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!

- go to apple.com
- right-click -> inspect
HTML

- 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)

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

```html
<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:

  ```html
  <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>
```
HTML Tags

• We've seen these tags for adding text and specifying how it is displayed:

  <h1> . . . </h1>
  <h2> . . . </h2>
  <h3> . . . </h3>
  <p> . . . </p>

• Some tags don't repeat the tag name on the close, for example

  <img . . . >
HTML Attributes

• Attributes specify additional pieces of information for a tag
• Attributes are placed inside of the opening/closing tag
• Example attributes are
  o src: specifies a source file to be displayed
  o alt: specifies information about the src image in case the image cannot be displayed
• We'll see an example next
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 and alt attributes

```
<img src="friday.jpg" alt="A funny meme"/>
```
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 and alt attributes

```html
<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>
Add an image (understanding src and alt)

- See what happens if the image can't be displayed
- In your html file, misspell the image file name
  "fridayoops.jpg"
- Look to see how the web page is displayed

```
<img src="fridayoops.jpg" alt="A funny meme" />
```
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

```html
<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>
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 to link content. The simplest: The `<a>` tag (or anchor tag). The `<a>` tag uses the following attribute: **href** - specifies the filename or URL of the webpage.
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.`

```
<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>
```
<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://www2.cs.arizona.edu/classes/cs101/fall18/">Take me to the class website!</a>
Page within a page!

- Can put a page within a page

```html
<iframe src="http://www.wikipedia.com" width="500" height="400"> </iframe>
```
Web pages: Content and Style

- We have learned some HTML to specify the content of a simple webpage.
- We may also want to design the overall style and appearance of a webpage by specifying:
  - the background color
  - a specific font
  - etc.
- CSS (Cascading Style Sheet) specifies the style of your site.
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.

```html
<head>
    <style>
        ...
    </style>
</head>
```
Applying CSS

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

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

Sets the background color to light-blue
Applying CSS

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

Set the color to black

```
<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
  ○ html.com – simple HTML tutorial
  ○ https://fonts.google.com/