Lecture-3- IP ADDRESS

Vidyalekhan
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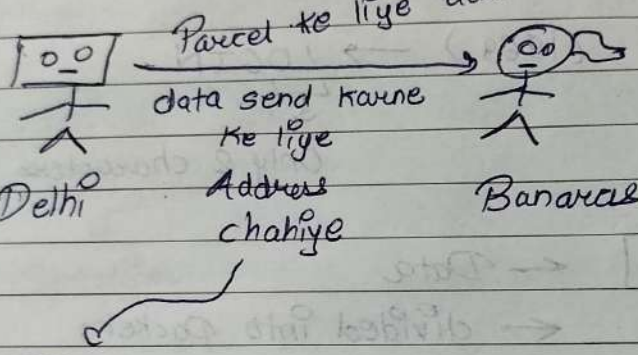
1969 → 1974
↓
Protocols were developed → TCP/IP → ARPANET
↓
All countries were asked to follow protocols.

- IP Address



1) IPv4 → 32 bits
↓
Eg → 192.38.67.9.

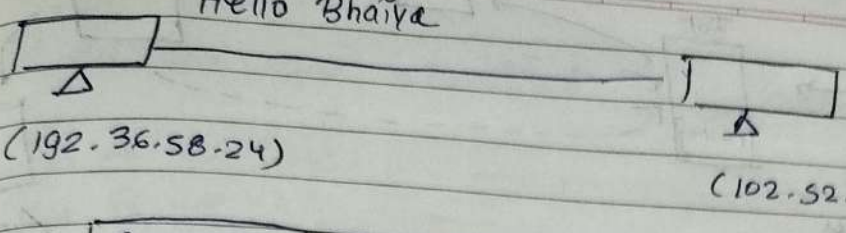
0-255 0-255 . 0-255 . 0-255

- To find IP, go there whatsmyip.com.
- 32 bit were broken into 8-8-8-8 bits.

0-255 . 0-255 . 0-255 . 0-255

- To connect with internet, IP Address is allocated.

ARPANET



Source IP	Message	Destination IP

2^{32} → 400 Crore IP Addresses

- There would be 1000 crore +,

[400 Cr Address] → ? → [1000 Cr Address]

↓

IPv6 → 128 bits → 2^{128} devices

↓

In hexa-decimal form

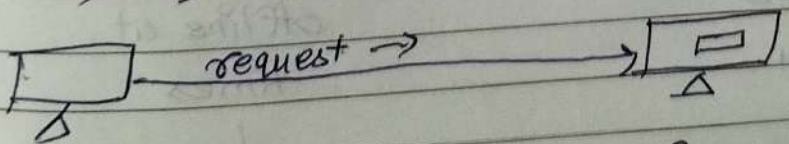
- Who will allocates IP Address ?

↓

ISP → Jio, Airtel, Vi

- Why I am not entering IP address as website though? I am entering google.com, ...

↳ Domain Name Server (1980)



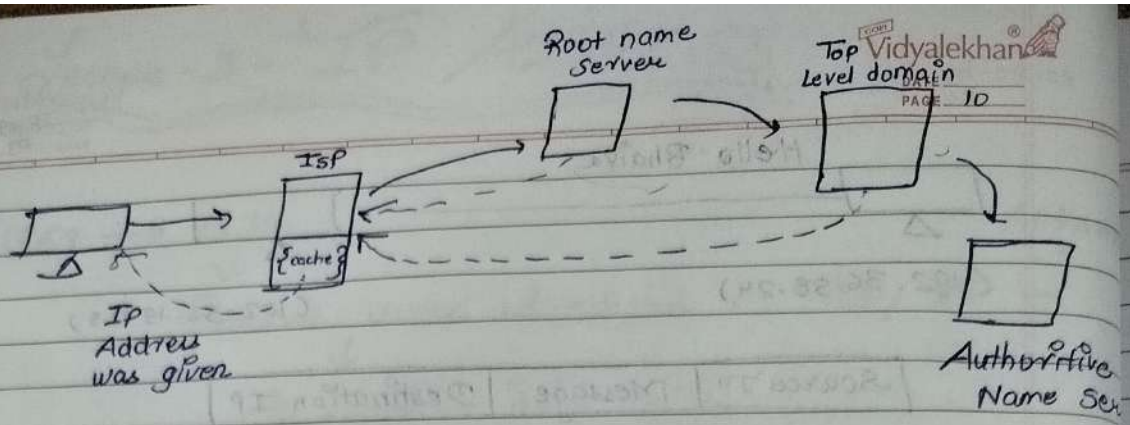
Domain → convert → IP

↑

Humans were familiar.

↓

I Should Know IP of Server ? → Domain was developed



- Root name Server holds .com, .in, .org website info.
- ISP does not IP before-hand, that's why this procedure is followed.
- Only 13 Root name servers in the would.
- Root name server holds Top level domain and then Top level domain sends to authoritive name server
- Cache is fast memory, ISP hold cache of frequently visited websites.

IP Address

Static
↓
Device that doesn't change IP Address
↓
Amazon, Flipkart has fixed/static address.
↓
Because device is 100% online

Dynamic
↓
Device that does change IP Address
↓
Devices that are offline at times
↓
Your Phone, etc...

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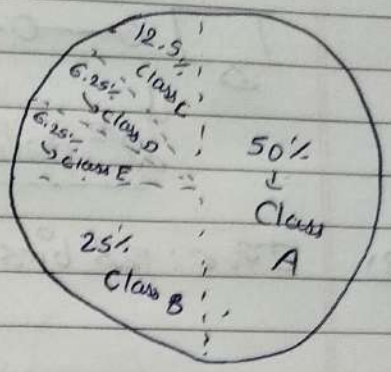
- IP Address are classified in classes →

- Class A → 50%
- Class B → 25%
- Class C → 12.5%
- Class D → 6.25%
- Class E → 6.25%



How to identify classes ?

Class A → 0-127 . — . — . —
Class B → 128-191 . — . — . —
Class C → 192-223 . — . — . —
Class D → 224-239 . — . — . —
Class E → 240-255 . — . — . —