* Network Access layer — Datalink, Physical layer
  * Network Access layer — Datalink - Physical

-> there is a Protocol called Address Resolution Protocol which

Your IP address	Your MAC address	IP sender	IP reciever	MAC of reciever

Bit? 6 → You don't know
6
6

0

-> You don't know the MAC of reciever So it broadcast it where it broadcast It if It has a reference of Your MAC address, which reference is added here

→ If You don't know MAC address while networking
o You broadcast it with IP address on
network. Registered MAC address on network
You will know it.

→ MAC address - Your Device has address
Ex: IPad, Phone

* MAC address

→ MAC address is a Physical address by which
we can recognise a device.

* ARP →
→ with Your IP address associated associates
with MAC address.

* Practically   address of router
198.168.0.1 → address of Your router
login it
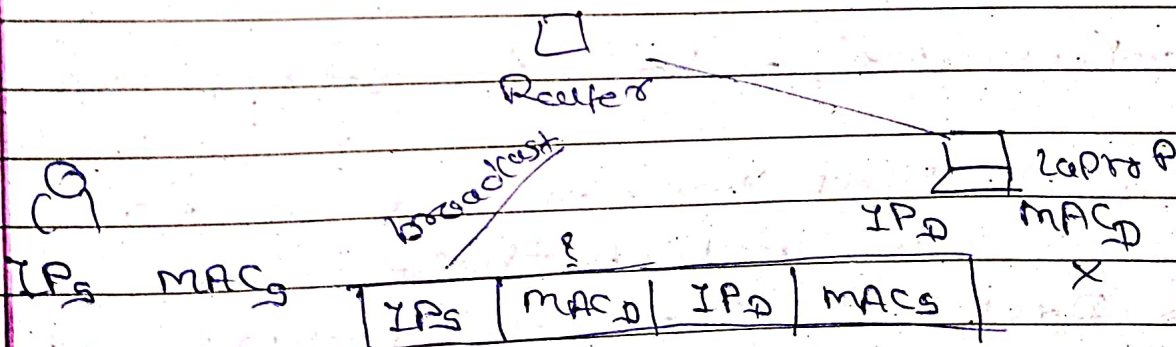DHCP ? Tells You whop is connected on the
network.
mickey's Phone - Mac address is a Physical
Your Router has assigned an IP address
to Your Device that's called assigned IP

→ when you don't know MAC address in that case you use Address Resolution Protocol (ARP

Ex. I don't know my Phone's MAC address. You tell Your Router to Provide MAC address of Your Phone. Router says It Don't know mac address so It broadcast it, every where connected Device within the same network well get MAC address.

→ You as a host request for MAC address by giving Your IP address. Then the Device connected their MAC address comes in a Packe

Router

broadcast

IP_S MAC_S

| YP_S | MAC_D | IP_D | MAC_S |

IP_D MAC_D

Laptop

X

will make a Packet as

↳ Broadcast msg will go to Laptop. Laptop will see that Packet has IP of its own but MAC address is missing. It will give MAC address (Laptop) & unicast it to me Chost]

↳ this is how help you know MAC address by broadcasting & unicasting. (router)

* why need to know MAC address?
→ In networking you need logical & physical address both.

CAN = Campus Area network
Ex. someone lives in a hostel. They go to administrator & give their MAC address (because IP address keeps changing)

AN	ARP =	IPs	MACR	IPR	MACs	MAC missing

address
mostly

RARP =	IPs	MACR		

&

ARP.
IP address miss

MAC is known & use RARP.

[wireshark] - shows transfering your Pack

→ Through DHCP you can give someone access as well as restrict their Access.
  ↳ DHCP is a network administration Protocol that assigns an IP address to any device so that they can interact using IP.

* Important Protocols

* DNS (Domain name system)
  → You write www. google.com in backgrou

there is a server, you don't directly go to IP address. Google.com is mapped with a dom (A server's IP).

Google : IPv4 address 8.8.8.8 & 8.8.4.4

actically Grede to Go to Godaddy.com make account h
You buy a server take a iP address, map the Assign them.

Top Namecheap free domain

* FTP (File Transfer Protocol)

→ makes/create a connection between clients server so that you can securely transfer files.
  ↳ search on google
      index of games · first link - ftp server
  ↳ Filezilla - free FTP client - whatever you want you can download from FTP server
  ⇒ search : FTP server list.

* Telnet (Terminal network)

→ First ever Protocol with it you can access any remote computer.
  ⇒ Through ssh you can only see shell
     Through Telnet directly access v10 t.
     (whole system) like Anydesk.

* SMTP (simple mail Transfer Protocol)

→ As devops engineer how will you setup SMTP server?

   → You can setup a SMTP server in ubuntu using sendmail

    → ubuntu smtp server sendmail?

* SNMP (Simple network management Protoc

→ In whole network if you want to stop someone's IP, basically manage network used very rarely.
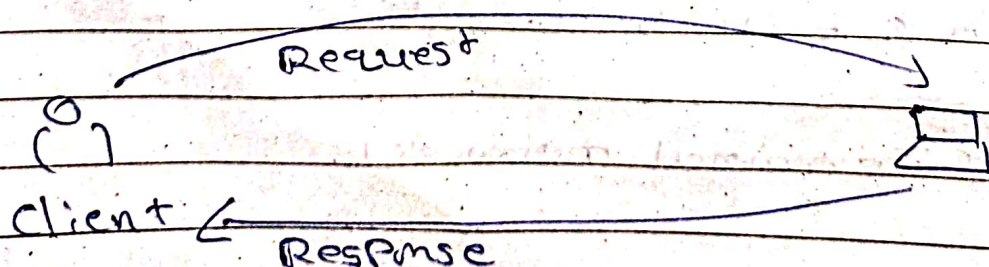
* HTTP (HyperText Transfer Protocol)

→ webpages load through http Protocol. Request API calls through http.

  HTTP - Port 80   HTTPS - Port 443

  [HTTP methods] - important for devops

Request

Client ⟵ Response

Request will be

    data: Read, write, update, delete.

Read → GET   write → POST   update → PUT

Delete → DELETE   PATCH method