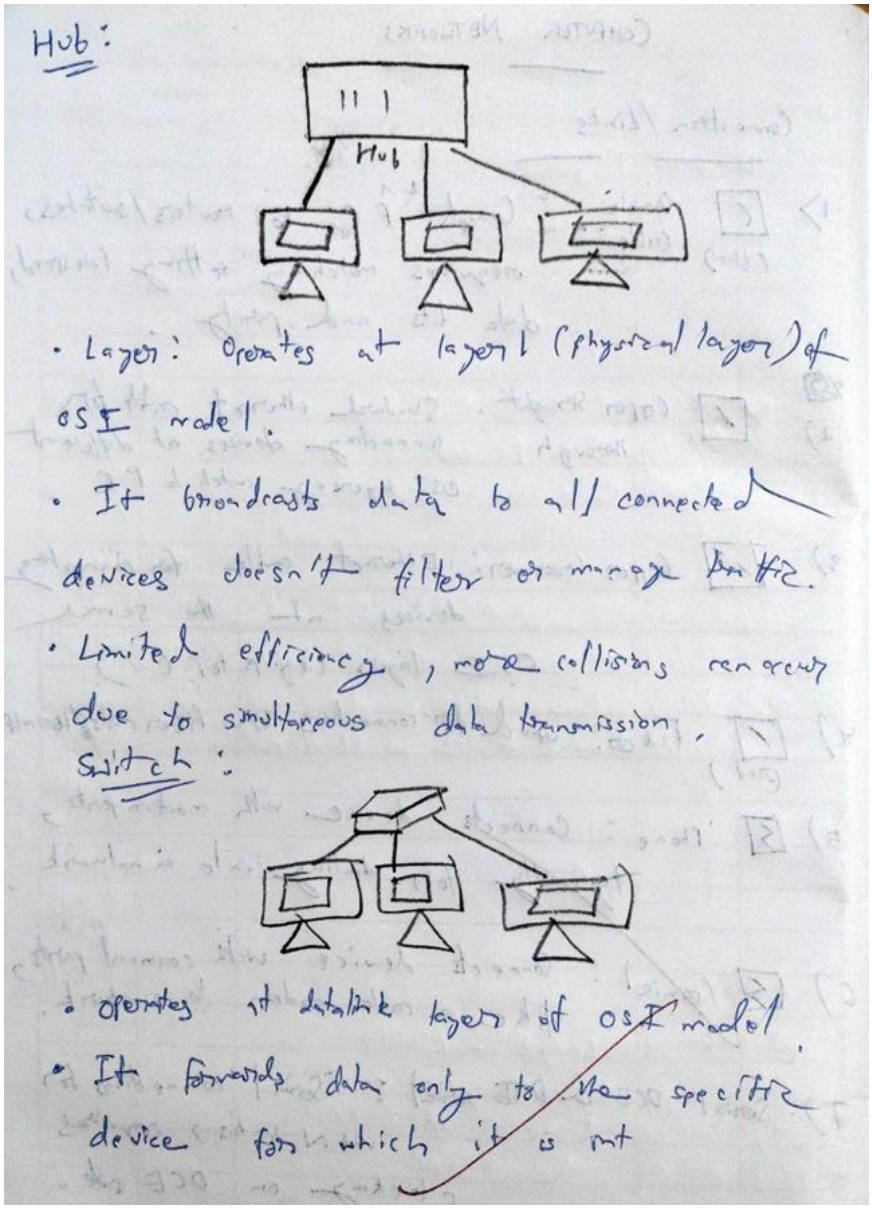
Program 1

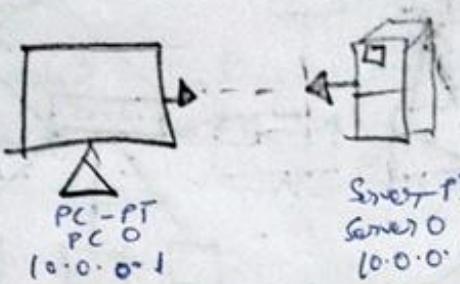
Aim: Create a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting devices and demonstrate ping messages.

Topology , Procedure and Observation:



Experiment 1

1. PC to server.



Aim:- To set up a point network t/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.

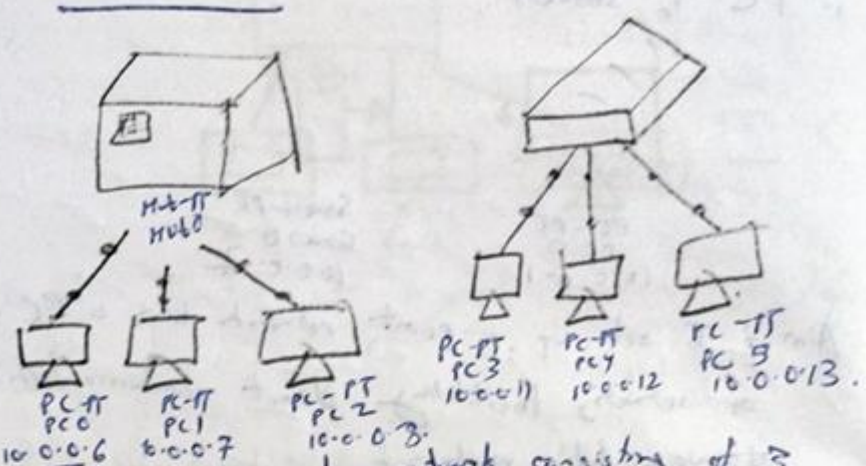
IP address of PC - 10.0.0.1 & server - 10.0.0.2.

~~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



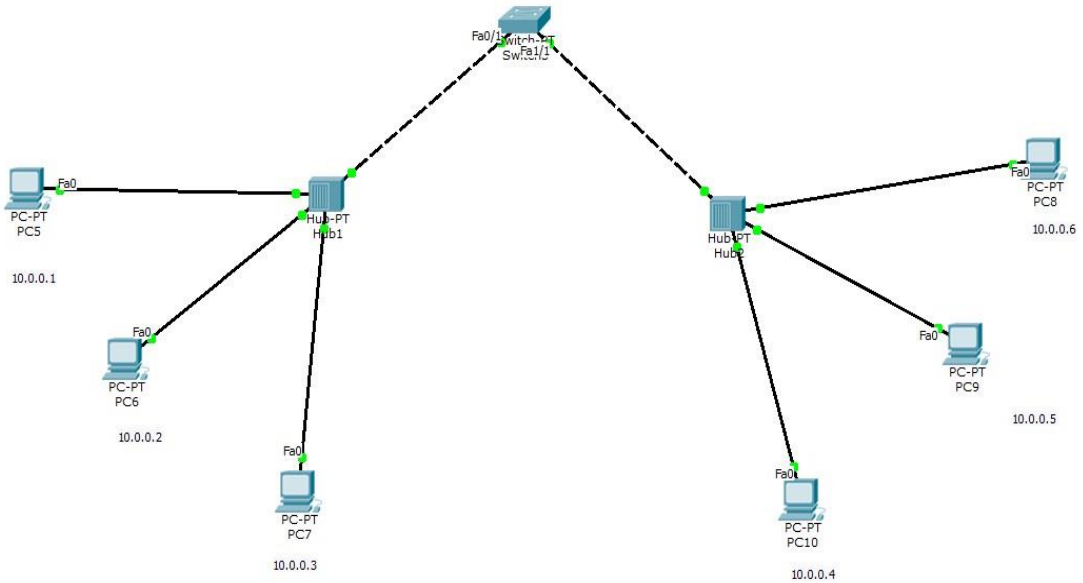
Aim – To create simple network consisting of 3 PCs connected to control hub and another network with 3 PCs connected to a switch, this connection will help observe the behaviour of data transmission using hub and switch devices.

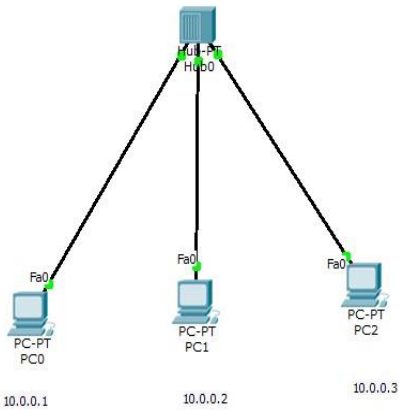
Topology: 3 PCs are connected to a hub and switch using straight through ethernet cables.

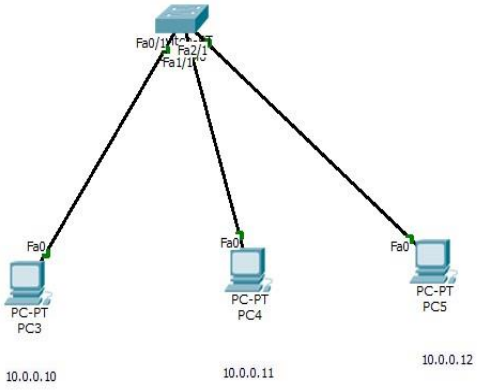
Observation: Hub broadcasts packets to all devices which may cause unnecessary traffic.

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

Screen Shots:


Fa0/1
Switch-PT
Fa1/1
Fa0
PC-PT
PC5
10.0.0.1
Hub-PT
Hub1
Fa0
PC-PT
PC6
10.0.0.2
Fa0
PC-PT
PC7
10.0.0.3
Hub-PT
Hub2
Fa0
PC-PT
PC8
10.0.0.6
Fa0
PC-PT
PC9
10.0.0.5
Fa0
PC-PT
PC10
10.0.0.4


Hub-PT
Hub0
Fa0
PC-PT
PC0
10.0.0.1
Fa0
PC-PT
PC1
10.0.0.2
Fa0
PC-PT
PC2
10.0.0.3


Fa0/1
Fa2/1
Fa1/1
Fa0
PC-PT
PC3
10.0.0.10
Fa0
PC-PT
PC4
10.0.0.11
Fa0
PC-PT
PC5
10.0.0.12