

ARPAnet ✓

- Packet Switching ✓
 - WAN ✓
 - LAN ✓
 - MAN ✓
-

Benefits:

- Devices like printer and storage can be shared.
- Software can be purchased on network per seat level.
- Files and data can be shared.
- Security through access rights can be made sure.
- Networks can be monitored using servers.

Drawbacks:

- Cabling and servers are expensive.
 - Managing large networks is complex.
 - Single device fault can down the whole network.
 - Malware and hacking can be a threat.
-

- Networked computers

Hardware:

- LAN Cards
- Routers
- Switches
- Wireless Routers
- Cables

Software:

- Server OS
- Firewall
- Security utilities

Services:

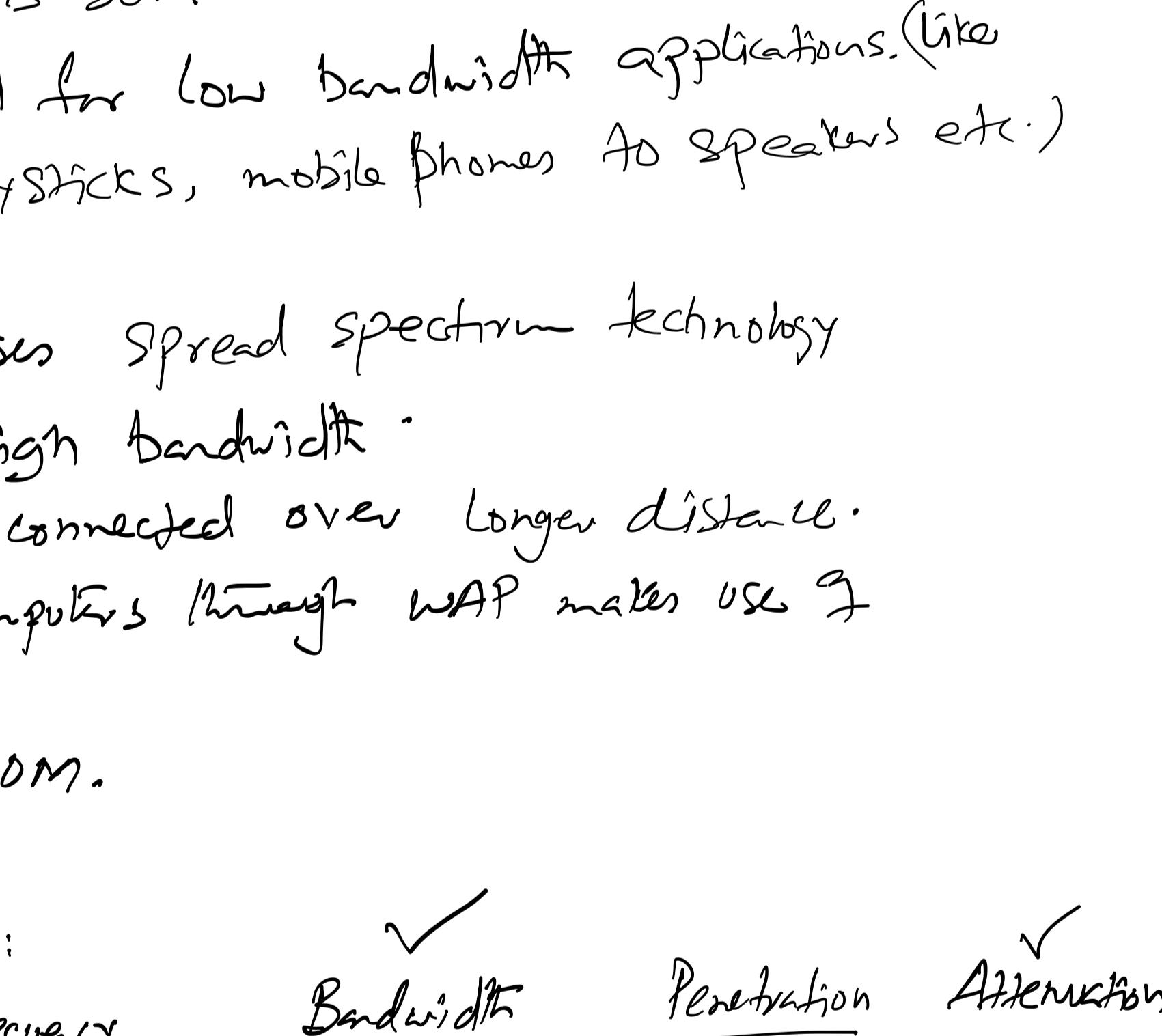
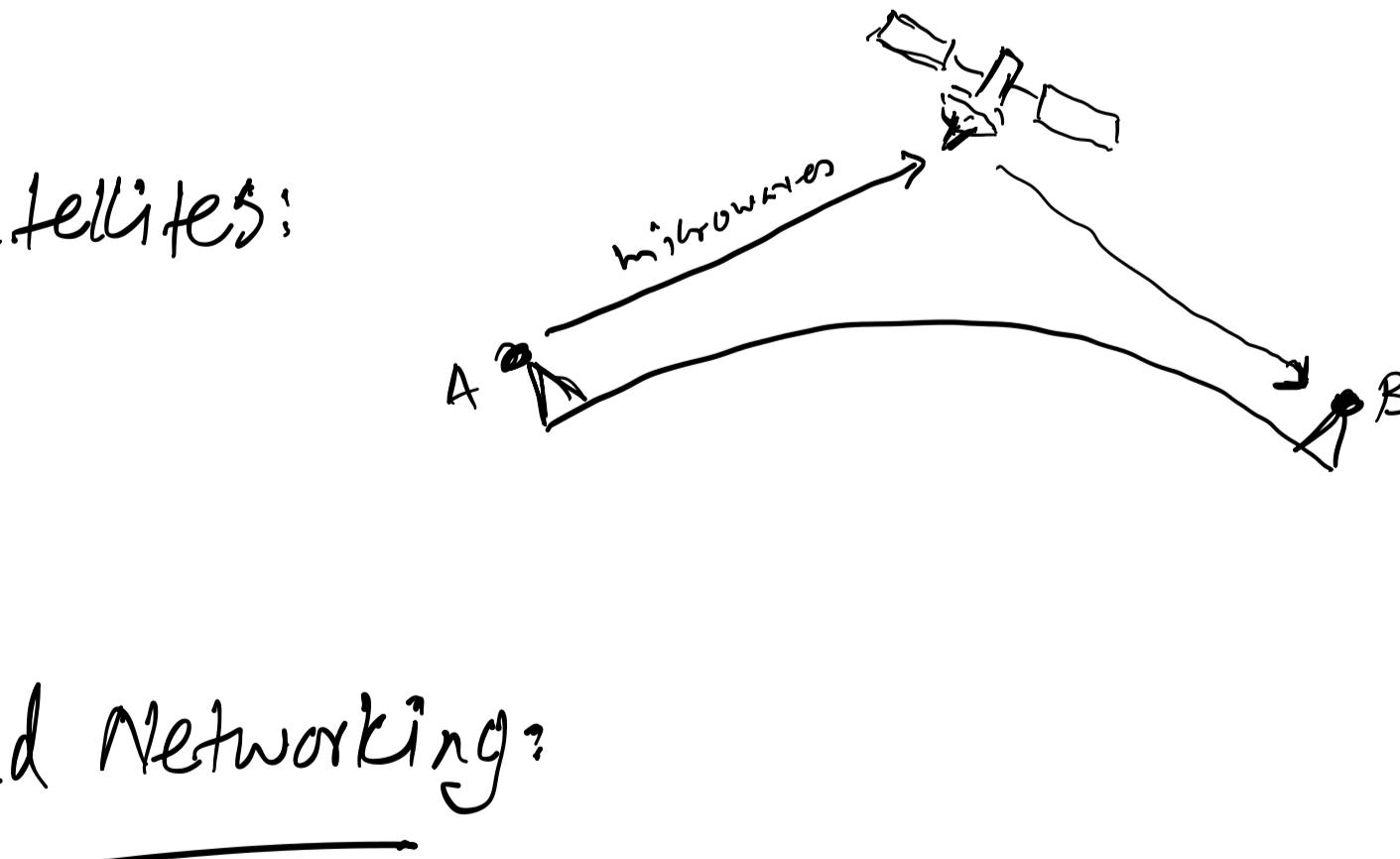
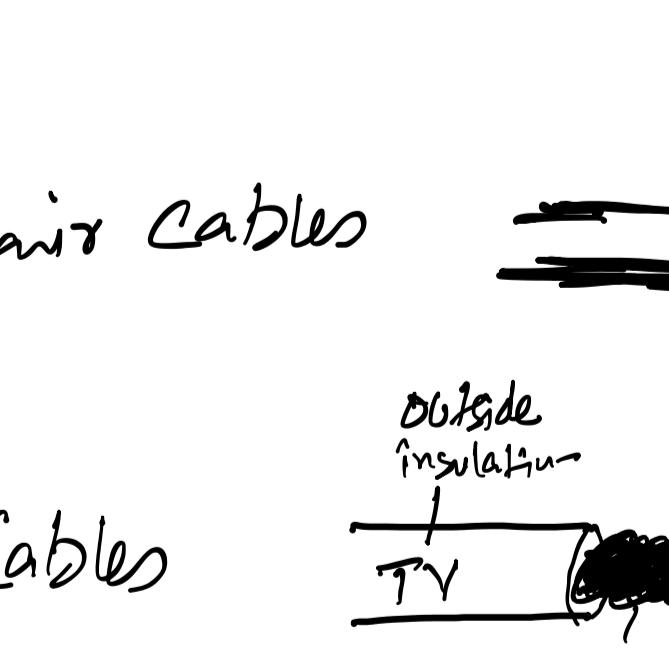
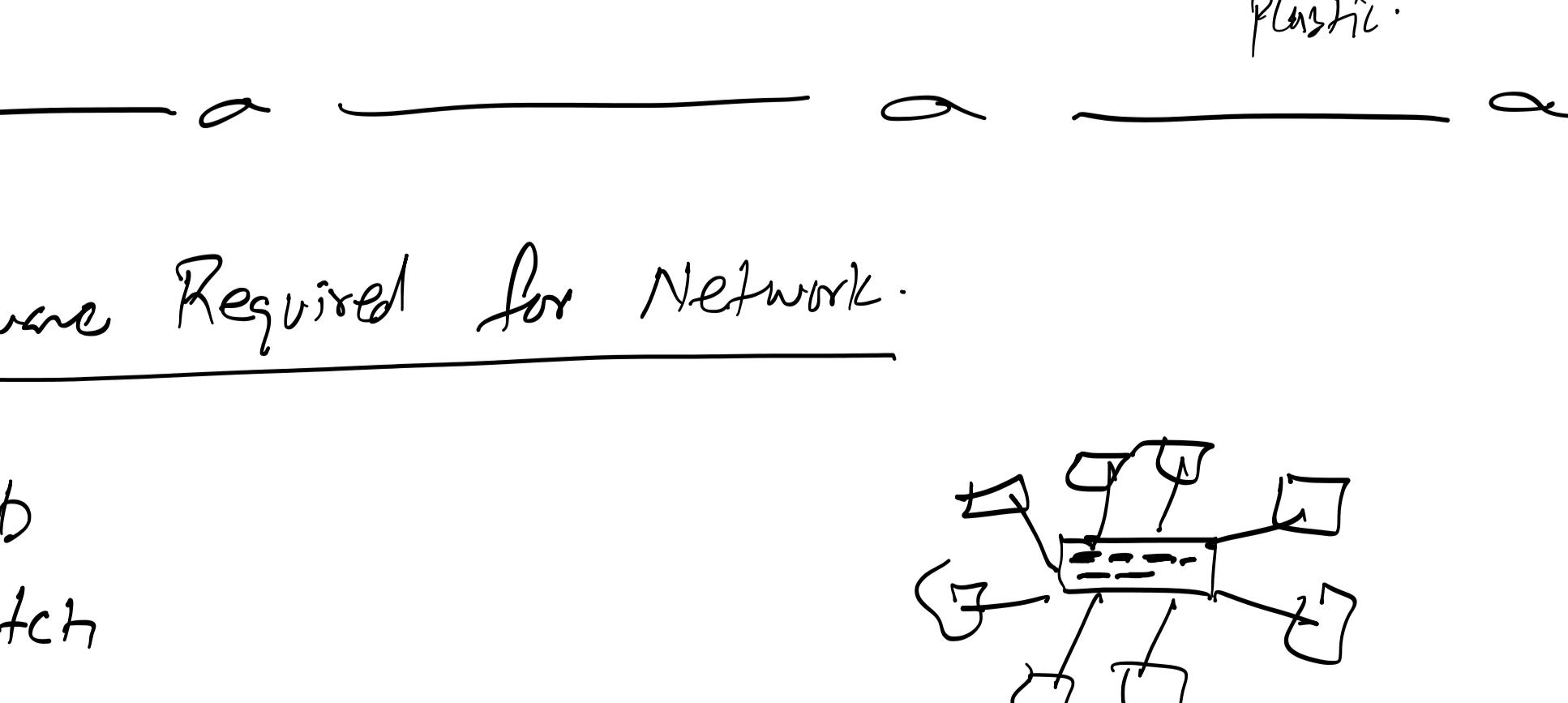
- DSL
- Satellites communication channels
- Wireless protocols
- IP addressing

Network Categories:

- Private Networks
- Public Networks

LANS:

- Wired LANs
- Wireless LANs.
- WAPs.

**WAN:****Client Server Network****peer-to-peer****Thin and thick clients.****Cloud Computing:****Cloud Storage:**

- OneDrive (ms)
- GDrive (Google).

Types:

- Public Cloud
- Private Cloud
- Hybrid Cloud

Cloud Software:**Networking:****Wireless:**

- WiFi
- Bluetooth

Radio waves.

- Bluetooth uses band of 79 frequencies (channels) on 2.4 GHz.

- Bluetooth uses random channel out of 79 channels and jumps to one after the other until a free channel is found. This is called "Spread Spectrum Frequency Hopping".

- Max. range is 30M.

- Mostly used for low bandwidth applications (like headset, joysticks, mobile phones to speakers etc.)

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

- WiFi also uses spread spectrum technology

- WiFi uses high bandwidth

- WiFi can be connected over longer distance.

- Phones and computers through WAP makes use of WiFi.

- Max. range 100M.

Electromagnetic Radiations:

Waves: Frequency

Bandwidth

Penetration

Attenuation

Radio waves: 3 MHz

3

1

1

Microwaves: 3 GHz

2

2

2

Infrared: 300 GHz

1, largest

3

3, weakest

Satellites:

microwaves

WAN

LAN

Wired Networking:**Cables:**

- Twisted pair cables

LAN

- Coaxial Cables

LAN

- Fibre Optic cables

Light

Hardware Required for Network.

- Hub

- Switch

- Repeater

- Bridges

Only connects LAN.

- Router

- ISP

- Modem

Same protocols like TCP/IP.