Client Server Model

There are two types of fundamental architecture models that we use in modern computer networking. One is the Peer to Peer model and the other one is the client-server model. Let's understand both of them in detail.

- **Peer-to-peer:** Both remote processes are executing at same level and they exchange data using some shared resource.

In simple terms, a P2P network has no central server or authority controlling the network. Instead, each peer directly communicates and shares resources with other peers.

- **Client-Server:** One remote process acts as a Client and requests some resource from another application process acting as Server.

In laymen terms, the requester for the data will be client and the provider who is fulfilling the request is the server.

To understand this properly, let's take an example of the market. Suppose, you want to buy a flashy nike sneaker let's jordans 2077. There are two ways to get those pairs, one is to go to a showroom or shop that deals with the concerned sneakers and get it from there. The other route is that you connect a seller just like you, the seller might be a sneaker head himself and demands for an another sneaker in place of the one you want. Its kind of a barter system.

So, keeping the above analogy in mind, we can conclude that if you buy the sneakers from the shop owner it will comes under the client-server model where the client is you and the server is the shop owner. On the other hand, if you buy the sneaker from the other seller like you in exchange of the one you own, that will be come under the P2P model, where both the parties exchange information equally and share resources.

Let's understand the information flow in both of them using the below picture.

As we can see, In the client server model, different types of devices like PC, laptop and smartphones all are requesting data from a centralized server and the server is responding to their requests individually to them.

On the other hand, in a P2P network, all the devices can communicate to all other devices to the network. Whoever is capable of fulfilling the request in this case, will make a connection with the requester and provide the data accordingly.