Kunal Kushwaha 2/7/22

Computer Networking

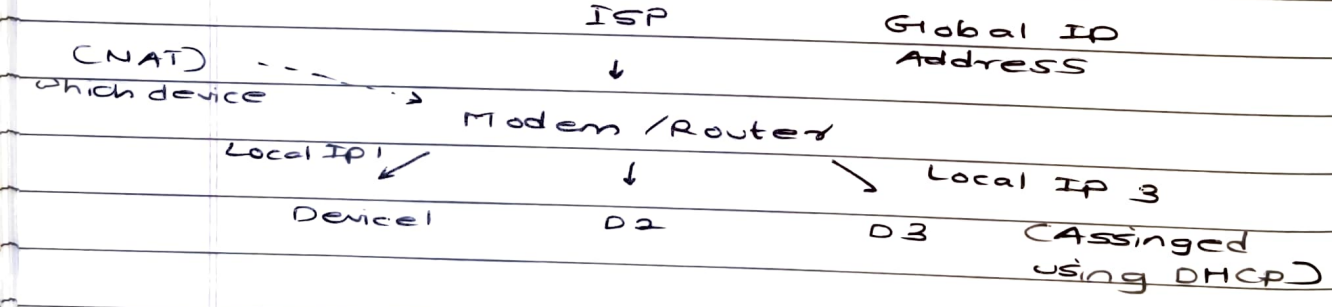
- COMPUTER has a full-form
- WWW - Tim Berners-Lee
  ↳ Search Engines
- Internet Society (RFC Editor)

Client - Server (Request ⇄ Response)

- TCP - Transmission Control Protocol
  (100% Data needs to be reached)
- UDP
- HTTP - Hyper Text Transfer Protocol

Packets ?

- IP Address (x.x.x.x) → x - 0.255
  ↳ Some are reserved
  ↳ # curl ifconfig.me -s (own IP)



- 1 device can have many port numbers (Application)
  IP / PN ⟷ IP / PN
- Ports (16-bit) 2^{16}

① HTTP - 80 ② MongoDB - 27017

PAGE No.
DATE 2/7/22

- 0 - 1023 → Reserved Ports
  1024 - 49152 → Applications
  remaining can be used

- 1 mbps (mega bits) = 1000000 bits/s
  1 gbps = 10^9 bits/s
  1 kbps ≈ 1000 bits/s

- submarinecablemap.com
  Physically : optical Fibre, Coaxial Cable
  wireless : Bluetooth, wifi
  ? why cables & not satellites → Faster

LAN : Small House/office
  ↳ Ethernet, wifi
MAN : Across a City
WAN : Across countries
  ↳ optical Fibre cables
    ① SONET (Sync optical Networking)
    ② Frame Relay (Local to WAN)

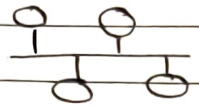
} Internet

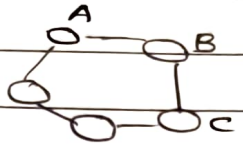
- Modem - Digital to Electrical signal
- Router - Routes Data Packets

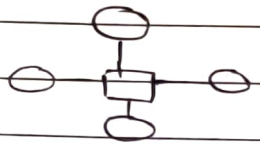
- ISP - Tier 1 (Tata)
  Tier 2 (Airtel)

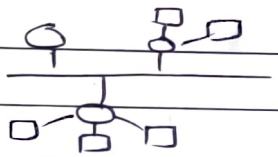
PAGE No.
DATE 2/7/22

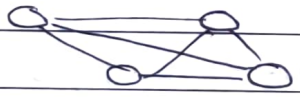
- Topologies

① Bus  (1 person can send data at a time)

② Ring  (Everyone connected to other) (unnecessary calls)

③ Star  (1 PC connected to others) (central fails = everything fails)

④ Tree (Bus - Star)  (combination)

⑤ Mesh - Every single computer connected to every single pc (expensive) 

- Structure of Network :