Date : 18th - Nov- 2020
Morning Session : 9am – 11.00 PM
By ~ Yash

Topics: What is Client Server Model

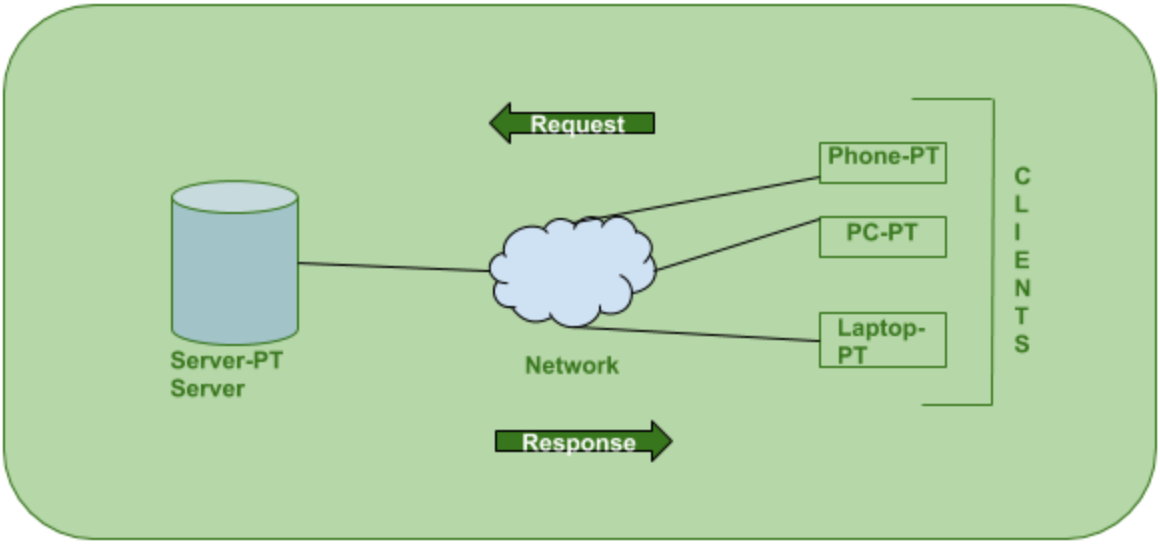
Client-Server Model

The Client-server model is a distributed application structure that partitions task or workloads between the providers of a resource or service, called servers, and service requesters called clients. In the client-server architecture, when the client computer sends a request for data to the server through the internet, the server accepts the requested process and delivers the data packets requested back to the client. Clients do not share any of their resources. Examples of Client-Server Model are Email, World Wide Web, etc.

How the Client-Server Model works ?

In this article we are going to take a dive into the **Client-Server** model and have a look at how the **Internet** works via web browsers. This article will help us in having a solid foundation of the WEB and help in working with WEB technologies with ease.

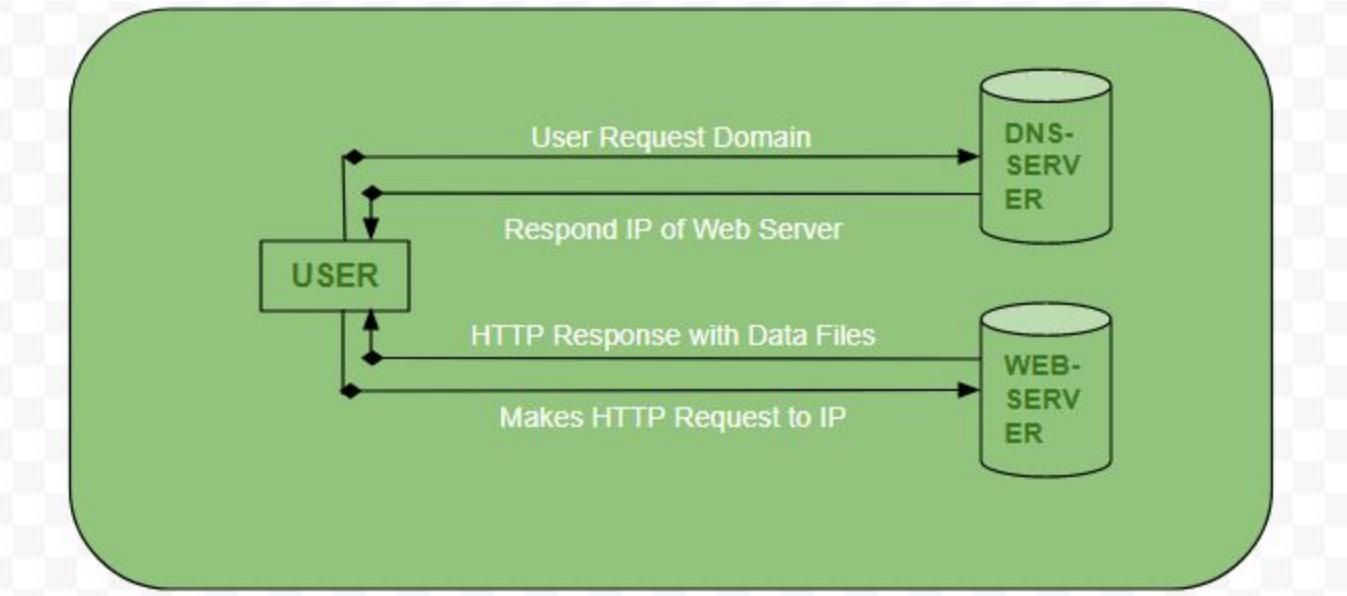
- **Client:** When we talk about the word **Client**, it means to talk of a person or an organization using a particular service. Similarly in the digital world a **Client** is a computer (**Host**) i.e. capable of receiving information or using a particular service from the service providers (**Servers**).
- **Servers:** Similarly, when we talk about the word **Servers**, It means a person or medium that serves something. Similarly in this digital world a **Server** is a remote computer which provides information (data) or access to particular services.
- So, it's basically the **Client** requesting something and the **Server** serving it as long as it's present in the database.



How the browser interacts with the servers ?

There are few steps to follow to interact with the servers and clients.

- User enters the **URL**(Uniform Resource Locator) of the website or file. The Browser then requests the **DNS**(DOMAIN NAME SYSTEM) Server.
- **DNS Server** lookup for the address of the **WEB Server**.
- **DNS Server** responds with the **IP address** of the **WEB Server**.
- Browser sends over an **HTTP/HTTPS** request to **WEB Server's IP** (provided by **DNS server**).
- Server sends over the necessary files of the website.
- Browser then renders the files and the website is displayed. This rendering is done with the help of **DOM** (Document Object Model) interpreter, **CSS** interpreter and **JS Engine** collectively known as the **JIT** or (Just in Time) Compilers.



Advantages of Client-Server model:

- Centralized system with all data in a single place.
- Cost efficient requires less maintenance cost and Data recovery is possible.
- The capacity of the Client and Servers can be changed separately.

Disadvantages of Client-Server model:

- Clients are prone to viruses, Trojans and worms if present in the Server or uploaded into the Server.
- Server are prone to Denial of Service (DOS) attacks.
- Data packets may be spoofed or modified during transmission.
- Phishing or capturing login credentials or other useful information of the user are common and MITM(Man in the Middle) attacks are common.

Other Resources:

https://www.w3schools.in/what-is-client-server-architecture/

https://medium.com/@maneesha.wijesinghe1/what-happens-when-you-type-an-url-in-the-browser-and-press-enter-bb0aa2449c1a

While coming next Class please Things To install in your LAPTOP/Desktop

IDE (VS Code)

Postman

Node