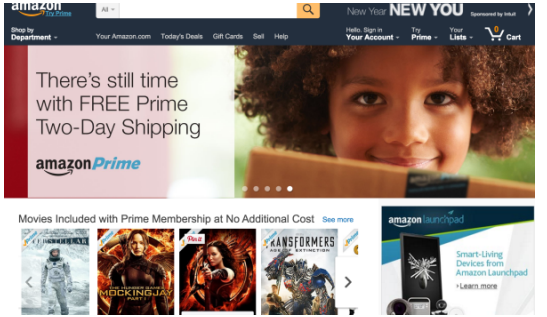
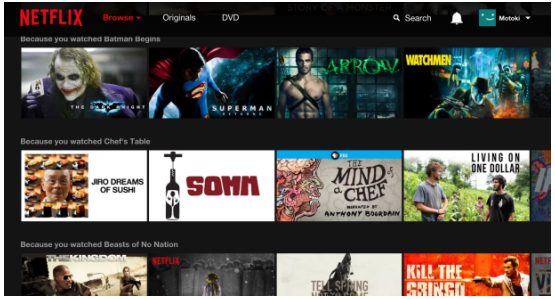
INTRO TO THE WEB

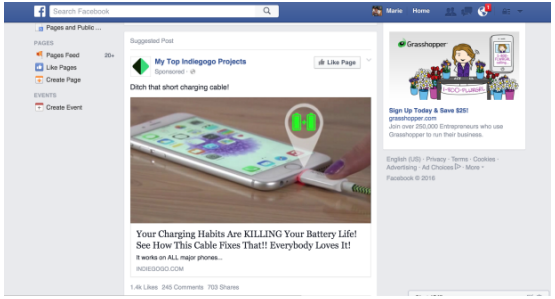
How the internet works

Lecture 1: Jan. 6 2016

What is the Internet?







How it began

1989

Tim Berners-Lee, a scientist at CERN, invented the World Wide Web.

The project was initially created to streamline distribution of information among scientists around the world

Berners-Lee devised the system of **hypertext** (or **links**)

The first website was dedicated to host information about the World Wide Web project itself

See more with a timeline on the birth of www

What languages are involved

3 essential technologies (front-end web development) determines what we see and interact with.

Content	Form	Behavior
HTML	CSS	Javascript
.html	.css	.js

Popular server-side languages (back-end web development) usually involves a server, an application, and a database, and concerns how the information is collected and stored. These are required for more robust websites, such as ecommerce platforms, or CMS (content management systems) like wordpress.

PHP	PYTHON	RUBY ON RAILS
.php	.py	.rb

How it works

A network of connected computers with the primary purpose to share information

Conversations between **clients** and **servers**

Web Client: Browser (Google Chrome, Firefox, Safari, etc..)

Web Server: Internet-connected computers running server software, serving web documents as requested.

Can be **remote** or **local**

Protocols

Standardized ways in which information can be passed from one computer to another (transfer of data & documents.)

Email (POP, SMTP, IMAP)

FTP (File Transfer Protocol)

HTTP (HyperText Transfer Protocol)

IP (Internet Protocol)

HTTP (Hypertext Transfer Protocol)

http://www.mywebsite.com

HTTP is the most common protocol for transferring web content from server to client on the world wide web (**www**)

https:// is used for secure connections, whenever information should be encrypted in transit

URLS often begin with “www” but should not be necessary if the server is properly configured

The web client, or browser, uses its **rendering engine** to translate marked up content (such as HTML, XML, image files, etc.) and formatting information (such as CSS, XSL, etc.) to what you see on the screen

IP (Internet Protocol) & DNS (Domain Name Server)

198.7.247.225

IP : Internet Protocol is a machine-readable specific identification number assigned to a device (computer, printer, etc) within a particular computer network.

google.com

DNS : The Domain Name Server provides the human-readable version of the IP, mapping domain names to IP addresses.

The URL (Uniform Resource Locator)

`http://risdweb16.motsuka.com/resources/`

Webpage can be identified either by URL (Uniform Resource Locator), containing the following:

An indication of the communication **protocol,** such as HTTP or HTTPS

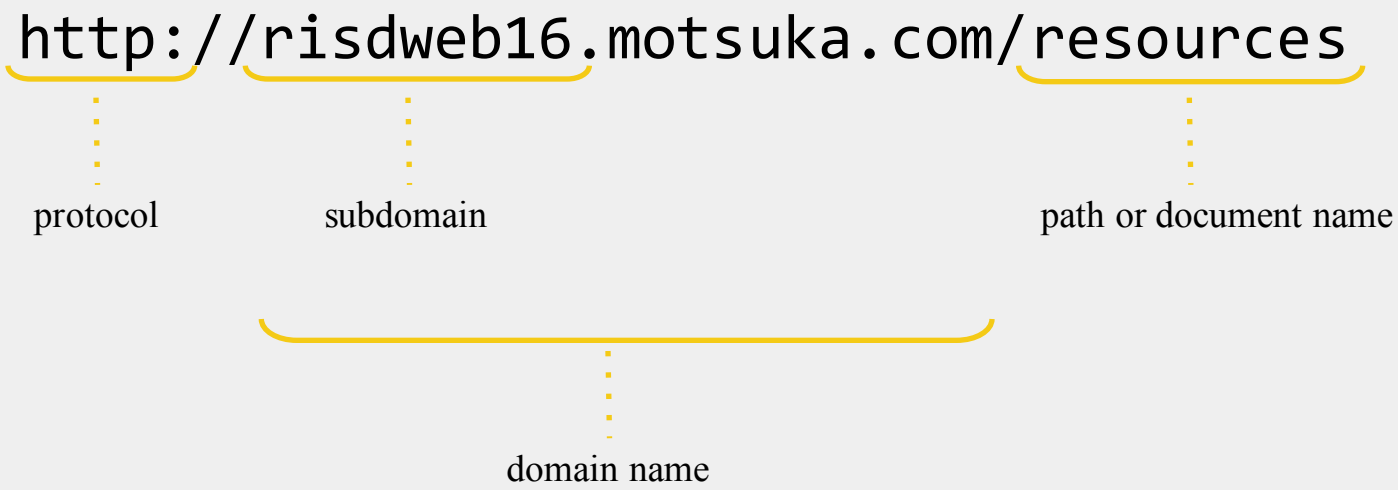
The **domain name** of the resource. There may be **subdomains** preceding the TLD (i.e. ".com" or top-level domain.)

The port number, indicating over which port the connection to the server should be attempted. By default this is 80 and is omitted in the URL (http://risdweb16.motsuka.com:**80**/resources/)

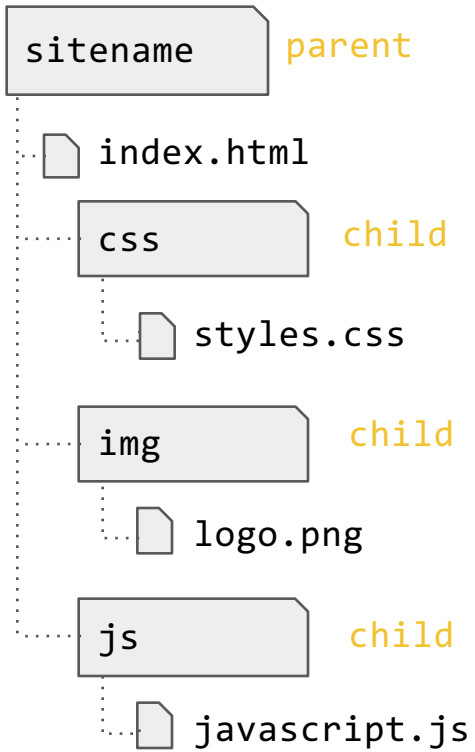
Any additional locating information, such as the **path** of the requested file, or any **query parameters**

Review

- The Internet is a collection of conversing servers
- The URL consists of the following:



Path Directories



/

/index.html

css/styles.css

img/logo.png

js/javascript.js

When building a website, it is best to organize your files into appropriate structures by using folders. Folders are also called directories, often referred to in **parent/children** relationships.

Root	top level folder
index.html	main homepage

File names: best practice to use lowercase, numbers, hyphens (-), underscores (_) and no spaces

Establish a consistent naming convention

Traversing Paths

You can reach a location in 2 ways:

Absolute Path: exact location (http://www…)

Relative Path: general directions used once you are in within a website

/ “down” or “forward” a directory

../ “up” or “back” a directory

Exercise 1:

File Organization & Path Navigation

See instructions