What is the Web

- Constant use doesn't tell you everything
    - Lightswitches don't teach electricity
- Originally used to share and link sci papers
    - "HyperText"
- Makes use of Internet
    - Web not the same as Internet
    - One kind of traffic
    - Cars aren't Roads
        - Even if most of the traffic

Web Page

A **Web Page** is an **HTML Document** (.html)

- HTML is a way of "marking" text
- A web page may **link** to other pages
- May also refer to other **assets** (files)
    - Images, video, fonts, CSS files, JS files, etc

Browser

A **web browser** is a program

- Can make **requests** from a **web server**
    - To get web pages or assets as a **response**
- Can **render** a web page
    - Providing visual output
    - NOT the raw HTML
    - Executes any **javascript** (JS) on the page
        - Or loaded by the page

Webserver

A program that **responds** to web **requests**

- Can **serve** (respond with) **static** assets (files)
- Can serve **dynamic assets**
    - responses created in the moment

HTTP (web) traffic is request-response

- Server cannot send except in response
- Later tech (Websockets) CAN violate this rule
    - But it all has to start from basic HTTP

Navigation

A browser can load a different page

- Navigation
- Triggered by user or program action
    - Ex: Click a link
    - Ex: Page loads different page after 10 seconds

Previous page is now gone

- Can navigate "back" to it
- But current page is new page

URLs

Every page and asset has a URL

- "address" of the asset
- URLs have many parts
    - protocol
    - port
    - domain
    - path
    - query string
    - hash fragment
- Some used by Internet, some by server

HTML

HTML (Hyper Text Markup Language)

- Provides **structure** to the text of the document
- Defines data about the text
- Does NOT directly define the appearance
    - Common mistake!
    - You CAN use HTML to make an appearance
        - But it ends up hard to use/change
        - Bad idea to try

Cascading Style Sheets (CSS)

CSS provides the rules for how web content LOOKS

- Appearance, visuals, **styling**
- Based on the *structure* of the document
    - Relies on semantic HTML for full benefit
- Completely different syntax from HTML
- Same CSS could apply to different HTML pages
- Same HTML page might have different CSS stylings
    - **https://csszengarden.com**

JavaScript (JS)

- **Javascript** is a programming language
  - No relationship to Java
  - Name was a marketing deal that fell through
  - Can be run on a computer with NodeJS
  - Usually runs **in the browser**, "on" a page
- Returned by a server, RUN by the browser
  - A different computer entirely
- Can see, read, and change the page HTML
- Can react to user or page actions
  - Click a link, a button, type a key, etc
- Provides **interactivity** beyond navigation

Accessibility (a11y)

- **a11y** because 11 letters between 'a' and 'y'
    - Programmers are lazy
- Often neglected in web efforts of the past
- But Web has grown in importance

a11y Benefits

- The benefits are wide
    - Not just blind, handicapped, etc
        - Though that should be enough
    - Also injuries, children, bouncy bus/train
    - Same solutions help new tech/programs
- Solutions not well known…yet
    - Demand is growing

a11y Technique

Much of web tech is already accessible!

- We devs just need not to break it
- Need to know what breaks it

Servers

A server can provide **dynamic pages**

- Beyond the scope of this class (see 6250)

A server can manage dynamic data

- JS on the web page can send/get data from server
  - While staying on the same HTML page
  - Can change the HTML, a little or a lot
- Also beyond this class (still 6250)
  - But we can add UI to provided **services**

SO MUCH!

- So many terms
- 3 different syntaxes

Getting into modern web dev is complex!

- We will focus on UI/UX
    - Still complex
- Recognize the goal of each concept
    - HTML to provide structured content
    - CSS to give visuals based on structure
    - JS to provide interactivity