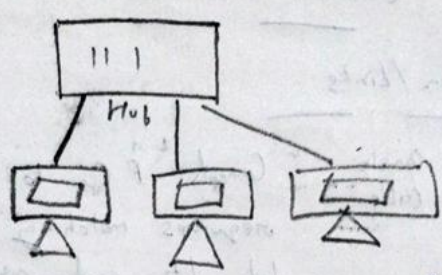


Program 1

Aim: Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping messages.

Topology , Procedure and Observation:

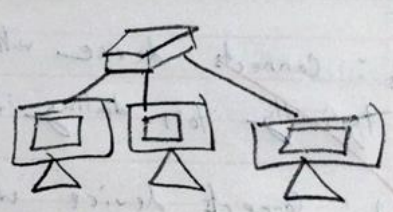
Hub:



A diagram showing a central rectangular box labeled 'Hub' with three lines extending downwards to three separate computer icons, each consisting of a monitor and a base.

- Operates at layer 1 (physical layer) of OSI model.
- It broadcasts data to all connected devices doesn't filter or manage traffic.
- Limited efficiency, more collisions occur due to simultaneous data transmission.

Switch:

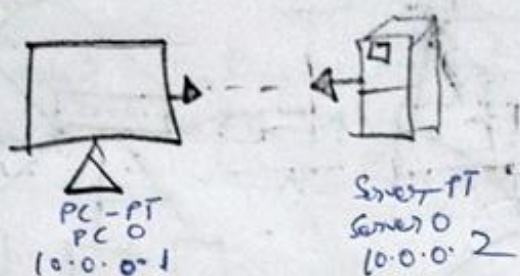


A diagram showing a central rectangular box with three lines extending downwards to three separate computer icons, each consisting of a monitor and a base.

- Operates at data link layer of OSI model.
- It forwards data only to the specific device for which it is int

Experiment 1

1. PC to server



Aim:- To set up a point network b/w a PC and a server, facilitating direct communication to observe data exchange.

Topology: A PC is connected to server using a crossover ethernet cable.

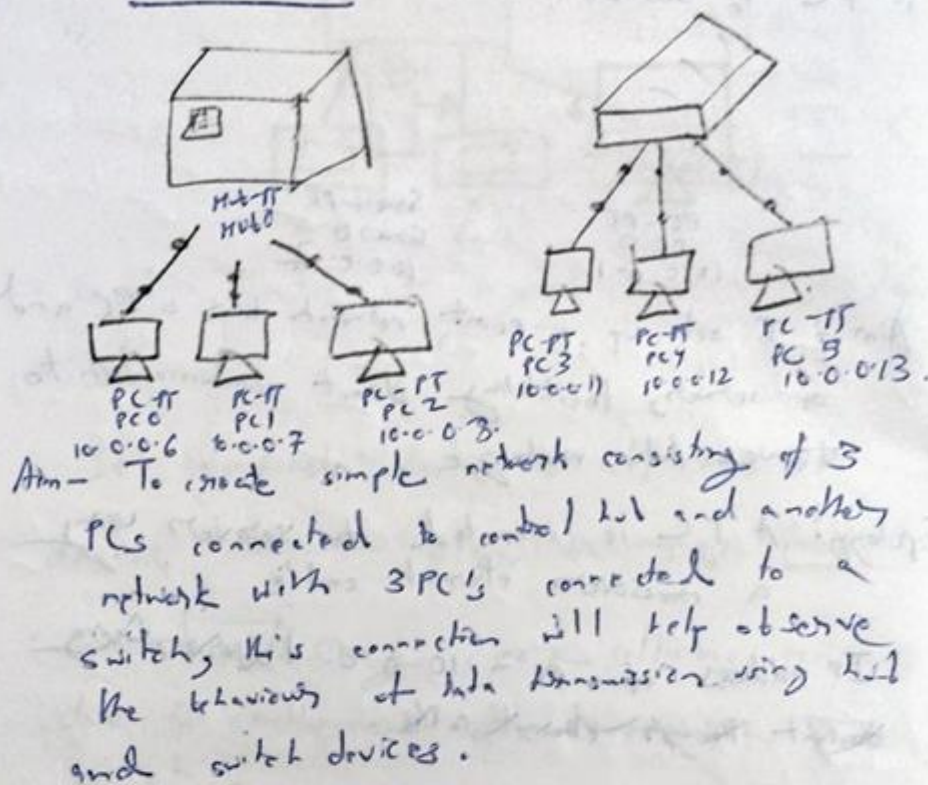
IP address of PC - 10.0.0.1 & server - 10.0.0.2
straight through ethernet cable.

Observation: Hub

IP address of PC - 10.0.0.1 & server - 10.0.0.2

Observation: Direct communication allows PC to communicate with server which is typical in small networks for tasks such as file sharing, service requests or testing server response to client queries.

2. Hub and switch



Topology: 3 PCs are connected to a hub and switch using straight through ethernet cables.

Observation: Hub broadcasts packets to all devices which may cause unnecessary traffic.

Switch forwards packets only to appropriate device by MAC address, making it more efficient in reducing traffic.

Screen Shots: