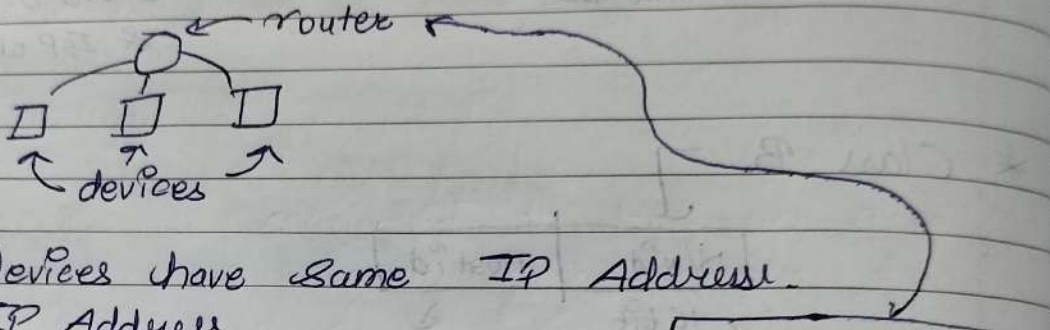
Private IP Address → Reserved IP Address.

* Class E
  ↳ Reserved for future purposes.

20-08-24

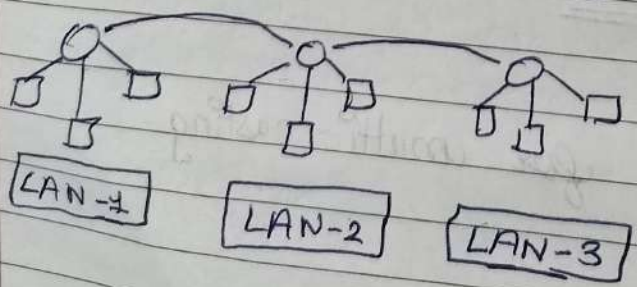
Lecture - 5 - Types of Network

1) LAN : Local Area Network
   ↓
   Used in small areas.



- The devices have same IP Address.
- Private IP Address
  ↓
  Reserved for private use.
- Router is smart, knows who requested.
- Public Address → converted → Private Address
- Router gives address to devices, and then data is delivered.

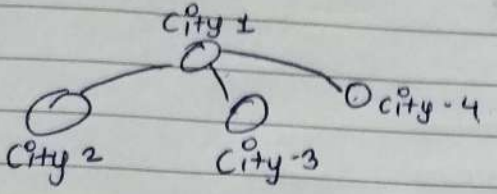
2) MAN : Metropolitan Area Network



3) Wide Area Network

↓

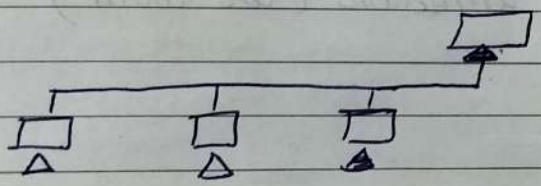
Connected by MAN.



* Types of Topology

1) Bus Topology

- All devices are connected to a single central code, known as bus or back-bone. Data travels in both directions, along the bus.

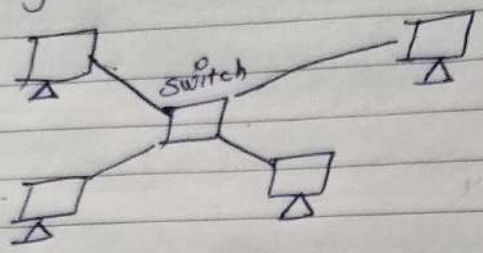


- Advantages
1) Easy to setup & extend.
2) Requires less cable than other topologies.
- Dis-advantages
1) If main cable fails, entire network goes down.
2) Performance degrades as more are needed.

2) Star Topology

- All devices are connected to a central hub or Switch. Data passes through hub before reaching its destination.
- Advantages
1) If one connection fails, it does not affect rest of network.

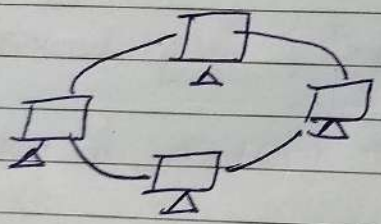
2) Easy to add or remove devices.



- Dis-advantages
1) If central hub fails, entire network goes down.
2) Requires more cable than bus topology.

3) Ring Topology

- Each device is connected to two or more devices, forming a circular pathway for data. Data travels in one direction (or both)

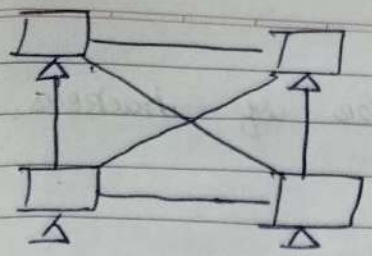


- Advantages
1) Data Packets travel at high speeds.
2) Easy to identify faults and isolate them.

- Dis-advantages
1) If one fails, it can disrupt entire network.
2) Adding or removing devices can be disruptive.

4) Mesh Topology

- Every device is connected to every other device, either fully or partially (in a partial mesh)



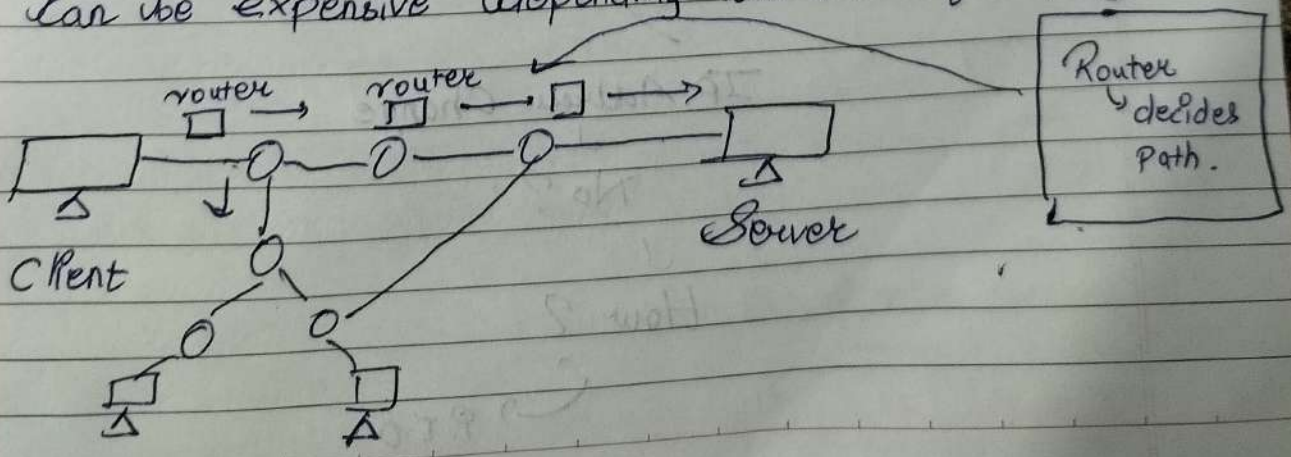
- Advantages
1) Highly reliable : if one connection fails, others can take over.
2) Offers redundancy, and multiple pathway for data.

- Dis-advantages
1) Expensive to implement due to high amount of wires.
2) Difficult to set up & manage.

5) Hybrid Topology

- A combination of two or more different topologies. Such as star bus or star-ring.
- Advantages →
1) Flexible and scalable.
2) Can be designed to suit specific network requirements

- Dis-advantages
1) Complex to design & implement
2) Can be expensive depending on mix of topologies.



- Data is encrypted, for prevention of hackers, privacy.

YOUTUBE → XUTBACQ → Makes No Sense 😵?

- Data is decrypted when reached to server.
- In middle, no body can read messages.

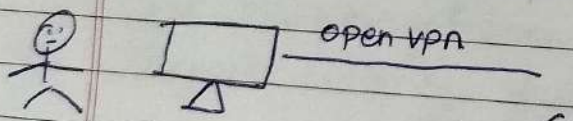
http → data is not encrypted.
https → data is encrypted

Incognito Mode
↓
ISP will know which websites you visit, it's just history won't be stored.

ISP ko pata chega kis website pe gaye par ye nahi pata ki konsa video dekh rahe.

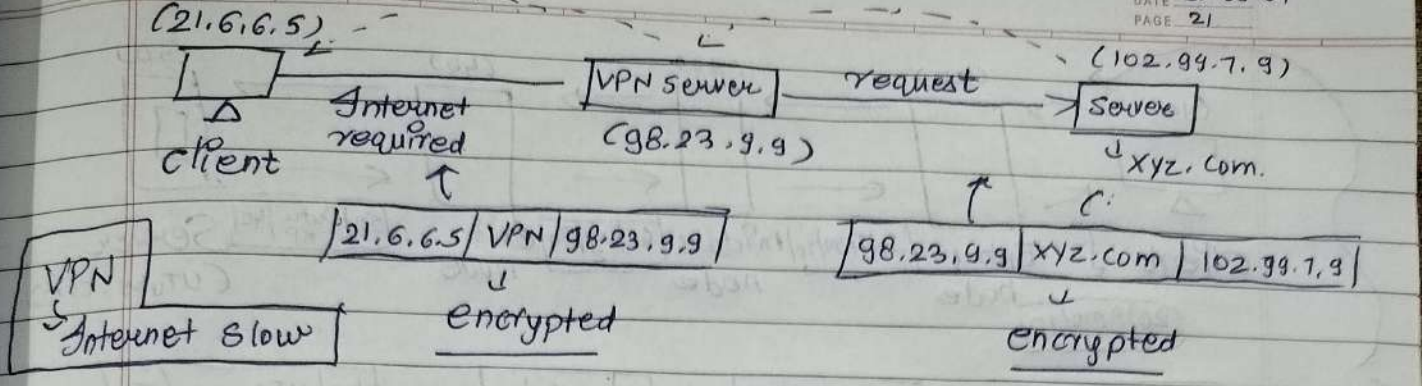
- Privacy is a myth → Because ISP knows which websites you visit.

* Virtual Private Network – VPN



IP Address Change
↓
No?
↓
How?
↓
P.I.O

VPN
↳ Inte



- TikTok → VPN se bhi access nahi kar sakta → Indian Govt. forces VPN to not connect.
- Adult web → VPN se access kar sakta → Indian Govt don't force VPN.

23-09-24

Lecture - 6 - Dark Web & Subnet Masking

- Dark web → Illegal works, etc..
  - Tor Browser → Extension → .onion
    - Firstly used by US Military → Secure & Anonymous
- There are different protocols to ensure Security & Anonymity → P.I.O.