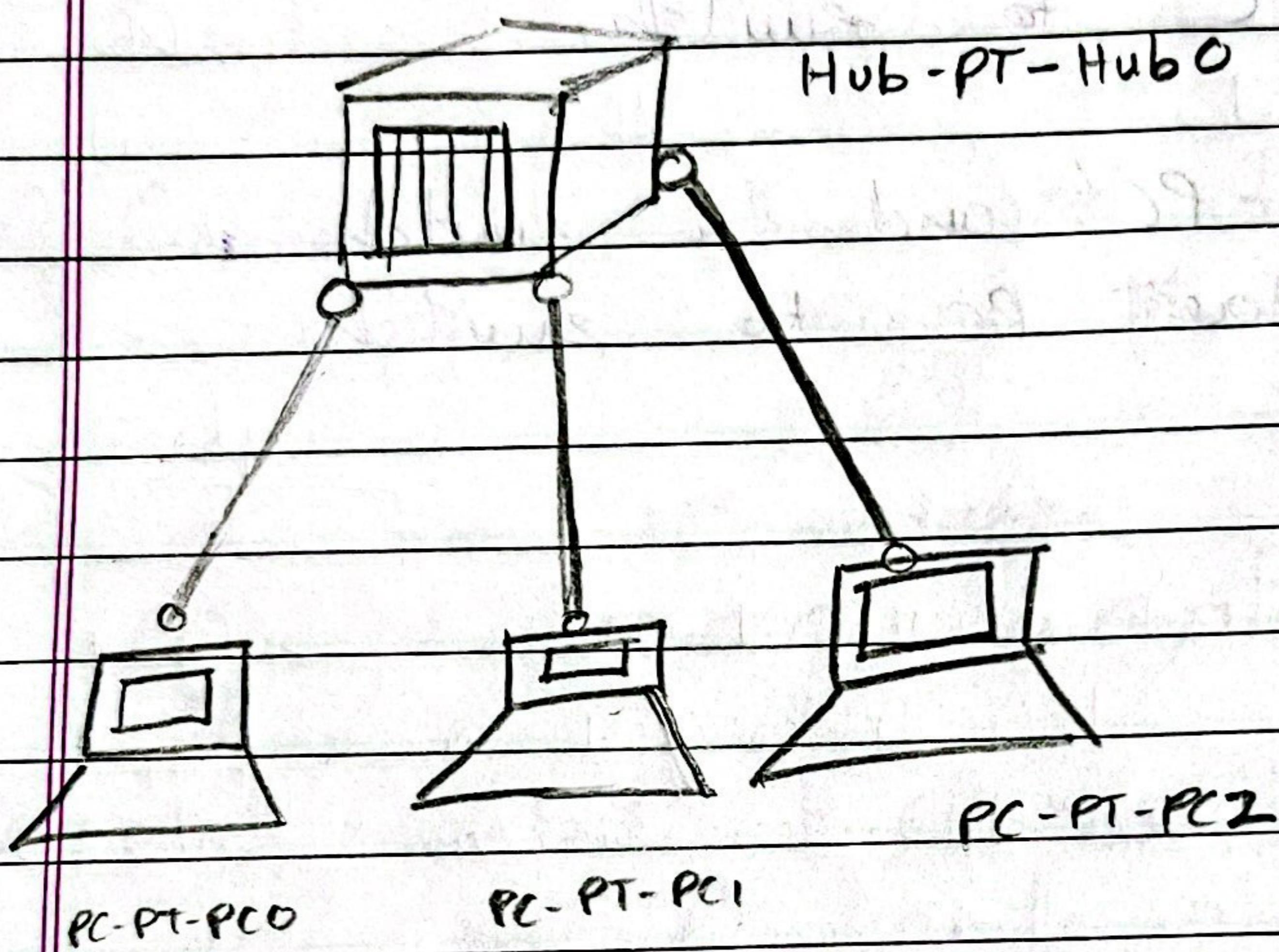


Aim:- Create a topology ~~for~~ hence simulate a simple PDU from source to destination using switch and hub as connecting domain.

Topology Hub to PC's



Procedure

- 1) Select 3 PC's and a hub
- 2) Connect 3 PC's to hub using copper straight through wire
- 3) Set IP address of PC's as 10.0.0.1, 10.0.0.2, 10.0.0.3 respectively
- 4) Now select source and destination PC and send a PDU packet for ex:- from PC-0 to PC-2
- 5) The PDU packet will go from PC-0 to PC-1 and PC-2 but will be accepted at PC-2 only

Observation:-

PDV packet is received at PC-2 as it is selected as destination PDV sent to PC-1 is discarded.

Output

Reply from 10.0.0.2 : byte = 32 time = 5ms TTL = 120
 Reply from 10.0.0.2 : byte = 32 time = 0ms TTL = 120
 Reply from 10.0.0.2 : byte = 32 time = 6ms TTL = 120
 Reply from 10.0.0.2 : byte = 32 time = 0ms TTL = 120

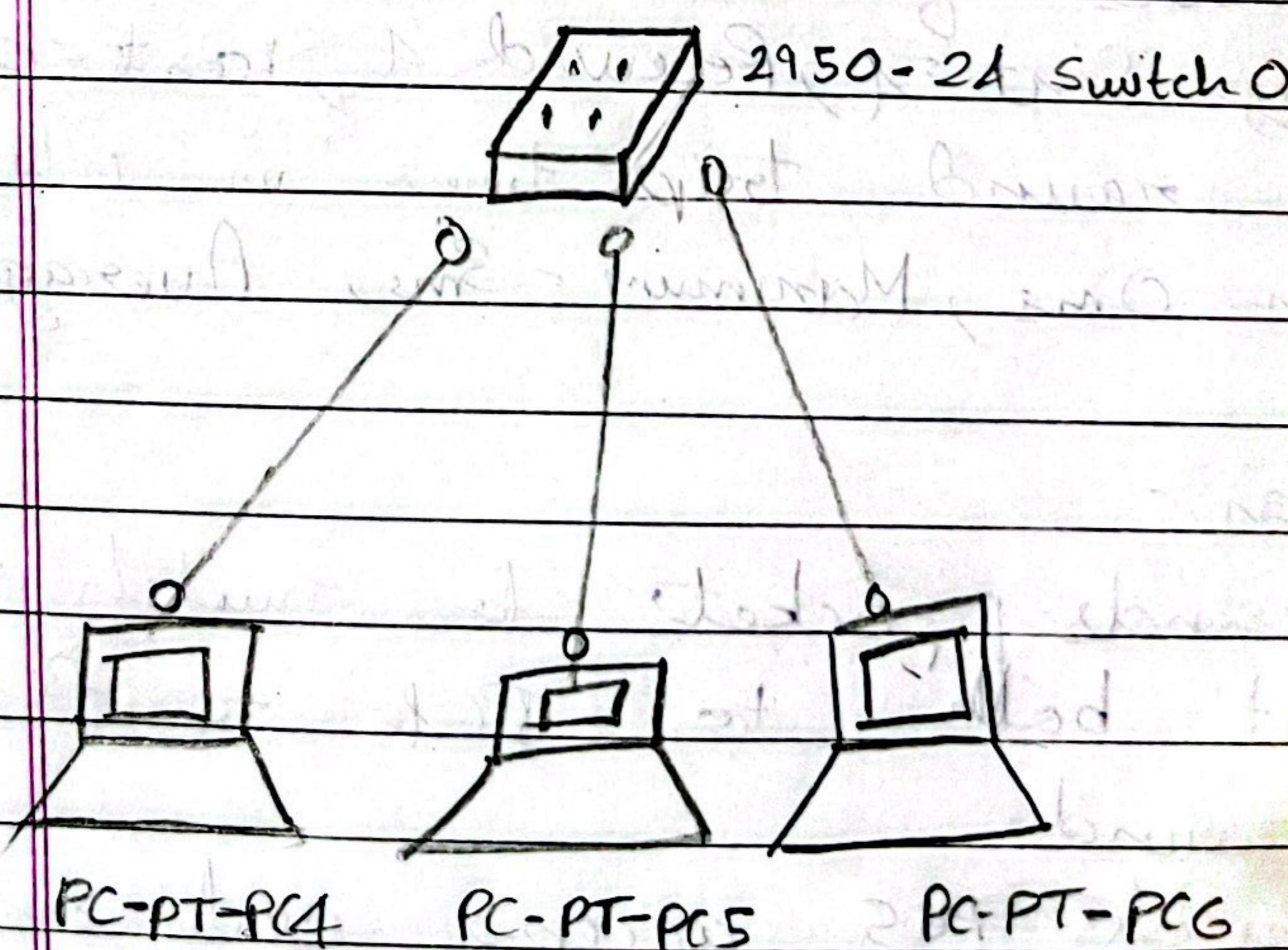
Ping Statistics for 10.0.0.2 :-

Packets : sent = 4 , Received = 4 , Lost = 0

Approximate round trip times in millisec

Minimum = 0ms , Maximum = 3ms , Average = 0m

Topology Switch to PC's



- 1) Select three PC's and switch
- 2) Connect them using copper straight through wire
- 3) Set IP address as 10.0.0.4, 10.0.0.5, 10.0.0.6 respectively from the PC's
- 4) Now select source and destination PC for the instance PC-3 to PC5 and send a packet.

Output

Reply from 10.0.0.6 : Bytes = 32 time = 0ms TTL = 120
 Reply from 10.0.0.6 : Bytes = 32 time = 0ms TTL = 120
 Reply from 10.0.0.6 : Bytes = 32 time = 0ms TTL = 120
 Reply from 10.0.0.6 : Bytes = 32 time = 0ms TTL = 120

Ping statistics for 10.0.0.6

Package = Sent = 4, Received = 4, lost = 0

Apparent round trip times in milli-seconds

Minimum = 0ms, Maximum = 3ms, Average = 0ms

Observation:-

PC 3 sends packet to switch and it sends it both to PC4 to PC5 in first round

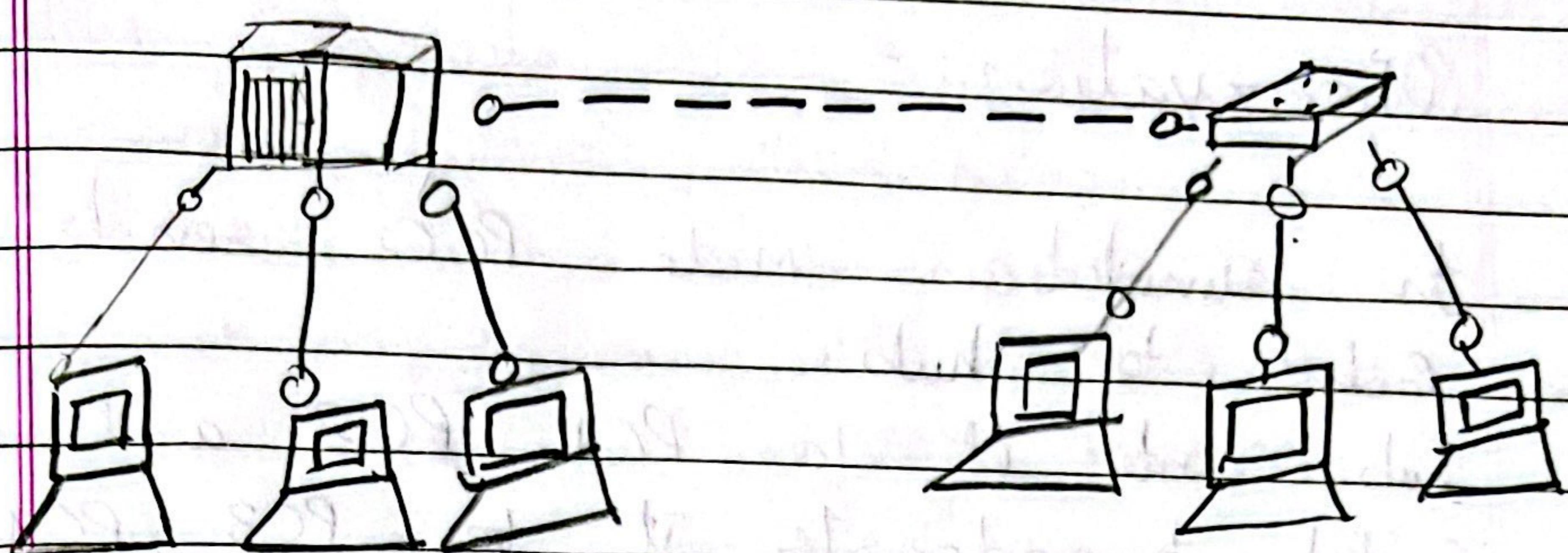
PC4 rejects PC5 accepts and send acknowledgement packet to both PC3 & PC5

R4 discards the PC3 and accept it

Now when PC3 sends packets it will only to PC5

Topology

PC, hub and switch

Procedure

- 1) Select 6 PC's and switch and hub
- 2) Connect 3 PC's to hub ~~and~~ and 3 PC's to switch using copper straight through wire and connect switch and hub using copper cross-over wire.
- 3) Set IP address of all 6 PC's respectively as 10.0.0.1 and so on.
- 4) Now select source and destination and send a PDU packet from PC-0 to PC-4

Output

Reply from 10.0.0.4 : bytes=32 time=0ms TTL=120
 Reply from 10.0.0.4 : bytes=32 time=0ms TTL=120
 Reply from 10.0.0.4 : bytes=32 time=4ms TTL=120
 Reply from 10.0.0.4 : bytes=32 time=0ms TTL=120

Ping statistics for 10.0.0.4:

Package : Sent=4, Received=4, Lost=0

Approx round trip time in milli-seconds:

Minimum = One, Maximum = ∞ , Average = $\frac{1}{n} \sum_{i=1}^n t_i$

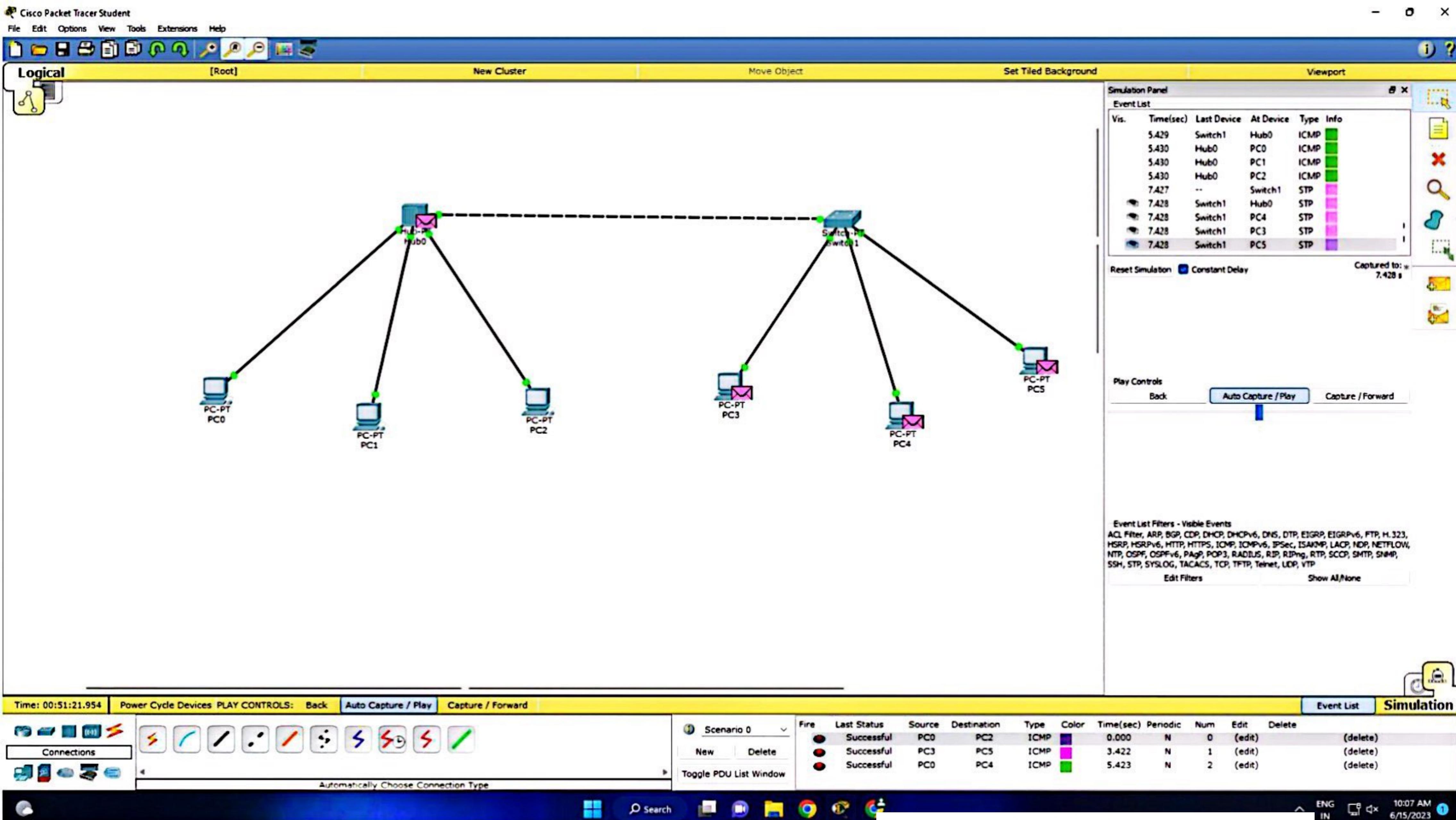
Observation:-

In simulation mode PC0 sends packet to hub. hub sends it to PC1, PC2 and switch broadcasts it to PC3, PC4 and PC5.

PC1, PC2, PC4 and PC5 discard them. PC3 accepts and sends acknowledgement to hub through switch. Only PC0 accepts others. In second round PC0 sends packet to hub. It broadcasts to PC1, PC2, switch.

Switch broadcasts only to PC3 thus hub is a smart device.

1/6/0



Scanned with CamScanner

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 192.160.1.5

Pinging 192.160.1.5 with 32 bytes of data:

Reply from 192.160.1.5: bytes=32 time=0ms TTL=128

Ping statistics for 192.160.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.160.1.5

Pinging 192.160.1.5 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.160.1.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>192.160.1.2
Invalid Command.

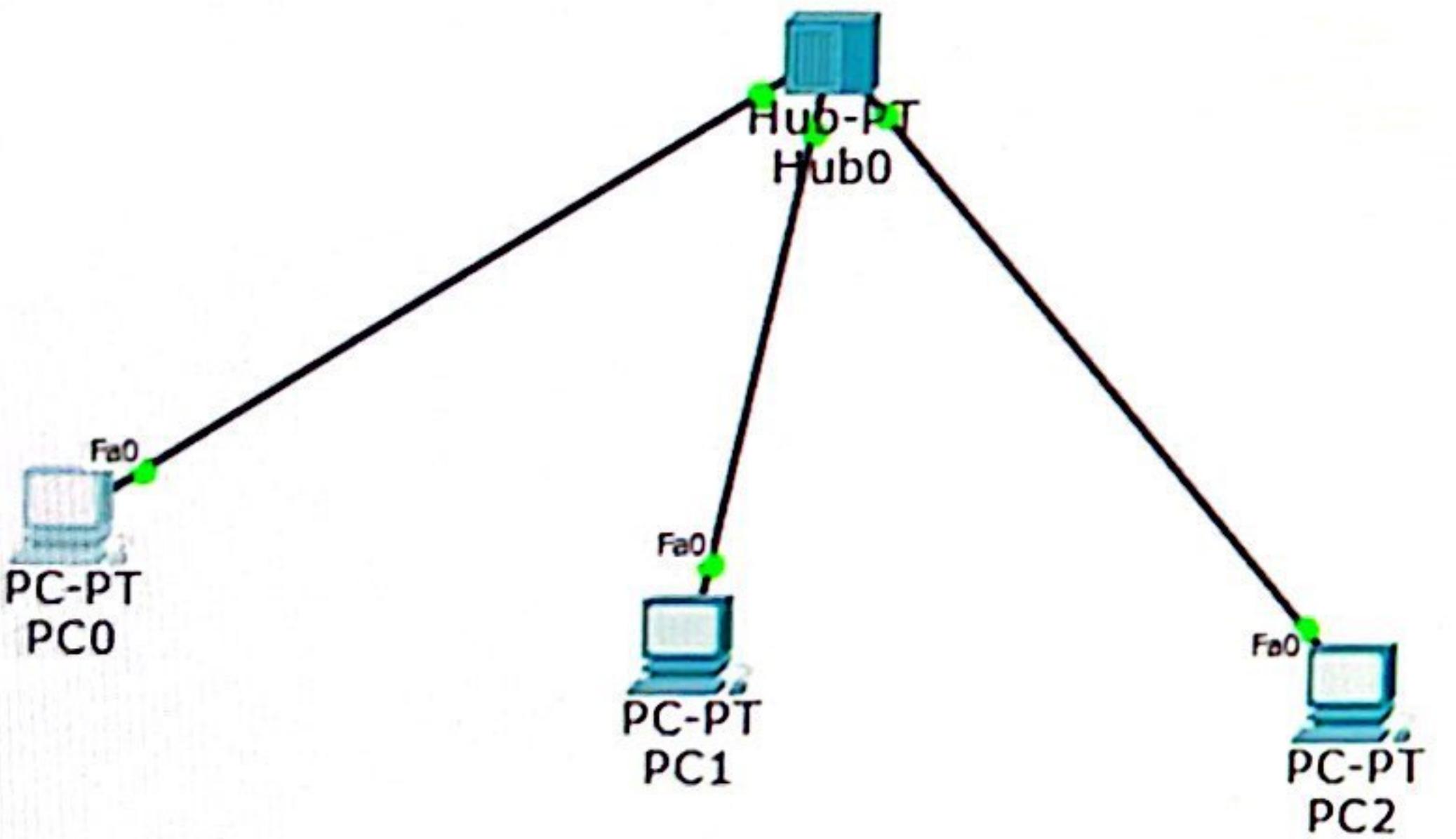
PC>ping 192.160.1.2

Pinging 192.160.1.2 with 32 bytes of data:

Reply from 192.160.1.2: bytes=32 time=0ms TTL=128

Ping statistics for 192.160.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```



Command Prompt

```
Packet Tracer PC Command Line 1.0  
PC>ping 10.0.0.3
```

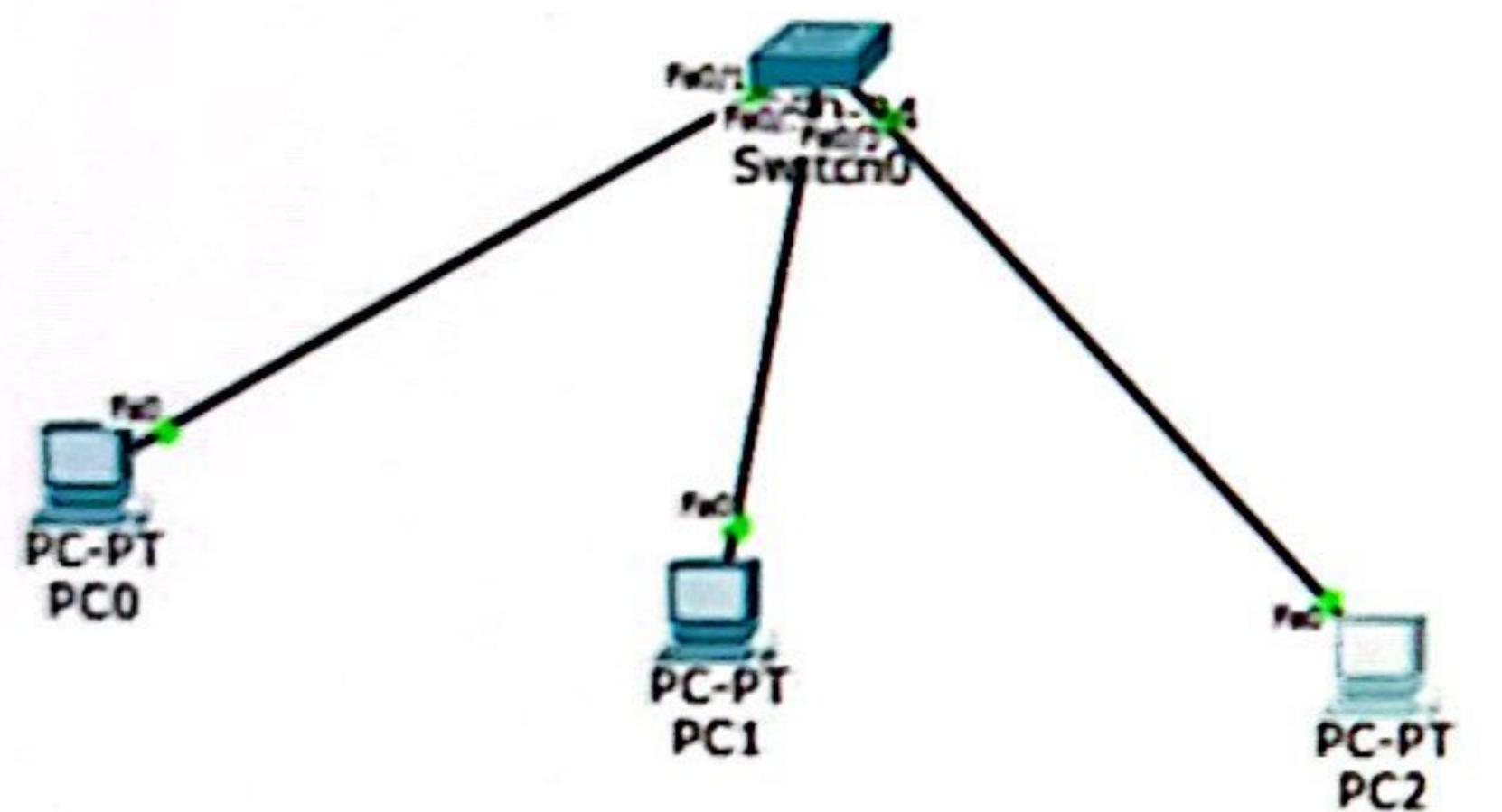
```
Pinging 10.0.0.3 with 32 bytes of data:
```

```
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128  
Reply from 10.0.0.3: bytes=32 time=2ms TTL=128  
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128  
Reply from 10.0.0.3: bytes=32 time=2ms TTL=128
```

```
Ping statistics for 10.0.0.3:
```

```
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
  Approximate round trip times in milli-seconds:  
    Minimum = 0ms, Maximum = 2ms, Average = 1ms
```

```
PC>
```



PC2

Physical Config Desktop Custom Interface

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=1ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```