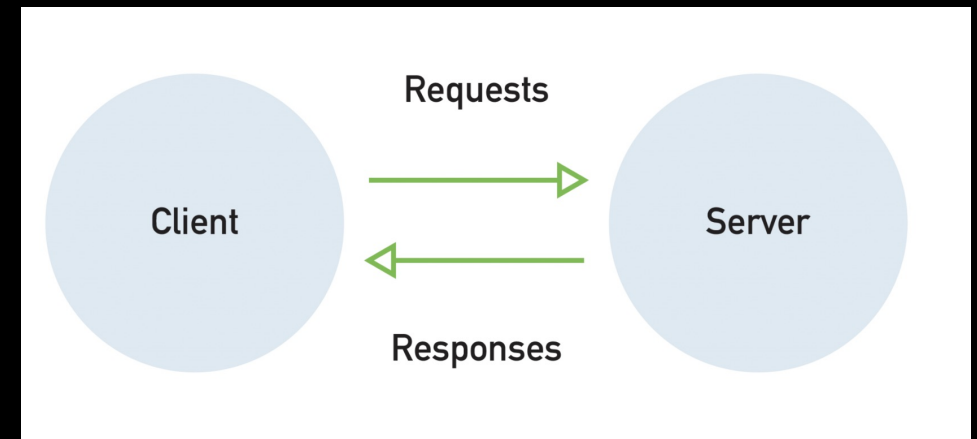# WEBSITE 101

https://WWW.

WHAT IS A WEBSITE

- What is a Website?
- Website is a way to show information to the world.
- It is made up of different components including images, texts, buttons, videos, etc

CLIENTS AND SERVERS

- Clients are typical user's devices like your phones or laptops that are connected to WiFi.

- Servers are computers that store all the information and databases that make up the webpages.

- Clients send requests to the Server through the internet, and the Servers send back the response to the Clients.
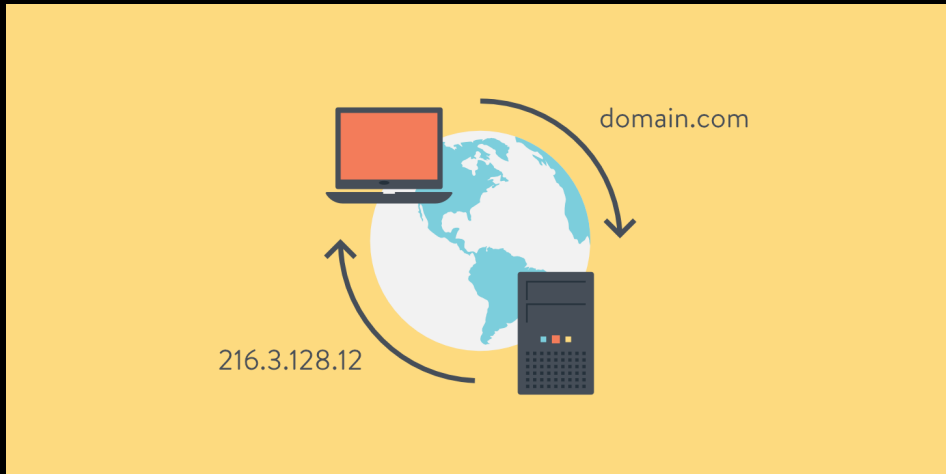
WEB HOSTING

- In order to make a website available 24/7, you will need to have a **server machine** that can host your website. However, it is not ideally to host your website day and night on their own local machine.

- That is why we have **companies who help to offer server space, maintain and run your website with their powerful web servers**. However, it comes at a cost, and you will need **to purchase the hosting service based on your needs.**

- There are several companies that offer this service including GoDaddy, DreamHost, and WP Engine. It is up to the developers to choose what kind of web hosting service that fit with their needs
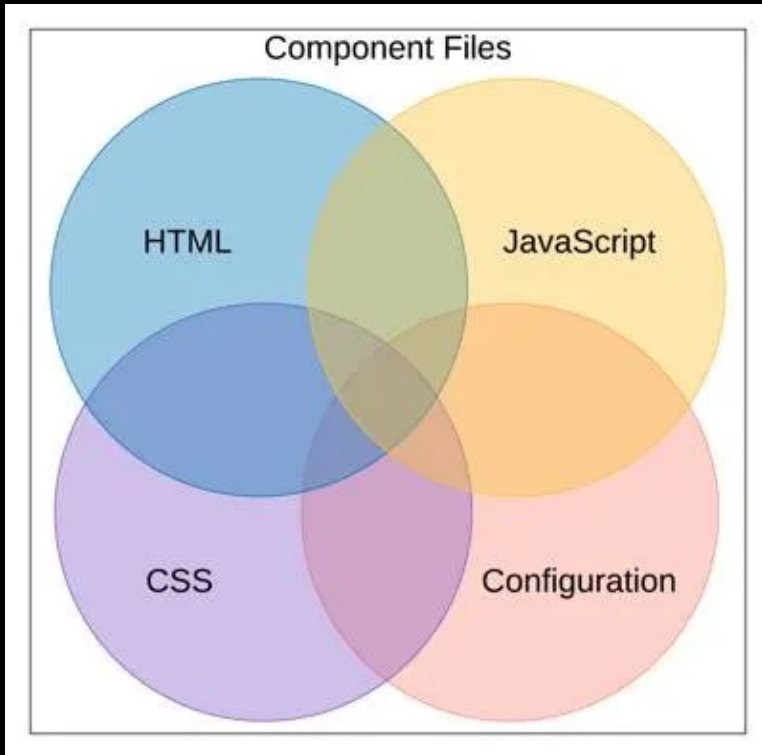
- **Doman Name System (DNS) is the address book for the Internet.** It keeps track of the clients and servers when they try to communicate with each other.

- Every device that is connected to the Internet has a unique string number called IP address (ex: 192.0.2.1), but these IP addresses are not user-friendly. Therefore, we use **web address or domain name to communicate with the server.** Some domain names include Google.com or Youtube.com.

- Domain names need to be purchased through domain name registrar.

- **The main function of Domain Name System is to translate those user-friendly domain names into IP addresses so that computers can find the correct server to send request to.**

- After identifying the server, the clients will need to communicate with it.

- **Data that travels over the Internet follows a standard set of rules called Transmission Control Protocol and Internet Protocol (TCP/IP).**

- TCP/IP determines how the data should broken down and be transmitted over the Internet.

- Another common protocol **is Hypertext Transfer Protocol (HTTP).** The protocol is designed as a middle-man for the web browsers and clients when it transmit documents such as HTML files.

- However, most websites use Hypertext Transfer Protocol Secure(HTTPS) instead of HTTP because of its privacy since HTTPS adds encryption over HTTP.

COMPONENT FILES

Component Files

- Component files are the combination of code files (HTML, CSS and JavaScript) and assets that a normal website is made up.

- Website is made up of three basic languages: HTML, CSS and JavaScript

- Hypertext Markup Language (HTML) gives website a structure and a template with adding heading, paragraph and button.

- Cascading Stylesheets (CSS) gives the website its layout with editing different elements including its font, size and color.

- JavaScript is the programming language that adds functionality to the website like adding animations to the interactivity of a button and more.

DATABASES

- **Databases are all the information that the server needs to store to display including all registered users, inventories and more.**

- Websites use special scripting language (Python and PHP) to grab data from from the database to display it on the website.

- There are many services that provide database solution such as Amazon Web Service(AWS), MySQL and Oracle.

THE PROCESS

What happens when you type in a web address to a browser?

1) Find location: The browser uses DNS to convert domain address into IP address to find the server's location

2) Send Data: The browser sends HTTP request across your Internet connection using TCP protocols

3) Receive Data and Send Back Response: The server receives the data and sends a copy of all the components file back to the client's browser.

4) Unpack and Display Data: The client's browser assembles the component files and displays it to the user.

CONTENT MANAGEMENT SYSTEMS (CMS)

- Most of the projects at LAITS do not involve building the websites from scratch, but we use **Content Management Systems (CMS).**

- CMS **provides user-friendly interface for building sites.** CMS can vary from very customizable to very rigid.

- Two of the more customizable CMS are **Wordpress and Grav**. Wordpress stores all the user's blog in the database while Grav does not.

- There are more rigid CMS like Cascade and Pages that LAITS use to help content editor manage their website with pre-styled sites without additional HTML and CSS.