The Web is made up of Hypertext
Most of this hypertext is written as HTML documents
Web browsers fetch HTML documents at particular URLs, and know how to interpret and display them
Let’s look at the HTML of a website!
  o go to apple.com
  o right-click -> inspect
Let’s write some HTML! This is typically done in a text editor
  ○ Can use TextEdit (Mac) or NotePad (Windows)
    ▪ (just make sure you are in plain-text mode)
  ○ If you have another that you prefer, you’re allowed to use it

Let’s create a new, super-simple HTML page
Changing Settings for HTML
HTML

1. Open up the text editor (must be plain-text mode) and create a new file
2. Put this HTML in it
3. Change the title
4. Save the file as index.html
5. Open this file up in the browser
   a. (double-click on the file)

```html
<!DOCTYPE html>
<html>
  <head>
    <title>test</title>
  </head>
  <body>
  </body>
</html>
```
<!DOCTYPE html>
<html>
<head>
  <title>My Title</title>
</head>
<body>
</body>
</html>
HTML

- To make it interesting, the page needs some content!
- All of the visible/displayed content goes in-between `<body>` and `</body>`
- For now, can just type some text!

```html
<!DOCTYPE html>
<html>
  <head>
    <title>test</title>
  </head>
  <body>
  </body>
</html>
```
To make it interesting, the page needs some content!

All of the visible/displayed content goes in-between `<body>` and `</body>`

For now, can just type some text!

```html
<!DOCTYPE html>
<html>
<head>
  <title>test</title>
</head>
<body>
  Hello World!!!
</body>
</html>
```
<!DOCTYPE html>
<html>
<head>
  <title>My Title</title>
</head>
<body>
  Hi there everyone!
</body>
</html>
HTML Tags

- HTML documents are built using a combination of nested **Tags**
- Tags are used to control what is displayed on a website, and how it is displayed
- Tags typically have a beginning (open) and end (close)

  `<tagName>  .  .  .  </tagName>`

- Tags “nest” inside of each other
HTML

html tag: all html content nests inside of this

head: title, non-visible information

body: content, text, images, etc

<!DOCTYPE html>
<html>
<head>
<title>test</title>
</head>
<body>
Hello World!!!
</body>
</html>
HTML Tags

• Within the `body` tag, there are many types of tags that text can be put inside
• For example, the header tags:

  `<h1> . . . </h1>`
  `<h2> . . . </h2>`
  `<h3> . . . </h3>`
  `<p> . . . </p>`
HTML Tags

- Place the following into the body section of your HTML page
- Put some text in each one
- What do you get?

```html
<h1> . . . </h1>
<h2> . . . </h2>
<h3> . . . </h3>
<p> . . . </p>
```
HTML Tags

```html
<!DOCTYPE html>
<html>
<head>
  <title>My Title</title>
</head>
<body>
  <h1>Very Large Text</h1>
  <h2>Large Text</h2>
  <h3>Medium Text</h3>
  <p>Hi there everyone!</p>
</body>
</html>
```
Many websites display images... How do we do so in HTML?

First, we need an image to display.

Find an image, and place it in the same directory as your html document (see picture for example).

Then, use `<img>` tag and the `src` attribute.

```
<img src="friday.jpg" alt="A funny meme" />
```
Add an image

- Search for any (PG) image online
- Download the image, put it in the same directory as your index.html file
- Use the img tag to display it on your page!
  - Fill in both **src** and **alt**

```html
<img src="friday.jpg" alt="A funny meme" />
```
<!DOCTYPE html>
<html>
<head>
  <title>My Title</title>
</head>
<body>
  <img src="friday.jpg" alt="Friday Meme" width="200px"/>
  <h1>Very Large Text</h1>
  <h2>Large Text</h2>
  <h3>Medium Text</h3>
  <p>Hi there everyone!</p>
</body>
</html>
HTML list tag

- Use the `<ul>` and `<li>` tags for creating lists
- `<ul>` = “Unordered List”
- `<li>` = “List Item”
- One or more list items can be nested inside of unordered lists

```
<h2>TODO list: </h2>

<ul>
  <li>Teach class </li>
  <li>Office Hours </li>
  <li>Grade homework </li>
  <li>Check email </li>
</ul>
```
Add a list

- Add a list of at least 3 elements to your website
- Use the `<ul>` and `<li>` tags
<!DOCTYPE html>
<html>
<head>
  <title>My Title</title>
</head>
<body>
  <img src="friday.jpg" alt="Friday Meme" width="200px" />
  <h1>Very Large Text</h1>
  <h2>Large Text</h2>
  <h3>Medium Text</h3>
  <p>The meme above contains</p>
  <ul>
    <li>Jim Carey</li>
    <li>The word "FRIDAY"</li>
    <li>A question-mark</li>
  </ul>
</body>
</html>
Linking to another page

- One key component of web-pages is that you can navigate from one to another by following *links*
- A *link* is a way to navigate from web page A to web page B
- There are actually a number of ways two sets of content can be linked together
- The simplest: The `<a>` tag
Linking to another page

- Create another html page, and place it in the same directory as `index.html`
- Use the `<a>` tag and the `href` attribute to reference the page
- Make sure to give the link a name (the text between the open and close of the tag)

```
<a href="sports.html">Sports Page</a>
```
Linking to another page

- Can also link to any other page with the `<a>` tag
- Not just ones on the same website
- To do so, just use the entire URL, including the protocol and www part, like so: `http://www.`

```html
<a href="http://www.google.com">Search on Google</a>
```
Add links to your site

- Add two links to external websites from your website
- Use the `<a>` tag, for example:

```html
<a href="http://www.google.com">Search on Google</a>
```
<body>
  <img src="friday.jpg" alt="Friday Meme" width="200px" />
  <h1>Very Large Text</h1>
  <h2>Large Text</h2>
  <h3>Medium Text</h3>
  <p>The meme above contains</p>
  <ul>
    <li>Jim Carey</li>
    <li>The word "FRIDAY"</li>
    <li>A question-mark</li>
  </ul>
  <a href="https://www.wikipedia.org/">Take me to Wikipedia!</a>
  <a href="http://benjdd.com/courses/cs101/spring-2018/">Take me to the class website!</a>
</body>
Page within a page!

- Can put a page within a page

```html
<iframe src="http://www.wikipedia.com" width="500" height="400"> </iframe>
```
CSS

- CSS (Cascading Style Sheet) can be used to change the style of your site
  - Control content with HTML
  - Control style with CSS
Applying CSS

Put your CSS in-between a `<style></style>` tag, within the `<head></head>` section.

Between `<style>` and `</style>` is where you write CSS.
Applying CSS

CSS settings for the `<body>` tag and (most) things within it:

Sets the (foreground) color, such as text, to a reddish color:

```
<head>
  <style>
    body {
      color: rgb(155, 20, 20);
      background-color: rgb(0, 200, 255);
    }
  </style>
</head>
```

Sets the background color to light-blue.
Applying CSS

CSS settings for the `<a></a>` tags

Set the color to black

```html
<head>
  <style>
    body {
      color: rgb(155, 20, 20);
      background-color: rgb(0, 200, 255);
    }
    a {
      color: rgb(0, 0, 0);
    }
  </style>
</head>
```
What will the site look like?

```html
<!DOCTYPE html>
<html>
<head>
    <title>My Title</title>
    <style>
        body {
            background-color: rgb(0, 100, 0);
            Color: rgb(255, 255, 255);
        }
        h1 {
            color: rgb(200, 100, 0);
        }
    </style>
</head>
<body>
    <img src="friday.jpg" alt="Friday Meme" width="200px" />
    <h1>Very Large Text</h1>
    <h2>Large Text</h2>
    <h3>Medium Text</h3>
    <p>The meme above contains</p>
    <ul>
        <li>Jim Carey</li>
        <li>The word "FRIDAY"</li>
        <li>A question-mark</li>
    </ul>
</body>
</html>
```
Very Large Text

Large Text

Medium Text

The meme above contains

- Jim Carey
- The word "FRIDAY"
- A question-mark
CSS Attributes

A few common attributes you need to know

- (Foreground/text) Color
  ```css
  color:rgb(155, 20, 20);
  ```
- Background Color
  ```css
  background-color:rgb(155, 20, 20);
  ```
- Font
  ```css
  font-family:Arial;
  ```
- Font-Size
  ```css
  font-size:16px;
  ```
- Width
  ```css
  width:20px;
  ```
- Height
  ```css
  height:50px;
  ```

There are many more than just these!
Fonts

- There are a number of “web-safe” fonts that should be supported without any special extra imports
  - [https://www.w3schools.com/cssref/css_websafe_fonts.asp](https://www.w3schools.com/cssref/css_websafe_fonts.asp)
- Can also use other fonts!
- For example, import some from Google
  - [https://fonts.google.com/](https://fonts.google.com/)
The Internet - Materials

● Required Materials
  ○ How to Build a Website (Web tutorial)
  ○ Building your first Webpage (Web tutorial)
  ○ https://fonts.google.com/