Development

1. History of Web

⭐ Web 1.0(1990s-2000s)

In the early stages of internet website were basic they wasn't much animated or complicated just simple, users can only read those sites no much interaction. For eg. early News Sites

⭐ Web 2.0(2004 onwards)

This Era Introduced user side interaction, user can also create post share content and collaborate with others or build connections with others. For eg. Youtube, instagram, Facebook

⭐Web 3.0(Now and Future)

Modern and future web devlopment is build on blockchain technology, Data is no longer stored in single company server but distributed with user

2. How Computers Communicate

Every Computer connects to internet has an IP address which is like a phone number
each computer release packets(small fragments of data) in air and nearest cell tower catches it and sends to ISP(internet service provider) then ISP scans the request and checks is the content requested is blocked or not also checks user have data pack, if both conditions are met true then it scans in DNS (Domain

Name system) which acts as phonebook for Computers and scans the requested content i.e if user requests google.com it finds its IP address(192.168.1212132) and sends the request to servers anywhere in the world through underwater optical lines cables, if one route fails it finds and alternate path to travel.

3. Domain Name - human friendly way to acess the website

4.IP Address - works as phone number for internet.

5.Mac Address - unique hardware id provided to your device maybe Called as aadhar card of your device

Client Server Model

Basic idea of client server model if u go to any website or app such as amazon or YouTube how your phone /laptop interacts with it Can be refered as client server model.

Mobile/Laptop->Go to YouTube.com->Mobile sends packets->Nearest Cell Tower->ISP-> through DNS Routing->server.

What is client?

Any device which be operated by user it must have internet connectivity eg. Laptop,Pc,Smart T.V,Android,browser,ios

What is server?

An specially programmed system that is programmed to accept the request from user

And provide response accordingly,
If any user says destroy the server, it can be destroyed thats why it is important to protect the server

Server = Computer/machine Jaha par website ka code/database stored hota hain.

you can program your laptop in such a way to it can respond like a server, if any user asks ur laptop a file it must give that file to user.

Differnce between client and server

Client(Browser)
It runs on your device(Laptop,Phone Etc)

Shows the website Ui

Can only request but cannot directly store the full website data.

Server

it runs on remote computer

Stores all the files and database

Process the request and sends back to client

HTTP Request Response Cycle

it consists of 4 process that is Request, Process,Response,Render.

What is HTTP?

It is called as HyperText Transfer Protocol

When Internet was formed You need browser to run the internet, many companies made

different browsers such as chrome,safari, firefox,uc, any company can get unfair advantage by restricting or providing some features thats why the comitte which made internet made the protocol That is called as http, if http allowed then data transfer or reciving would be done.

Eg. User Type Youtube.com->HTTP send req to browser->Then Youtube Servers understand and send html css js images videos etc back to broswer.(looks into database and send to browser then its responsibility of the browser to render the complete website

What happens when You visit a website?

When you type something.com, browser checks cacha is stored or not if yes it loads some data from browser and rest from server,

cache is some data of website that is stored in your mobile/laptop.

Differnce Between FrontEnd/BackEnd

Frontend: Data is visible to user and can interact with it

Backend: Data is not visible to user but it need to store data it also such payment authentication login etc

Static vs Dynamic

Static: in which data doesn't change
same content displayed to user
can be made using html css js
fast and cheap hosting
eg. Old protfolio

Dynamic Wesbite:

Data displayed to other content is unique and personlized for example : YouTube,instagram

Web Hosting And How it works

Web hosting= service where your website lives matlab dunia se se koi bhi acess kar sakte eg AWS, netlify,hostinger,vercel) rent the space on thier server.

Process: User Uploads The File to Hosting

Server Stay Online for 24/7

When someone type Your Domain your request goes to that hosting to that server and server delivers files/data website loads on their browser