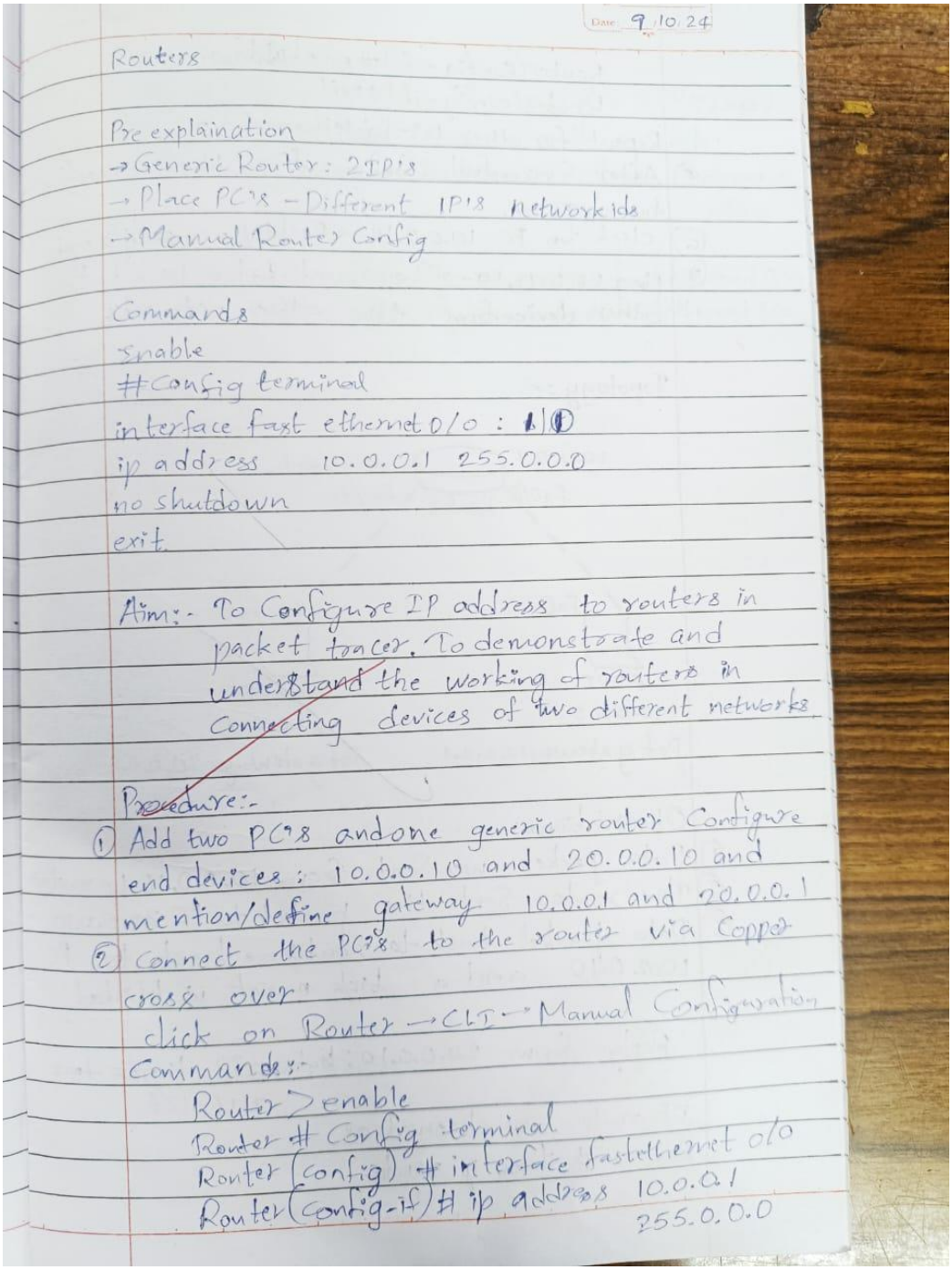
LABORATORY PROGRAM – 1

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



Date 9.10.24

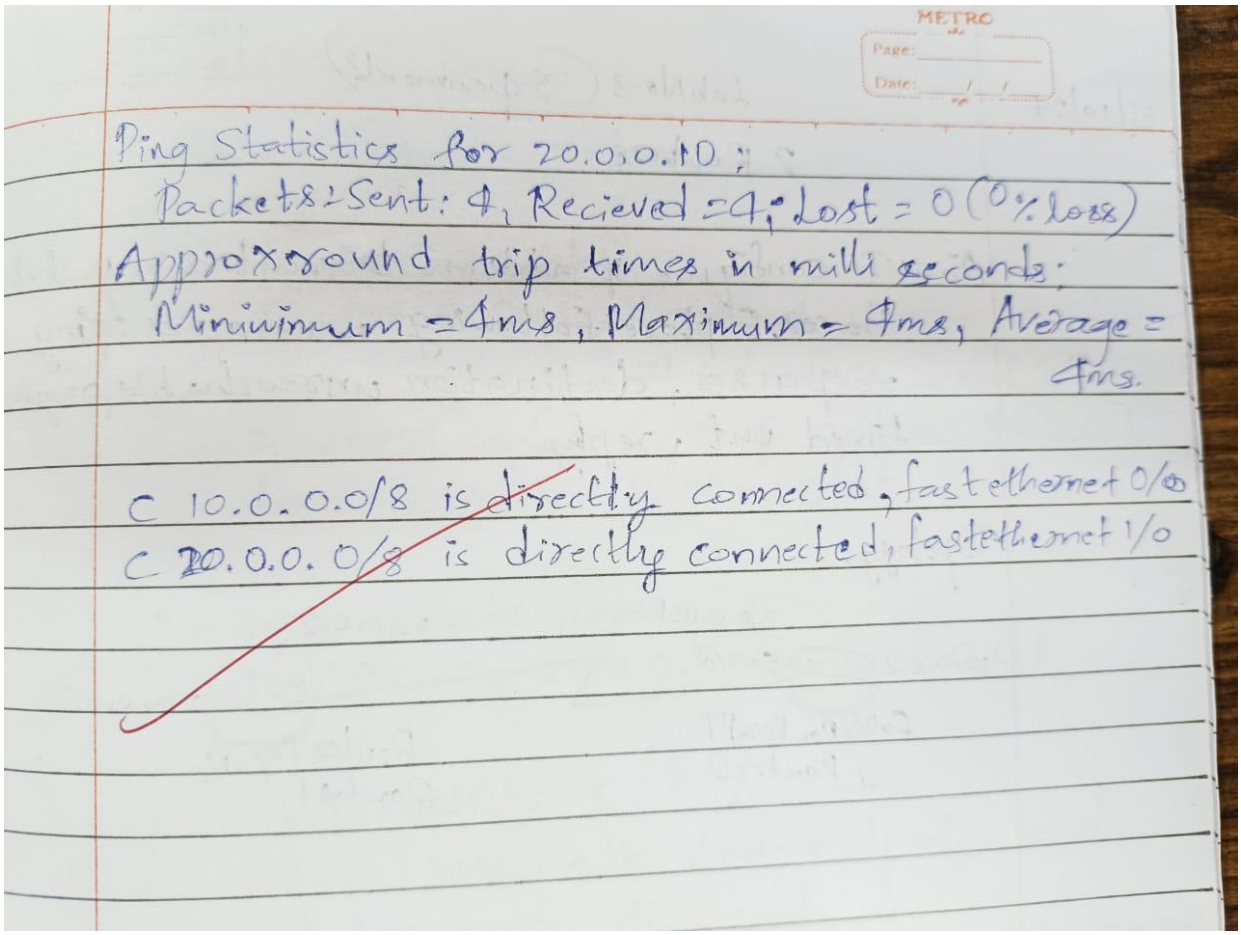
Routers

Be explaination
→ Generic Router : 2 IP's
→ Place PC's - Different IP's network ids
→ Manual Router Config

Commands
enable
#Config terminal
interface fast ethernet 0/0 : 1 | 0
ip address 10.0.0.1 255.0.0.0
no shutdown
exit

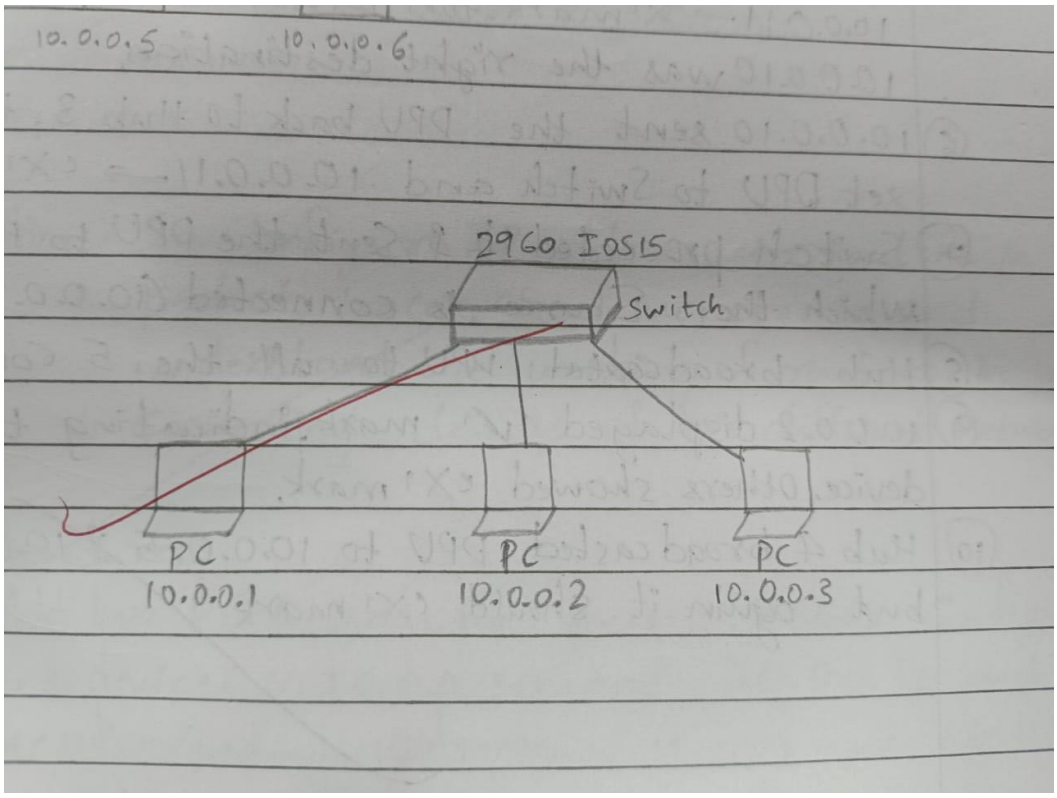
Aim:- To Configure IP address to routers in packet tracer. To demonstrate and understand the working of routers in connecting devices of two different networks

Procedure:-
① Add two PC's and one generic router Configure end devices : 10.0.0.10 and 20.0.0.10 and mention/define gateway 10.0.0.1 and 20.0.0.1
② Connect the PC's to the router via Copper cross over
click on Router → CLI - Manual Configuration
Commands:-
Router > enable
Router # Config terminal
Router (config) # interface fastethernet 0/0
Router (config-if) # ip address 10.0.0.1
255.0.0.0

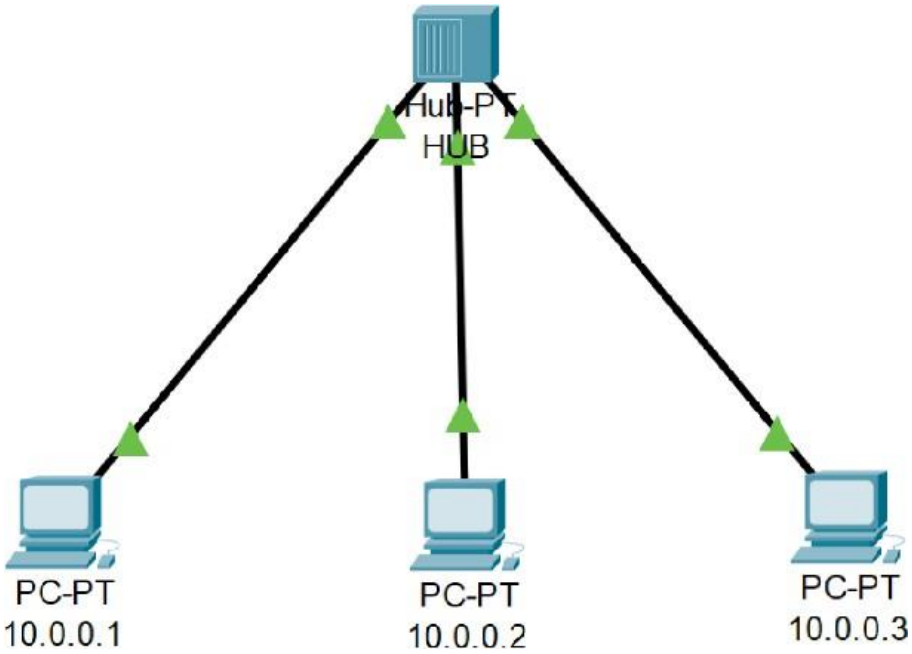


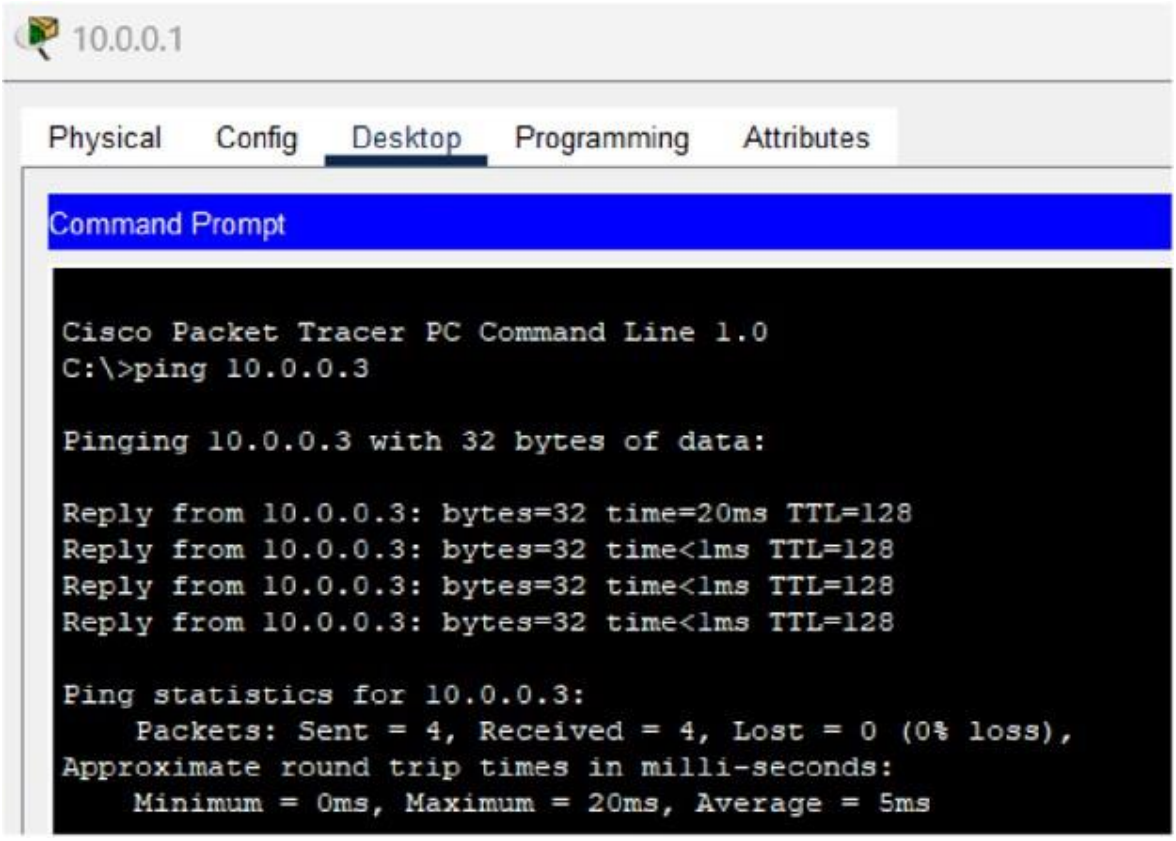
Ping Statistics for 20.0.0.10 ;
Packets: Sent: 4, Recieved = 4, Lost = 0 (0% loss)
Approximate round trip times in milli seconds:
Minimum = 4ms, Maximum = 4ms, Average = 4ms.

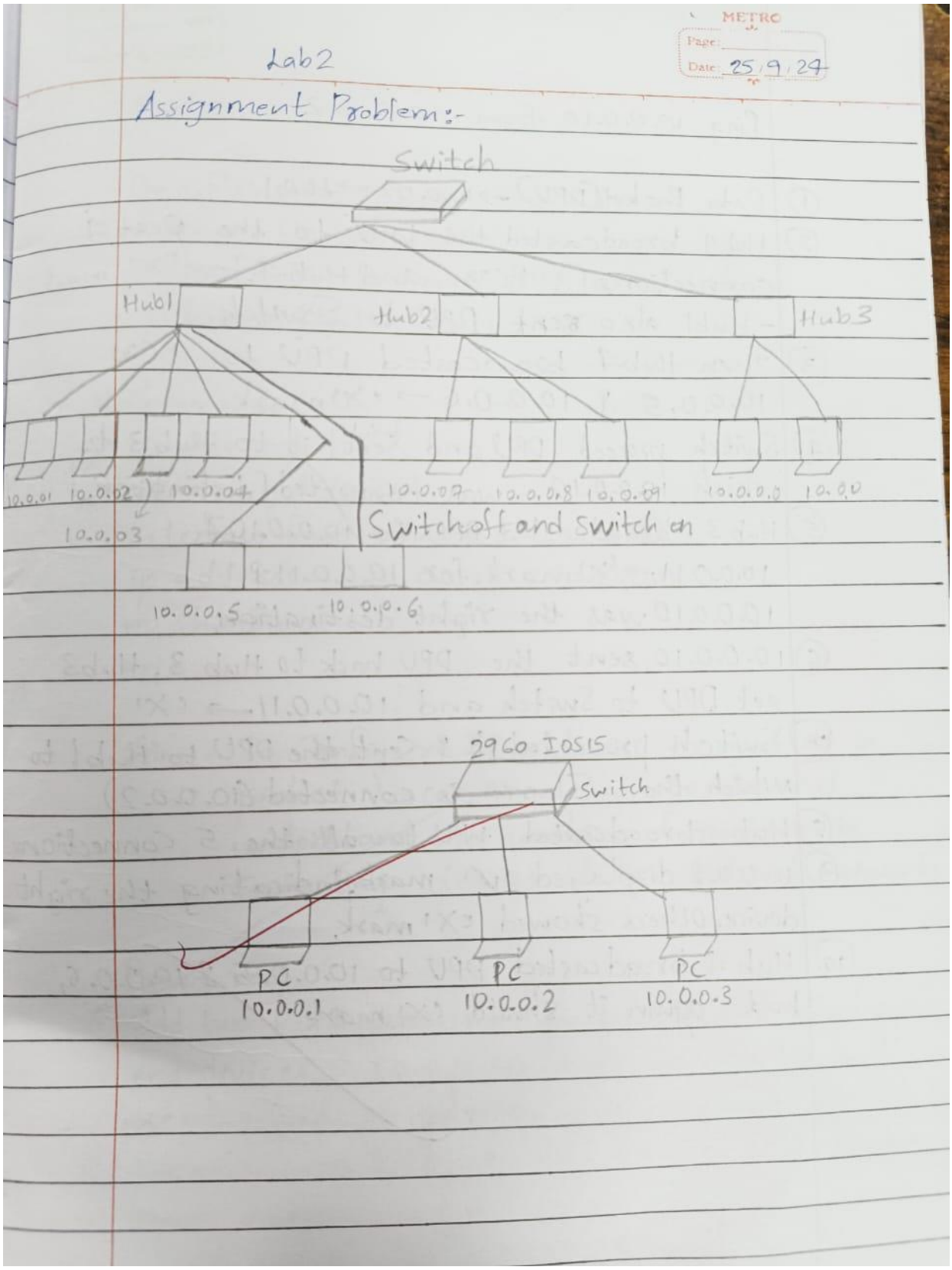
C 10.0.0.0/8 is directly connected, fastethernet 0/0
C 20.0.0.0/8 is directly connected, fastethernet 1/0

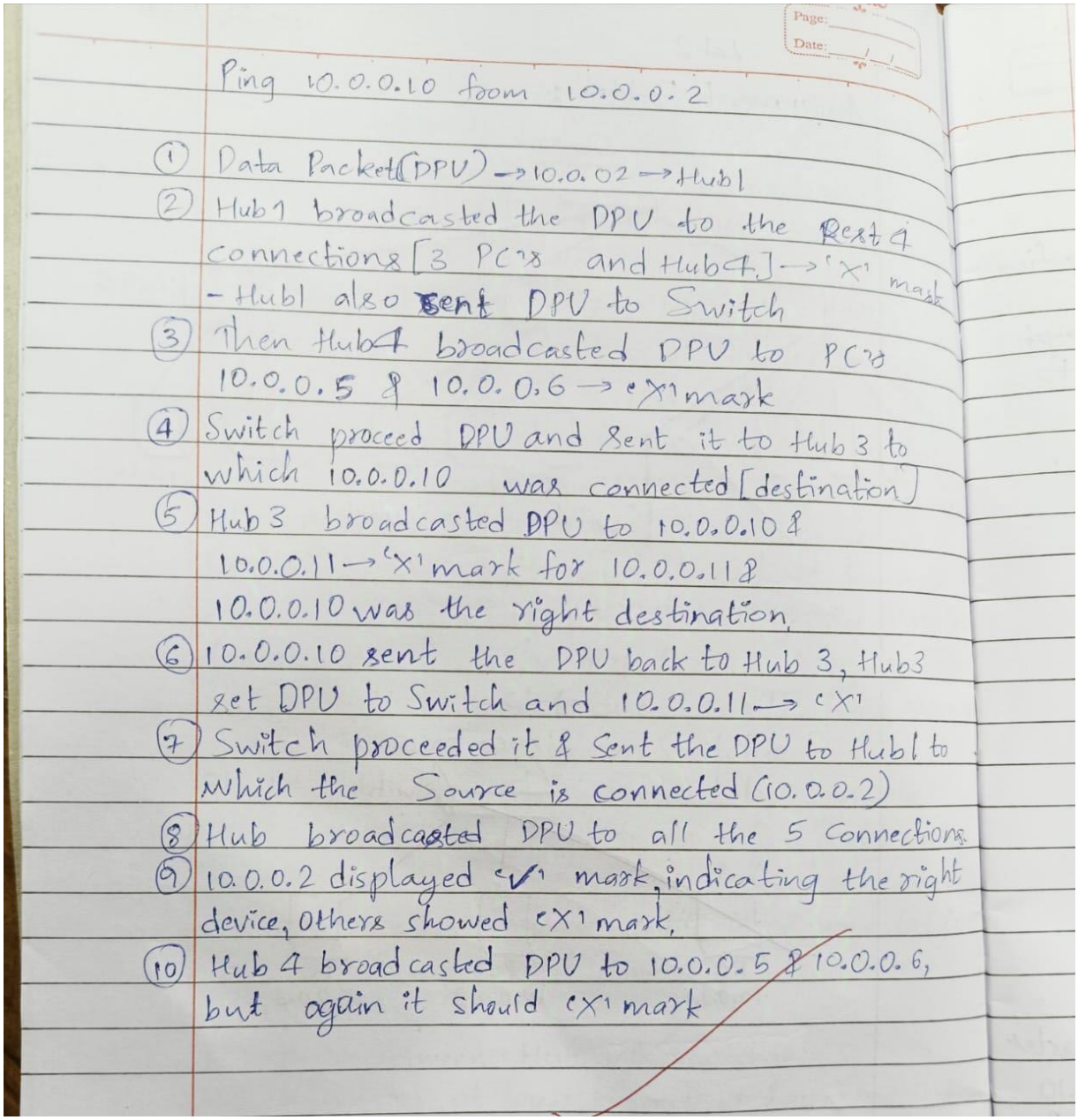

10.0.0.5
10.0.0.6
2960 IOS15
Switch
PC
10.0.0.1
PC
10.0.0.2
PC
10.0.0.3

Screenshot:


Hub-PT
HUB
PC-PT
10.0.0.1
PC-PT
10.0.0.2
PC-PT
10.0.0.3

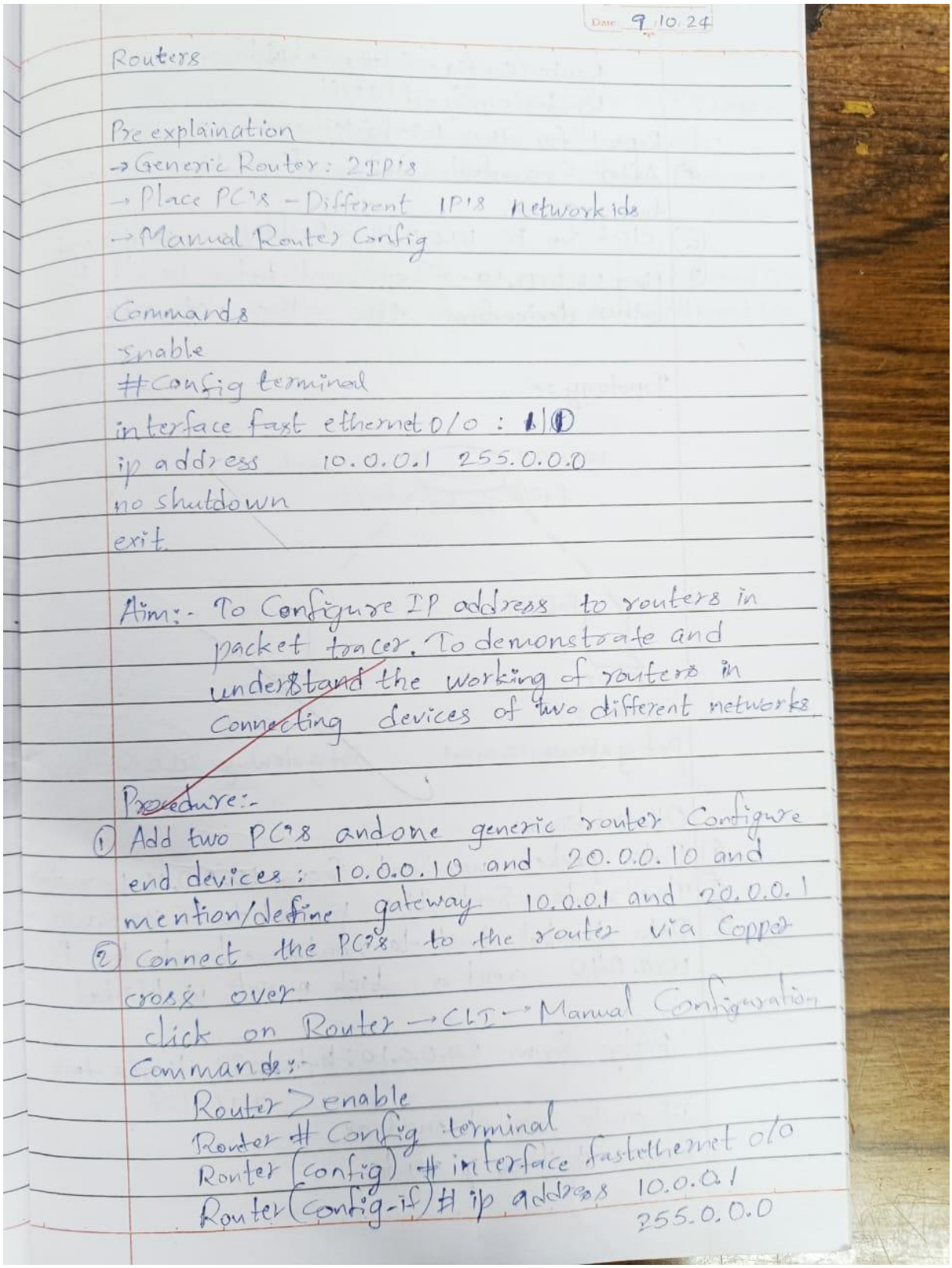

10.0.0.1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.3
Pinging 10.0.0.3 with 32 bytes of data:
Reply from 10.0.0.3: bytes=32 time=20ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms 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 = 20ms, Average = 5ms


METRO
Page:
Date: 25/9/24
Lab2
Assignment Problem:-
Switch
Hub1
Hub2
Hub3
10.0.0.1
10.0.0.2
10.0.0.3
10.0.0.4
10.0.0.5
10.0.0.6
10.0.0.7
10.0.0.8
10.0.0.9
Switch off and switch on
2960 IOS15
switch
PC
10.0.0.1
PC
10.0.0.2
PC
10.0.0.3



Ping 10.0.0.10 from 10.0.0.2

1. Data Packet(DPU) → 10.0.0.2 → Hub1
2. Hub1 broadcasted the DPU to the Rest 4 connections [3 PCs and Hub4.] → 'X' mark - Hub1 also sent DPU to Switch
3. Then Hub4 broadcasted DPU to PCs 10.0.0.5 & 10.0.0.6 → 'X' mark
4. Switch proceed DPU and sent it to Hub 3 to which 10.0.0.10 was connected [destination]
5. Hub 3 broadcasted DPU to 10.0.0.10 & 10.0.0.11 → 'X' mark for 10.0.0.11 & 10.0.0.10 was the right destination.
6. 10.0.0.10 sent the DPU back to Hub 3, Hub3 set DPU to Switch and 10.0.0.11 → 'X'
7. Switch proceeded it & sent the DPU to Hub1 to which the Source is connected (10.0.0.2)
8. Hub broadcasted DPU to all the 5 connections.
9. 10.0.0.2 displayed '✓' mark, indicating the right device, others showed 'X' mark.
10. Hub 4 broadcasted DPU to 10.0.0.5 & 10.0.0.6, but again it should 'X' mark



Date 9/10/24

Routers

Pre explaination
→ Generic Router: 2 IP's
→ Place PC's - Different IP's network ids
→ Manual Router Config

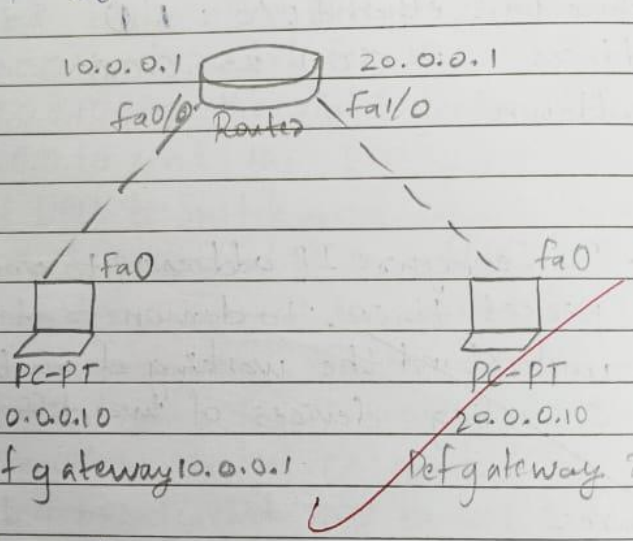
Commands
enable
#Config terminal
interface fast ethernet 0/0 : 1/0
ip address 10.0.0.1 255.0.0.0
no shutdown
exit

Aim:- To Configure IP address to routers in packet tracer. To demonstrate and understand the working of routers in Connecting devices of two different networks

Procedure:-
① Add two PC's and one generic router Configure end devices : 10.0.0.10 and 20.0.0.10 and mention/define gateway 10.0.0.1 and 20.0.0.1
② Connect the PC's to the router via Copper cross over
click on Router → CLI → Manual Configuration
Commands:-
Router > enable
Router # Config terminal
Router (config) # interface fastethernet 0/0
Router (config-if) # ip address 10.0.0.1
255.0.0.0

Router(config-if)#no shutdown
Router(config-if)#exit
Repeat for other PC: fastethernet 1/0
⑤ After Successfull Configuration, the connection turns green.
⑥ click on PC 10.0.0.10 → Desktop → Command prompt
⑦ ping 20.0.0.10 → To Send data packet to other device from the other networks.

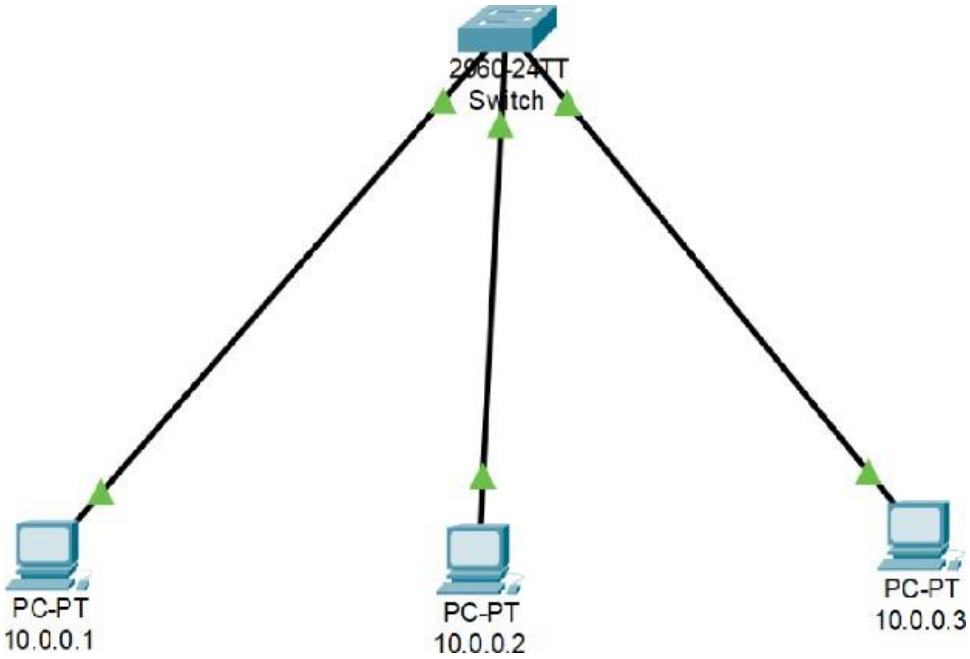
Topology :-



Observations:-
① Data packet was Sent from 10.0.0.10 to router
② The router Sent the packet to PC 20.0.0.10
③ Data packet bash to router → back to PC 10.0.0.10 and a tick mark is blinked

Reply from 20.0.0.10: bytes=32 time=4ms TTL=127

IP route was observed as;
Router # show ip route



10.0.0.1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms TTL=128
Reply from 10.0.0.3: bytes=32 time<1ms 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 = 0ms, Average = 0ms
```