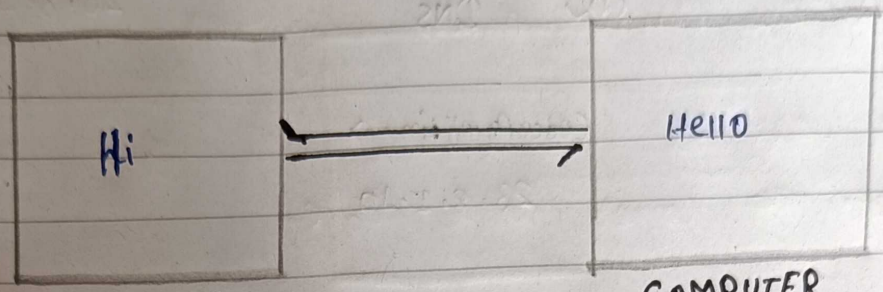
Web Development

1. What is Internet?

Internet is used for one device is communicate ~~for~~ to another Device.



COMPUTER A

127.10.188

COMPUTER B

108.94.777

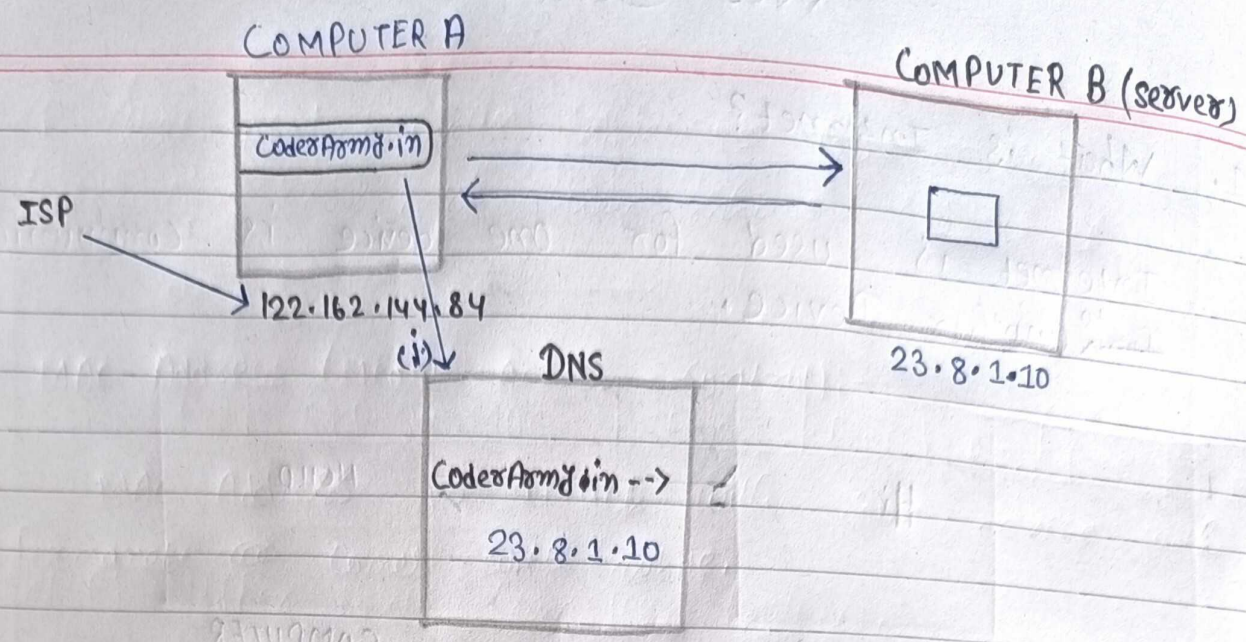
(*) IP Address :-

- It Stands for Internet Protocol.
- IP Address is temporary. If Internet is off then IP Address is remove then Internet is on then new IP Address is Provided by the ISP.

••• Check IP Address ~~Pattern~~ of Device :-

Whatismyipaddress.com

(Q) How whole website is open in my laptop? If I write Coder Army?



(Q) what is mean by ISP?

- ISP Stands for Internet Service Provider.
e.g:- BSNL, JIO, AIRTEL e.t.c.

- I.S.P is Dynamic. (means when Internet is on ISP provide IP Address and off then I.S.P take it).

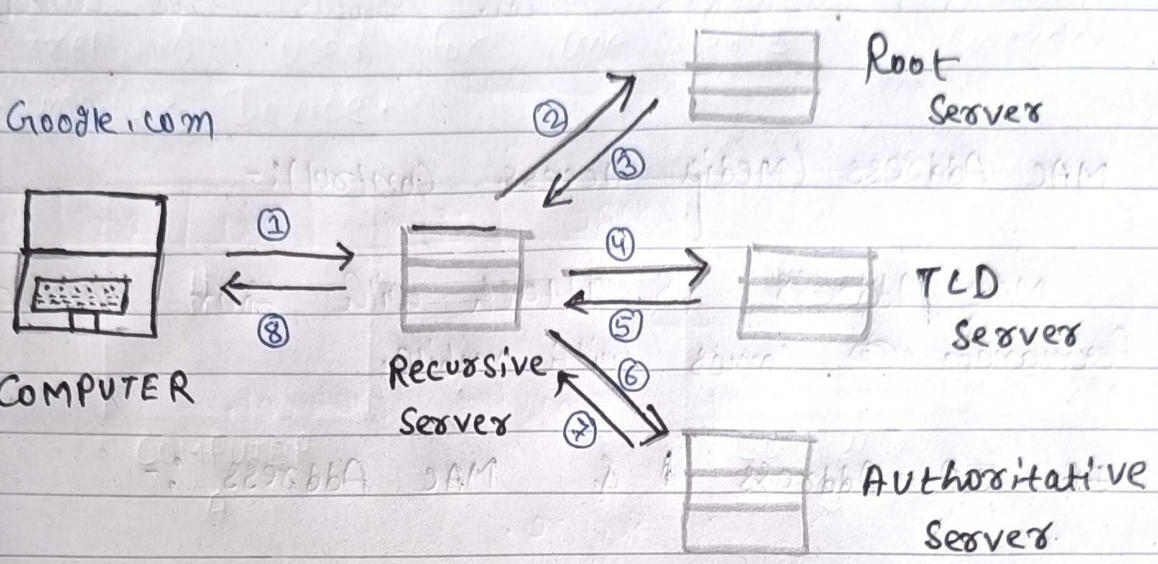
(Q) DNS recorder for google etc.?

NSLookup.io

(Q) How you visit different Pages?

I.P Address through I visit.

e.g:- If you want how D.N.S work?



- In my Device I.P Address is Present the he does not go to D.N.S.
- If my system D.N.S is not Present then comes to this recursive server.
- All over the world 13 root Server are Present.
- If IP Address is not Present in recursive Server then go to Root server.
- If I need .com and .in So it go to recursive Server and then go to the TLD Server.
- TLD Server is not Provide Actual answer so it is Provide go to another Serve i.e Authoriative Server.

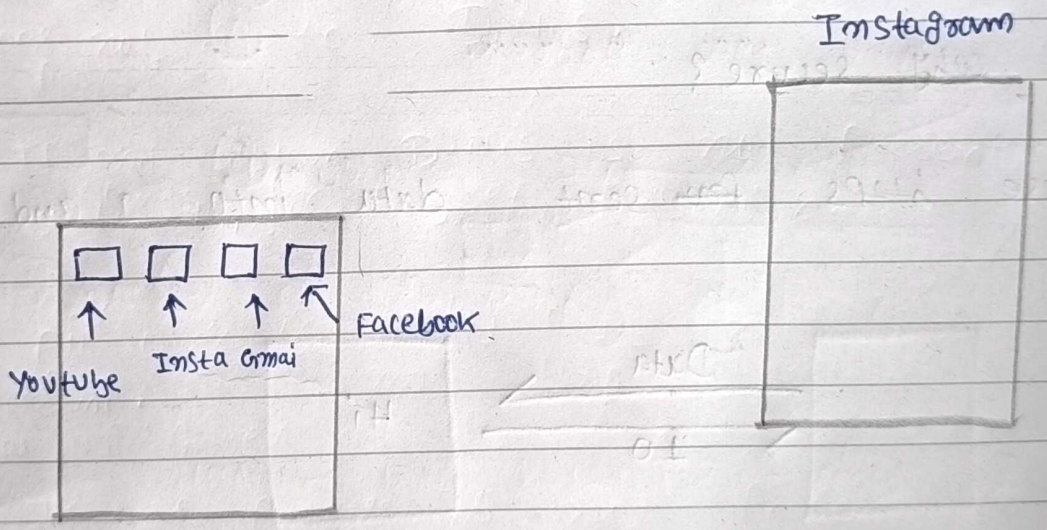
- Computer B sends all message Transfer to Computer C.

- Not really MAC Address works here Computer B sends message to computer A through the MAC Address.

SIP	SMAC	Chat	RIP	RMAC

(Q) Port Number :-

IP + MAC + Port Number



This is our browser different - different tag here.

If I sent request then Port number is attached with the tab.

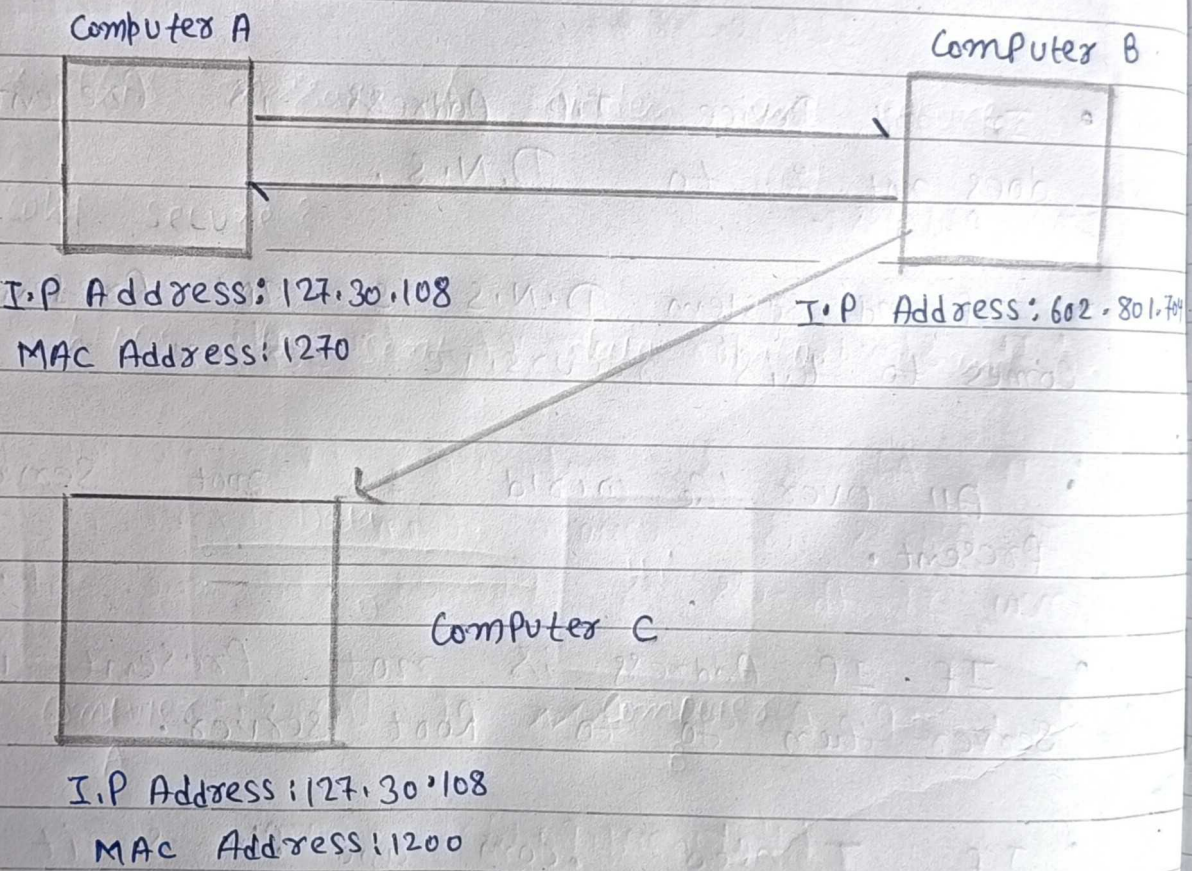
IP + MAC + Port Number
50132

• Then Authorative server is Provide the ip Address 8.8.8.8 then Shows the computer.

* MAC Address (Media Access Control):-

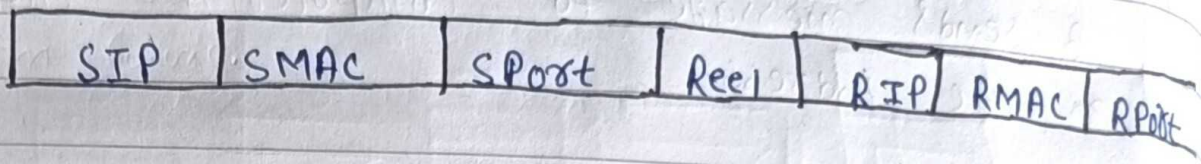
MAC Address is attach with your device with Permanet. ~~cant~~ comes with mobile.

P) If IP Address & MAC Address :-



If Computer A & Computer B are send message each other. In the time computer A I.P Address is 127.30.108 and then Computer A Off the internet then I.P Address is change now I.P Address goes to C.

If someone sent in an Instagram ~~them~~ message then it is comes with Port Number because of many tabs.



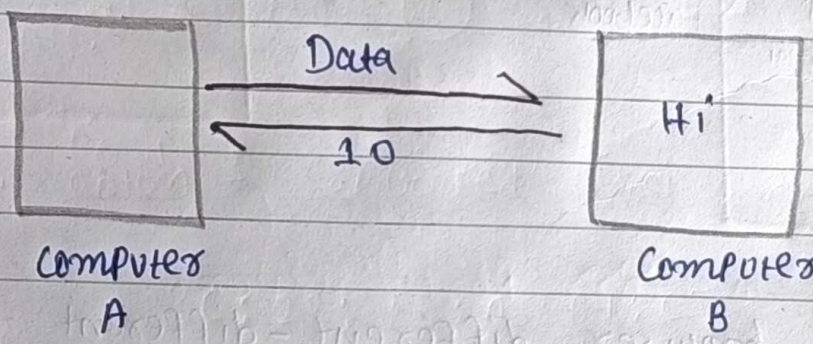
* http:- * Hyper text transfer Protocol.

  * It is not secure.

* https:- * This message is hidden and secure.

(Q) https why secure?

Because https ~~Poo~~ sent data into 1 and 0.



- http → 80
- https → 443

(Q) IPV4 : 32 Bit

12.34.9.8 → 0.0.0.0 → 255.255.255.255

8 8 8 8

8 bit x 4 bit = 32 bit.

2^{32} 2^32 = 4.3 Billion

0 0 0 0 0 0 0 0 → 0

1 1 1 1 1 1 1 1 → 255

4.3 Billion devices are less this is exceed this time.

(Q) IPV6: 128 Bit

2^128 = IP Address

IPV6 is provides hexadecimal 0-9 numbers and letter a-f1. instead of just decimal number.

2001 : 0d58 : 85a3 : 0000 : 0000 : 8a2e : 0370 : 7334.

- Eight groups of four hexadecimal characters.
- The groups are separated with colons (:).

(Q) Why not take IP Address 64-Bit?

Because of ~~Sometime~~ after Sometime 64 bit exceed then 128 Bit are choose for 500 Years from future.

** MAC Address (Media Access

- MAC Address have 48 bit numbers.
- You have not only one MAC Address you have many MAC Address.
- MAC Address have hexadecimal.
- It is typically written as 12 hexadecimal digits.

1. Colon - Separated (Most common):

3C:22:FB:A3:B4:C5

2. Hyphen - separated (common on windows):

3C-22-FB-A3-B4-C5

3. Period-Separated (used by cisco and other Network gear):

3C22.FBA3.B4C5

4. No separators (less common, seen in some software):

3C22FBA3B4C5

(Q) How to Find MAC Address:-

1. Open command Prompt:

- Click the Start Menu.
- Type cmd and Press Enter.
- Alternatively, Press win + R, type cmd, and Press Enter.

2. Run the Command:

ipconfig /all.

Q) Port Number:-

- Port Numbers are numerical identifiers (0-65535).
- 16 bit unsigned integer.
- Not Negative unsigned means number.

$2^{16} - 1$ = Highest 65,536

- 16 binary digit (1s and 0s).

(*) Reserved Port Number :-

21 : FTP (File Transfer Protocol).

22 : SSH (Secure Shell) - How you will log into servers.

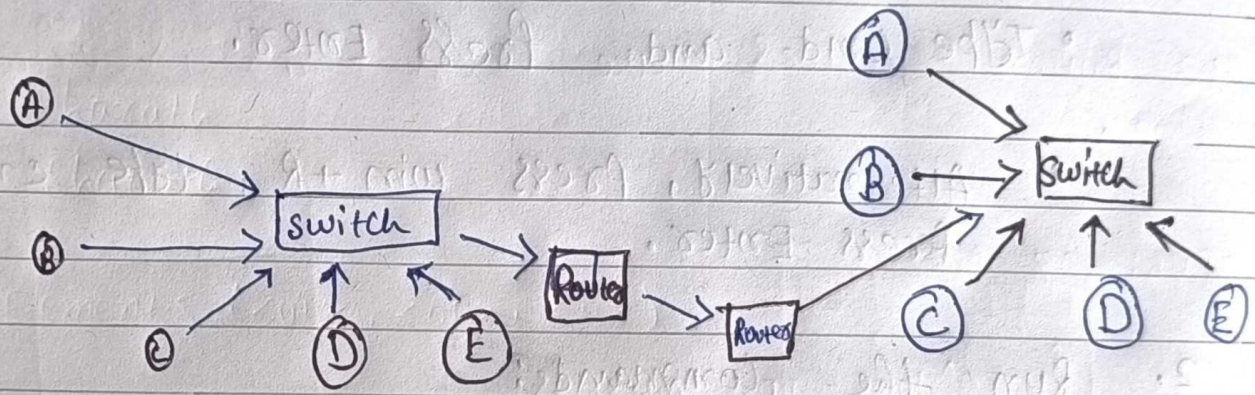
25 : SMTP (Simple Mail Transfer Protocol) - For sending email.

53 : DNS (Domain Name System) -

80 : HTTP (Hyper Text Transfer Protocol) - The standard for unencrypted web traffic.

443 : HTTPS (HTTP Secure) - The standard for unencrypted web traffic.

(Q) LAN, Switch :-



Local Area Network