Ex.no:3
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Practical -3

Aim:

To study the Packet tracer tool installation and User Interface Overview

Analyse the behaviour of network devices using CISCO PACKET TRACER simulator

1) From the network components box, click & drag-and-drop the below components:

   a) 4 Generic PCs and One HUB

   b) 4 Generic PCs and One switch

2) Click on Connections:

   a) Click on Copper Straight-Through cable,

   b) Select one of the PC and connect it to HUB using the cable. The link LED should glow in green, indicating that the link is up.

   c) Similarly Connect 4 PCs to the switch using copper straight-through cable.

3) Click on the PC's connected to hub, go to the Desktop tab, click on IP configuration, and enter an IP address and subnet mask. Here, the default gateway and DNS server information is not needed as there a

only two end devices in the network.

PC0

IP Configuration

IP Configuration

○ DHCP ⊙ Static

IP Address 10.1.1.1

Subnet Mask 255.0.0.0

Default Gateway

DNS Server

PC1

IP Configuration

IP Configuration

○ DHCP ⊙ Static

IP Address 10.1.1.1

Subnet Mask 255.0.0.0

Default Gateway

DNS Server

Click on the PDU (message icon) from the common tool bar, Drag and drop it on one of PC and then drop it on another PC connected to the HUB.

4) Observe the flow of PDU from source PC to destination PC by selecting the Real time mode ~~sim~~ simulation.

5) Repeat step #3 ~~to~~ setep #5 for the PCs connected to the switch

6) Observe how HUB and switch are forwarding the PDU and write your observation and conclusion about the behaviour of Switch and HUB.

Student observation:

a)

Switch:

Functionality: A switch operates at the data link layer of the OSI model.

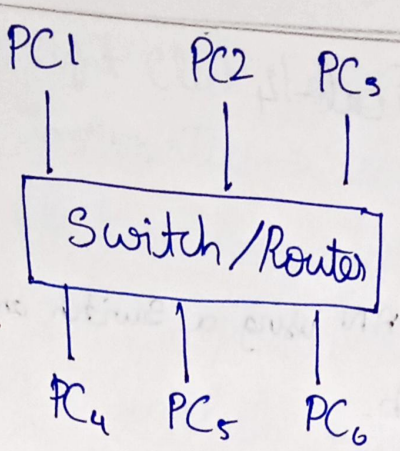
Packet Forwarding: A switch uses MAC addresses to forward data packets only to the specific port connected to the destination device. This reduces collisions and improves network efficiency

Behaviour: When a switch receives a packet, it checks the destination MAC address, look it up in its MAC address table, and forwards the packet only to the port associated with that address.

Hub Behaviours:

When a hub receives a packet, it amplifies the signal and forwards it to every device connected to the hub, leading to potential network collisions and reduced efficiency.

b) The network topology implement in our college is Star topology



Label:

- Each PC with unique identifier (eg., PC1, PC2, etc)
- Central device as 'Switch or Router'
- Straight lines show the cabling.

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Result:

Thus the output is verified successfully