club website, Javascript is used to show/hide the session dates as well as determine which dates to show based on the chosen cohort. We will learn more about JavaScript later, so don't worry about it yet!

HOW WILL WE PRACTICE?

When we are first starting to learn how websites are built, we will use CodePen. You will be able to save your in-class work on our group page and show it to your friends and family by going to our Girls Code Club CodePen and finding your project. To log in to the GCC group account to practice at home, use the information on the next page.

CodePen: https://www.codepen.io
Girls Code Club CodePen: https://www.codepen.io/girlscodeclublancaster
Username: girlscodeclublancaster
Password: Girl$Rock!

(FOR GROWNUPS)

CodePen is a web-based HTML/CSS/JavaScript editor that allows the girls to practice their skills while seeing the results in real time. If they want to code at home, girls can make their own accounts – CodePen has a Free Plan that does not require a credit card or any identifying information beyond a valid email address. Create an account here: https://www.codepen.io/signup/ and scroll down to the Free Plan option. The girls will be allowed to use personal accounts during our sessions, but are not required to have one. GCC has an account that all girls may use for learning and showing off their new skills!

HTML & CSS: A METAPHOR

Let's pretend our **website** is a home.

Our **HTML** is what makes up the home – walls, floors, doors, windows, things on the walls, and furniture. Without **HTML**, we would have nothing in our home.

Our **CSS** is what *styles* the home – the paint on the walls, the colors of the art on the walls, and the pattern on the couch. Without **CSS**, we would have a home full of very boring stuff!

We build our HTML using a *nested* group of *elements*, which you can think of as the same way a house is a nested group of items.

IN HTML WORLD	IN REAL WORLD

`<html>`
  `<body>`
    `<p>Boring couch</p>`
    `<p>Boring chair</p>`
    `<ul>`
      `<li>Some boring picture frame</li>`
      `<li>Another boring picture frame</li>`
      `<li>Last boring picture frame</li>`
    `</ul>`
  `</body>`
`</html>`
	The property our house sits in
	The outside walls of our house
	Piece of furniture – a couch
	Piece of furniture – a chair
	Collage of art on a wall
	   • First picture
	   • Second picture
	   • Third picture
	Done with the collage of art
	Done with the outside walls
	Done with the property outside

Notice that every element has a closing tag – examples:
**<html> and </html>   <body> and </body>   <p> and </p>   and **
** and **

We always need closing tags to tell our HTML that we are closing the group of elements inside. Much like the front door to your house, if you open the door you have to close it.

Now, let's style the things we put in our house with some CSS. What if we want all the walls in our house to be blue? (example on the next page)

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

What if we want our couch and chair to be *gigantic* and *green*?

```
p {
   font-size: 36px;
   color: green;
}
```

What if we want our chair to be *small*, *thick,* and *pink*?

```
li {
   font-size: 10px;
   color: pink;
   font-weight: 800;
}
```

UL? LI? IMG? What do these HTML elements stand for, anyway?

<h1></h1>
Header – you want only one of these on a website because it will contain your biggest and most important text. This is like a very loud person that you hire to stand inside your house and yell "HELLO!!!" to anyone who visits, or the title on the cover of your favorite book.

<h2></h2>
Header – this is another kind of header, a lot like the <h1></h1> tag we discussed above. The larger the number in your header tag, the smaller the text is inside. This is like the chapter titles in your favorite book – they are still large, but are a little smaller than the title on the cover. Headers are used to organize information on the page and remind you what you're reading.

<h6></h6>
Header – this is the smallest type of header that you can use on a web page.

<p></p>
Paragraph – this is where you want to put "normal" text. Our metaphor example used it to hold pieces of furniture as an example, since there are so many different pieces of furniture in a home.

Unordered List – this element holds a list of items that don't have any order. The list will show up with bullet points (large circles). Example:
- Emma
- Anna
- Lindsay

Ordered List – this element holds a list of ordered items, so everything inside of this tag will show up with numbers next to them (i.e. 1, 2, 3, 4, 5, etc.). Example:
1. First
2. Second
3. Third

List Item – these elements go inside a or element. Each thing you want in your list gets its own element.

<img></img>
Image – this element lets you add pictures to your website, using the src="" value to tell your website what picture you want to use.

<a>
Link – this element lets you link to another web page.

<div></div>
Div – this element lets you group things that are similar. The <div></div> tag is used mostly to group things that are similar in content or style. This is like a room in your house. The <body></body> tags are your actual house, while the <div></div> tags are your bedroom, the living room, and the kitchen. This way you can make your bedroom pink and the living room green. The whole house doesn't have to be the same color!

What colors can I use?

Option #1: Use regular color words.
There are some options built into **CSS** for colors (like "blue", "green", and "white" as used in earlier examples). Available color words:
- black, silver, gray, white
- green, olive, lime
- blue, teal, aqua, navy
- purple, fuschia, maroon
- red
- yellow

You can see the approximately 140 available color words here:
https://www.w3schools.com/colors/colors_names.asp

Option #2: Use hex color codes.
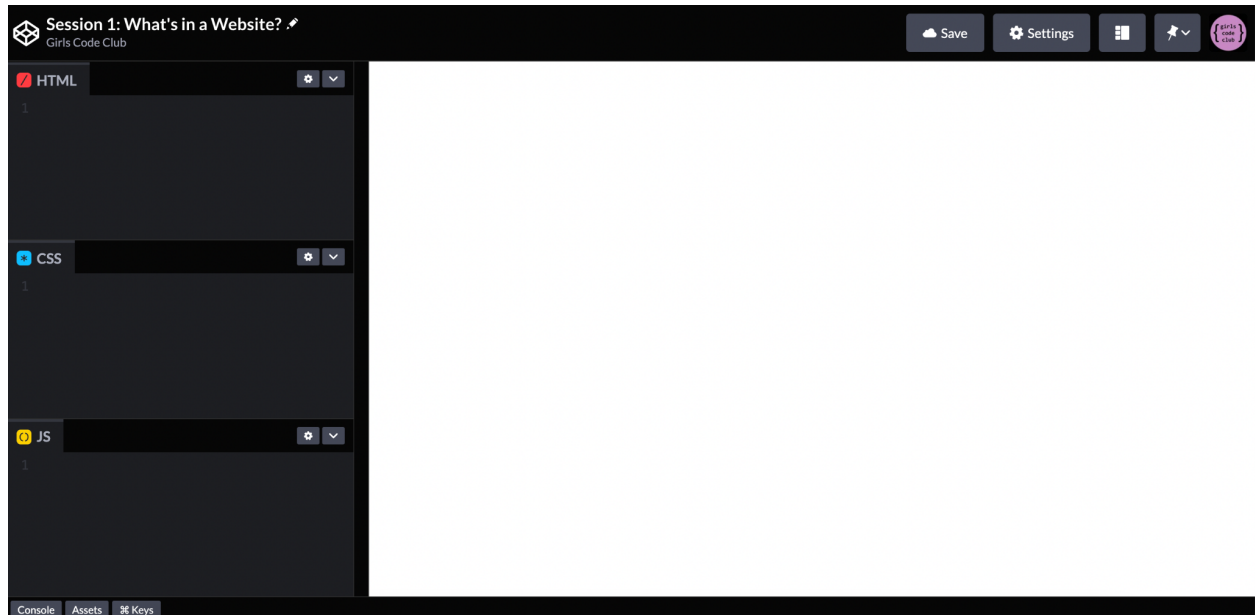If you want to choose the exact color you want, from an endless number of possibilities, use the color picker tool here: http://www.htmlcolorcodes.com
When you have narrowed down the color you want, copy the color code and use it in your CSS like this:

background-color: #A86DDC;

HTML – GETTING STARTED

Go to CodePen and click inside the "HTML" tab. This is the first tab on the left that says "HTML".
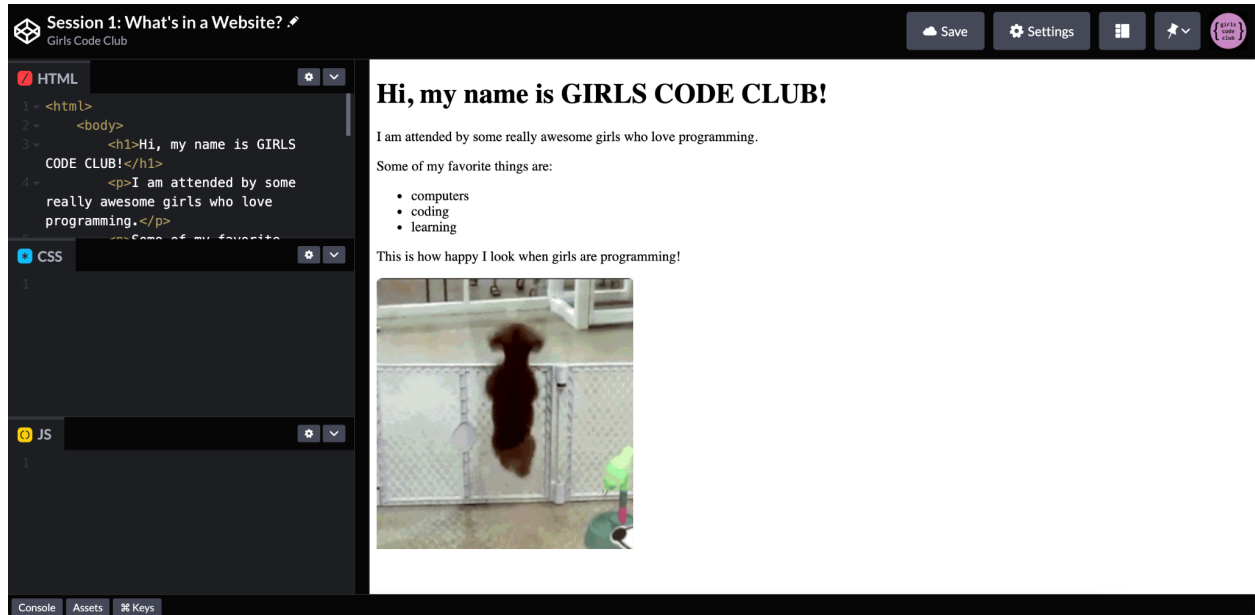

Type the code shown below inside the "HTML" tab. If you stop typing for a couple of seconds, your website will appear on the right!

```html
<html>
   <body>
      <h1>Hi, my name is GIRLS CODE CLUB!</h1>
      <p>I am attended by some really awesome girls who love programming.</p>
      <p>Some of my favorite things are:</p>
      <ul>
         <li>computers</li>
         <li>coding</li>
         <li>learning</li>
      </ul>
      <p>This is how happy I look when girls are programming!</p>
      <img src="https://media2.giphy.com/media/dudcZA9e14HIY/giphy.gif"></img>
   </body>
</html>
```

CSS – GETTING STARTED

Click inside the "CSS" tab in CodePen. This is the second tab on the left that says "CSS". If your HTML from earlier was typed correctly, your website should look like this:

Inside the "CSS" tab, type this code:

```
body {
    font-family: Courier New;
    background-color: #666699;
}
h1 {
    font-weight: bold;
    font-size: 40px;
}
p {
    font-size: 24px;
    color: white;
}
img {
    height: 150px;
}
```

What does the **CSS** above actually do? The styles applied to the <body></body> element change the font and background color for your whole web page. Your <h1></h1> element should now be **bolded** and large, and your <p></p> element should be small and white. The **CSS** added to your image makes sure that the image can't be any taller than 150 pixels.

Pixels are small blocks of color or space on a web page that make something much larger when combined! Think of sand on the beach. One piece of sand is so small that you almost can't see it, but when you combine all the pieces of sand you have a nice, relaxing beach to sit on.

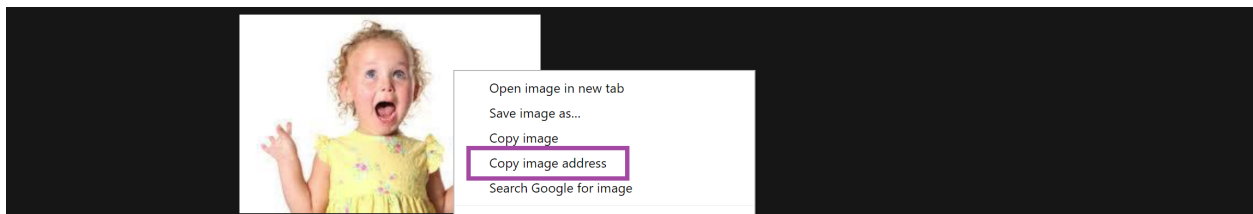## Some other things you can add to your CSS...
text-decoration: underline;
background-image: url("http://…");
border: 2px solid white;
text-align: center;

*Remember: if you find a picture online to add as a background or image, right click and use the "Copy Image Address" option to get the URL you need:

Other font-family options:
font-family: Arial Black;
font-family: Comic Sans MS;
font-family: Courier New;
font-family: Tahoma;
font-family: Times New Roman;
Font-family: Verdana;

Other border options:
border: 2px solid white;
border: 2px dashed white;
border: 2px dotted white;
border: 2px double white;

Other text-decoration options:
text-decoration: underline;
text-decoration: line-through;

Other text styling options:
text-shadow: 3px 2px gray;
text-align: left;

text-align: center;
text-align: right;

If you're ever looking to get even more creative with your CSS and want to explore ALL of the available options for styles, you can find them here: https://www.w3schools.com/css/default.asp

HTML – MAKE IT PERSONAL

Now that you have created your web page using our example code, make it fun! Use the ideas below to create a web page as awesome as you are. At the end of our session, you can show off your web page to the rest of the class.

- Change the background color to be your favorite color.
  - Hint: You'll want to change the **background-color** for your **<body></body>** tag.
  - Hint: If you chose a really dark color, you will want to make your header **white** so that you can see and read it.
  - Hint: If you chose a really light color, you will want to remove the **color: white;** style from all of your HTML elements.
- Change the <h1></h1> tag to include your name (replace GIRLS CODE CLUB with your name) or a nickname that you really like.
- Change the first paragraph to be a sentence about what makes you really happy.
  - Hint: paragraphs are in <p></p> tags.
- Tell us what your favorite things are! Change the text in the tags, and feel free to add more if 3 just isn't enough!
- Change the second paragraph to say: "This is my favorite food!"
- Find an image of your favorite food online, and use it to replace the jumping dog. If you need help spelling your favorite food, raise your hand! Our coaches are happy to help.
  - Hint: When you find an image you like, right-click the image and click "Copy Image Address". Put this URL as the **src** to your <img></img> tag.

HTML – BONUS

Have time? Add these to your page!
- Put tags around your name. Create a style in your **CSS** to underline any text in a tag.
- Add a border to your image.
- Change the color of your border (replace "white" with a different color).
- Change the *border-radius* of your image. You can make it a rounded square or a circle! The larger the radius, the rounder the image.
- Add emojis to your **HTML**. https://www.w3schools.com/charsets/ref_emoji.asp
- Pick a different font for your page.
- Add more details! You can tell us about your favorite time of year, favorite animal, include more images – this page is yours to customize.