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CA - Network

→ Assignment 1: Draw your Home network topology & explain it.

```
              [ Internet ]
                  |
              [ ISP Router ]
               /            \
      [ wi-fi devices ]    [ ethernet devices ]
        /    |    \                |
[laptop] [phone] [smart TV]   [Desktop /PC]
              \
           [ IOT Devices ]
```
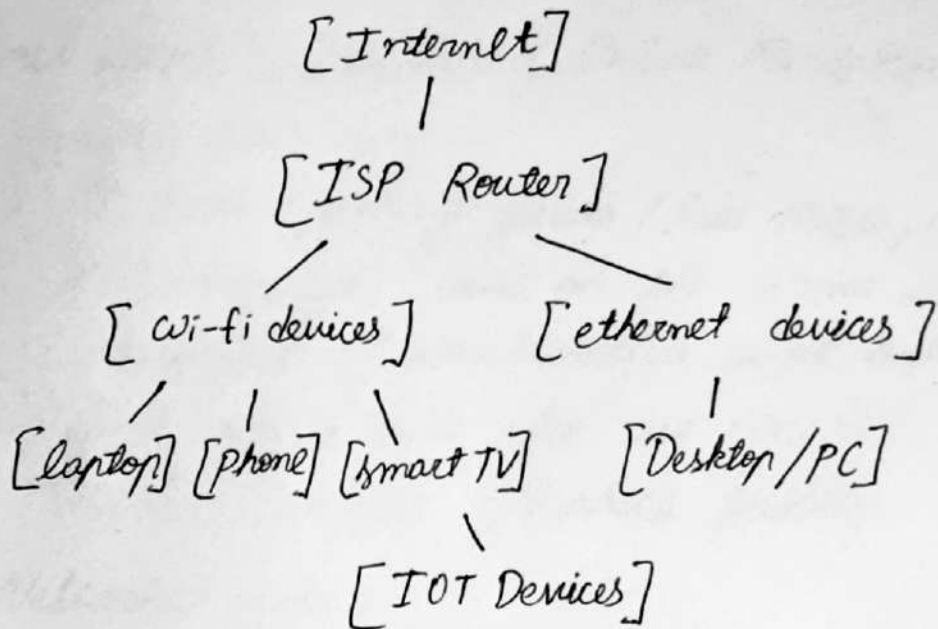
1. ISP & modem /Router : The internet service provides your internet connection through a modem.

2. Router - The router connects all devices in the home network.

3. Wifi connected devices - Devices like laptops, smartphones, smart TV's, & IOT devices connect wirelessly.

4. Ethernet connected devices - Devices like desktop PCs or gaming consoles may use a wired ethernet connection for faster & more stable performance.

5. IOt devices - These includes smart home devices like smart speakers, cameras & lights.

Assignment 2:-

Real world application : Online Multiplayer Gaming

→ Parallel compution
- In online ~~gaming~~ games (like PUBG, COD) parallel computing is used on the server side to process thousands of simultaneous game actions.
- GPU on clients also use parallel computing to render complex graphics quickly.

→ Networked system
- The game runs over the internet, requiring real-time data exchange b/w player devices.
- Networked systems ensure low latency, data syncronization & multiplayer interactions.

→ Why it's important
- Parallel computing ensures fast & smooth gameplay.
- Networked systems make global multiplayer possible & provide real time collaboration.