Experiment: 3

Date: 30/7/24

Aim:

To analyze the behaviour of network device using cisco packet tracer simulator.

Steps:

(1) From network component box, click & drag & drop the below component.

(a) n generic PC's & one hub.

(b) n generic PC's & one switch.

(2) Click on connections.

(a) Click on copper straight through cable

(b) Select on PC & connect to hub, the link LED should glow in green.

(c) Similarly connect n PCs to the switch.

(3) Click on the PC's connected to HUB then click 'desktop" then click IP config.

Enter IP address on IP4 address box then close.

(as Click on PDU (message icon) from common tool bar.

drag & drops it on one of PC & drop on another PC.

(4) Observe the flow of PDU from source to destination by clicking simulation & on right bottom.

(5) & Repeat the same for. PC's connected to switch.

(6) Observe.

Observation:

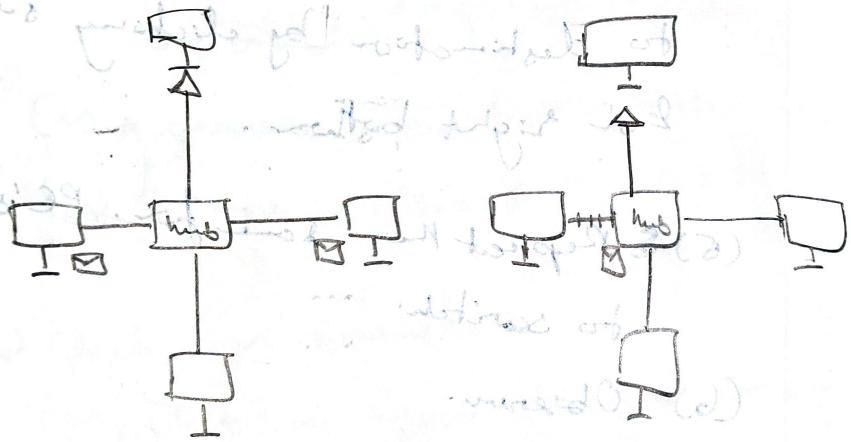
Hub:

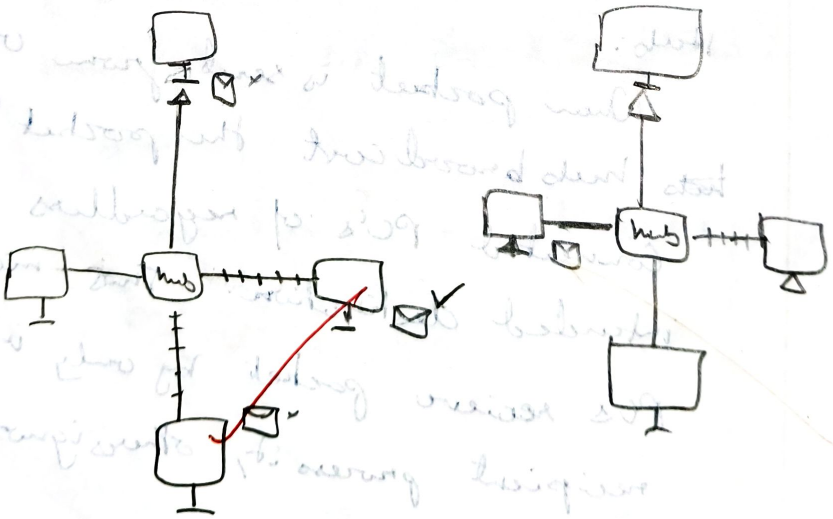
When packet is sent from one PC the hub broadcast the packet to all connected PC's of regardless of intended destination. This means all PC's recieve packet by only intended recipient proces it, others ignore it.

Switch:

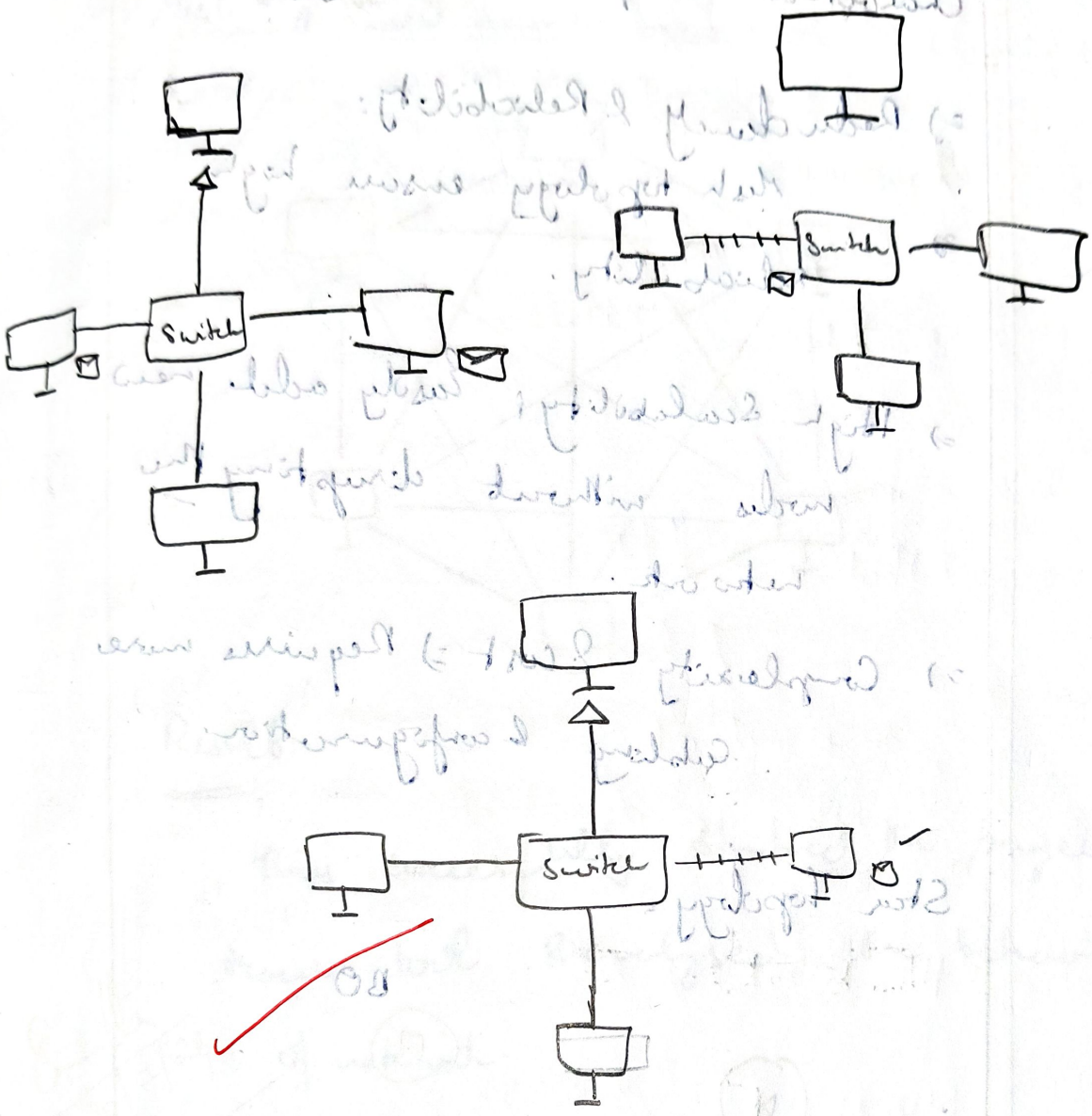
Switch uses Mac address to identify devices, when a packet is sent from one PC, the switch checks destination Mac addresses and forwarded the packet only to the port associated with Most addresses.

Hub:





Switch:



Network topology ~~used~~ implemented in our college is ~~store~~ Star & Mesh topology.

Characteristics of Star topology:

=> All cables run to a central connection point

=> If one cable breaks or fails, only the computer that is connected to that cable is unable to use the network.

=> A star topology is scalable.

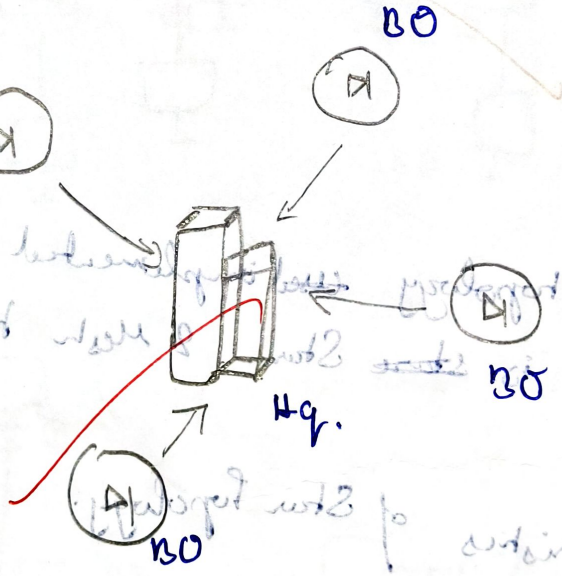
Characteristics of Mesh topology.

=) Redundancy & Reliability:
Mesh topology ensure high reliability.

=) High Scalability: Easily add new nodes without disrupting the network.

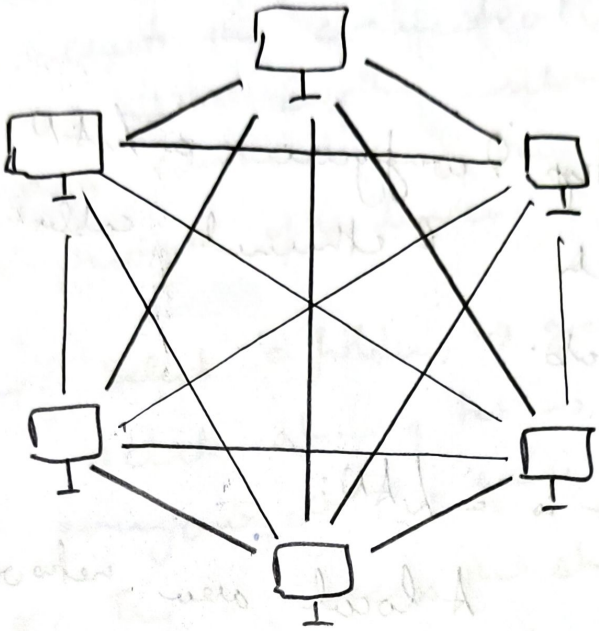
=) Complexity & cost => Requires more cabling & configuration.

Star Topology:



BO => Branch office
Hq => Headquarter.

Mesh topology.



Result:

Thus successfully studied the project tracer tool & analysed the behaviour of network.

30/7/24