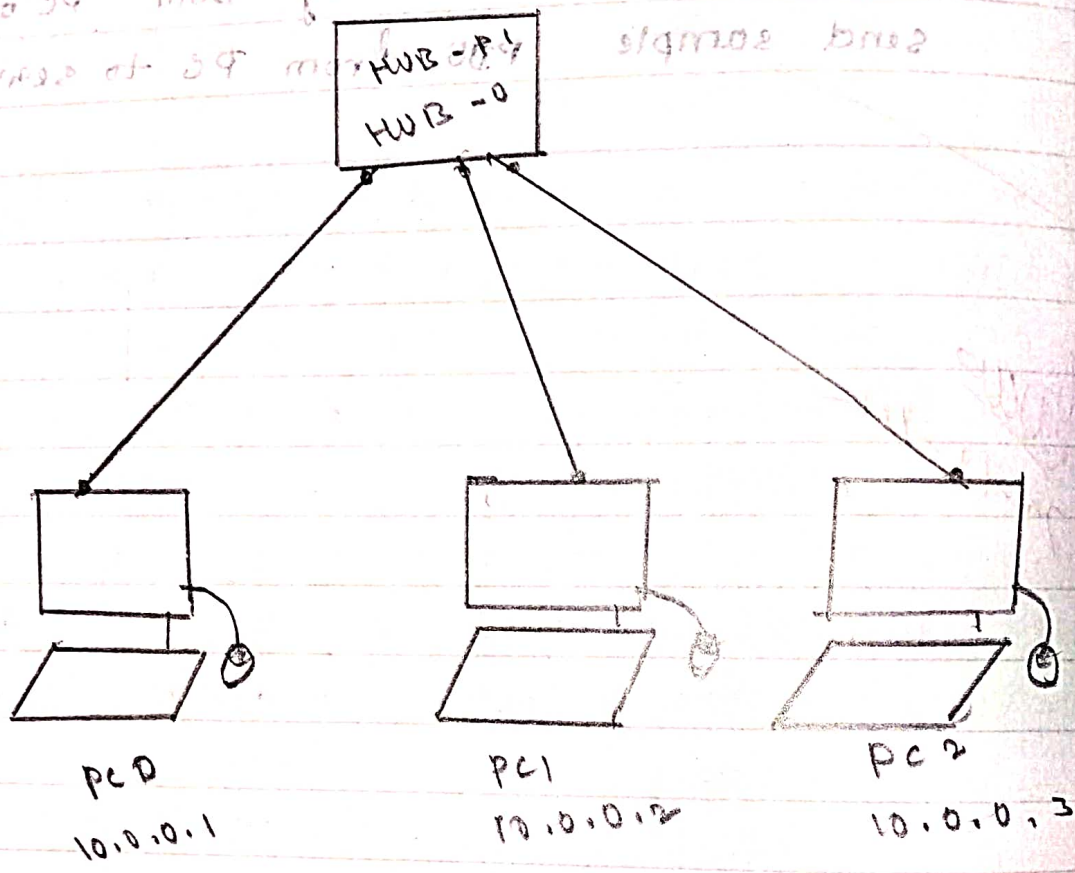
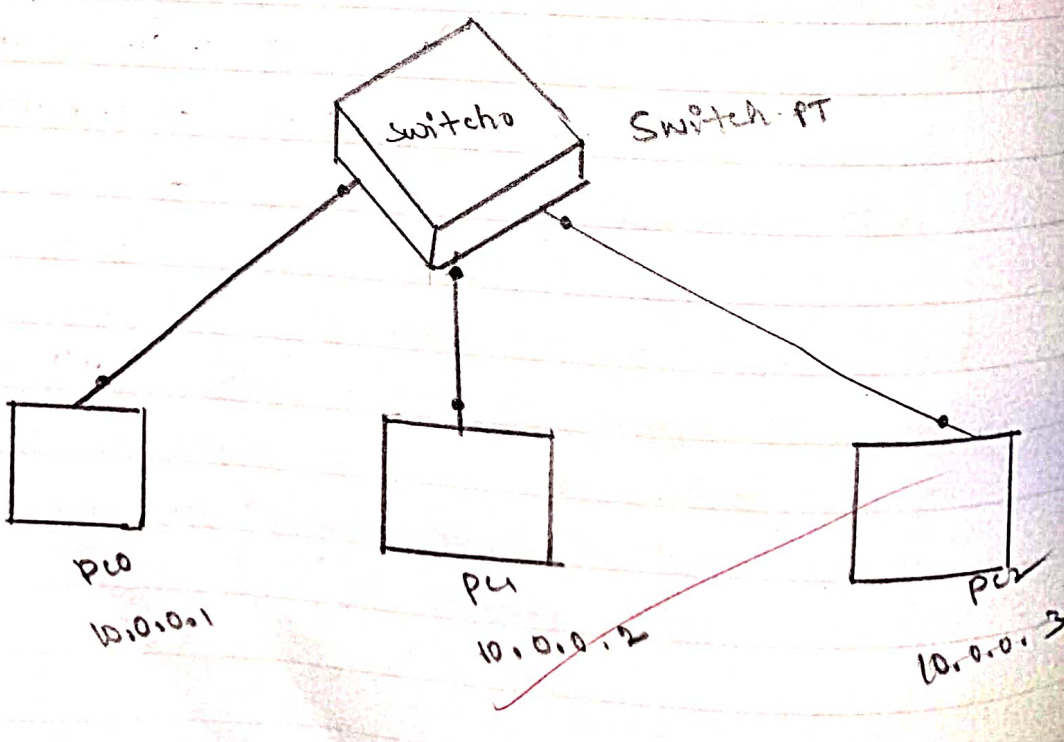
Topology:-


HUB-PT
HUB-0
PC0
10.0.0.1
PC1
10.0.0.2
PC2
10.0.0.3


switch0
Switch-PT
PC0
10.0.0.1
PC1
10.0.0.2
PC2
10.0.0.3

Lab-1

chandra's Dt: Pg:

Aim: Creating a topology and simulate, sending a simple PDU from source to destination using hub and switch as connecting devices

Procedure:

Hub:-

1. Place 7 generic PC's and 1 generic hub in logical workspace and all 7 PC's are connected to hubby copper straight wire.
2. Set each PC's with IP address from 10.0.0.0
3. to 10.0.0.6 respectively and connect each PC to hub copper straight wire
3. A simple PDU is placed on any 2 devices and messag / packet passing can be seen in simulation mode by clicking autocapture
4. In realtime mode a command prompt is opened for certain PC and following command is given to transfer message PING destination IP address

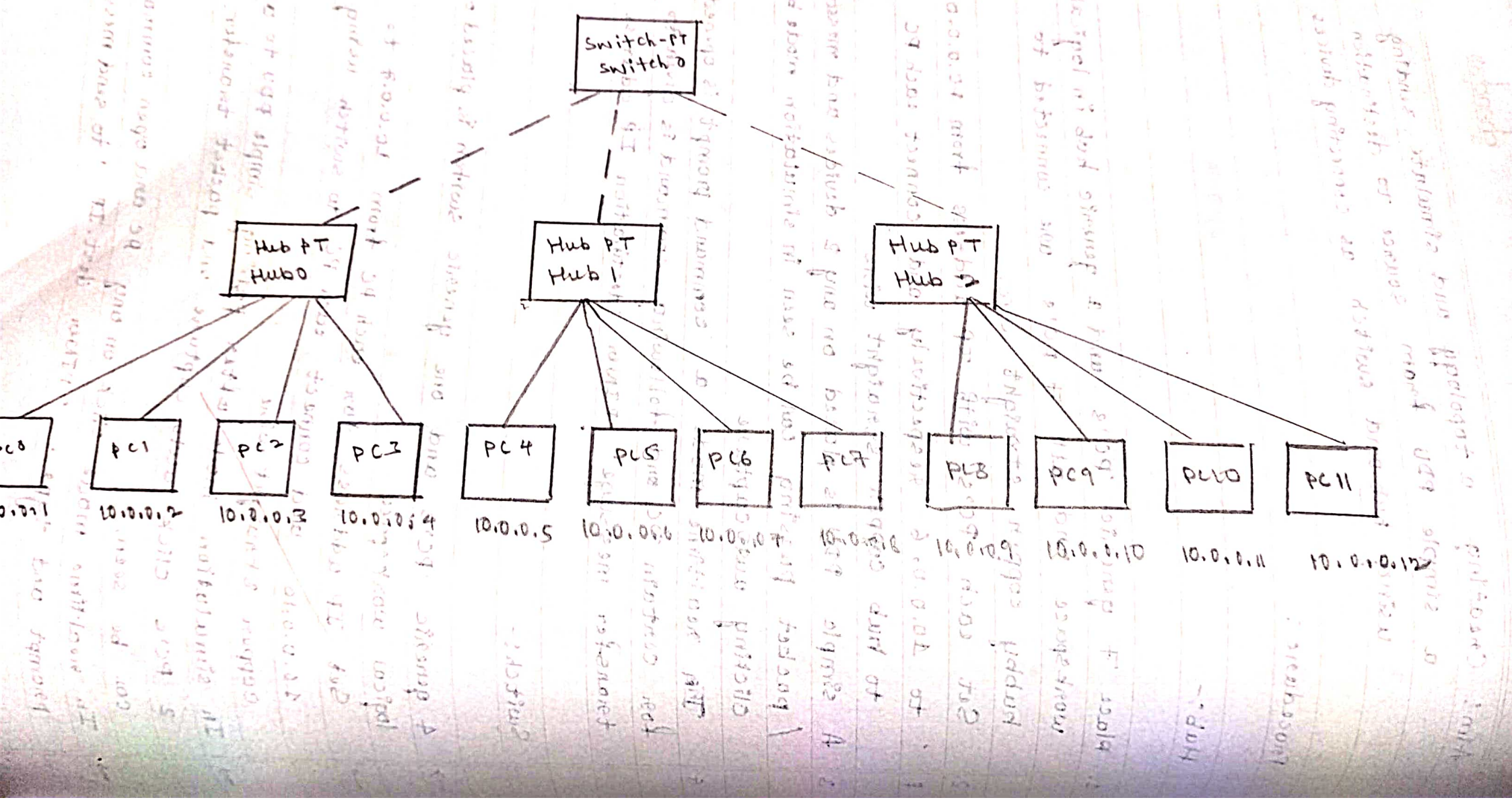
Switch:-

→ 4 generic PC's and one generic switch is placed on logical workspace

→ Set IP address for each PC from 10.0.0.7 to 10.0.0.10 and connect each PC to switch using copper straight wire.

→ In simulation mode after pairing simple PDU to any 2 PC's click auto capture and packet transfer can be seen.

→ In realtime mode click on any PC and open command prompt and type . ' PING dest. IP ' to send message


Switch-PT
switch 0
Hub PT
Hub 0
Hub PT
Hub 1
Hub PT
Hub 2
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
PC11
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
10.0.0.10
10.0.0.11
10.0.0.12

chandra's
Dt: Pg:

* Hybrid

→ 12 PC's · 3hubs, 1-switch all genre's are placed onto logical workspace.

→ 3-generic hubs are connected to switch using copper cross-over wire and 12 PC's are connected to 3 hubs, 4PC each using copper straight wire assigning IP adress for each PC from 10.0.0.0 to 10.0.0.11 respectively.

→ After selecting 2 PC's from different hubs with simple-PDU and clicking on autocapture, packing passing simulation can be seen in simulation mode.

→ In realtime mode open command prompt by clicking any · PC → devices → 'command prompt and type 'PINGr dest IP-address' to send packet

* Observations:

* Hub:

→ learning outcome - After source sends message to hub it is broadcasted to all end devices but only destination 'device 'reads and sends response back to hubs for source to get response

→ Hub establishes connection to end devices quickly and signals by green-light

Result:

PINGr 10.0.0.3

PINGrINGr 10.0.0.3 with 32 bytes of data

REPLYFROM 10.0.0.3 bytes=3 · time=0ms

PINGr STATISTICS FOR 10.0.0.3 ·

DETAILS, OF 'how many packets sent and received

chandra's
Dt: Pg:

* Switch :

learning observation:

→ Unlike hub, switch doesnot given green signals immidiately but takes some amount of time called learning time. and the packets can be sent once green signal can be sent once green signal is generated.

→ Initially switch also broadcasts for all end-devices and the next time, the communications happens and message passing types only between ~~and message pass.~~ source and destination devices.

* Result :

PING 10.0.0.5

PINGING 10.0.0.5 with 32 bytes of data

PING STATISTICS FOR 10.0.0.3

"Details of how many packets sent and recieved"

* Hybrid :

learning outcome:

→ Message sent by one PC of one hub to switch is sent to destination hub which broadcast to all devices of that hub and only destined end-devices sends back respons to source of other hub.

Result:

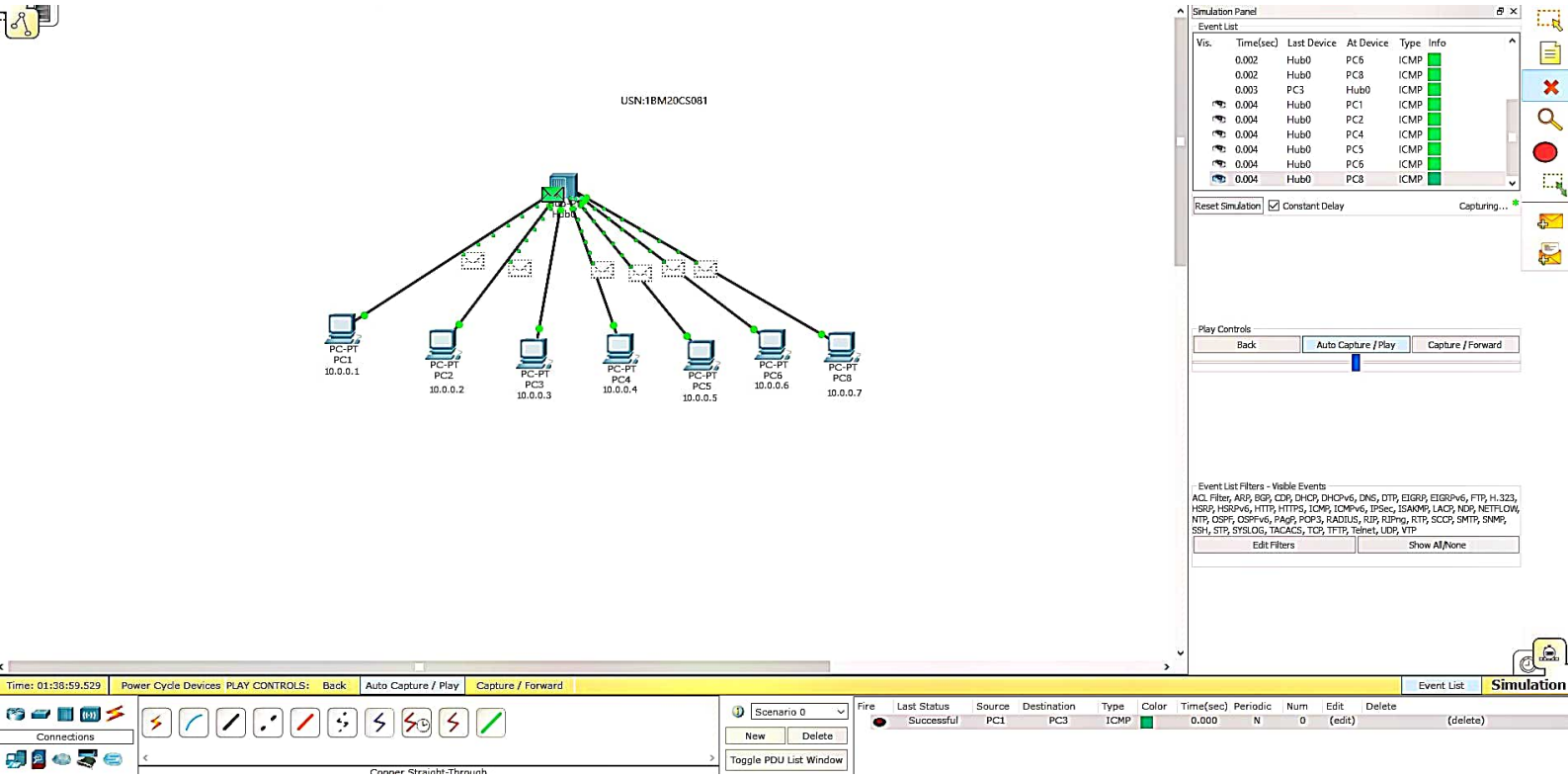
PING 10.0.0.4

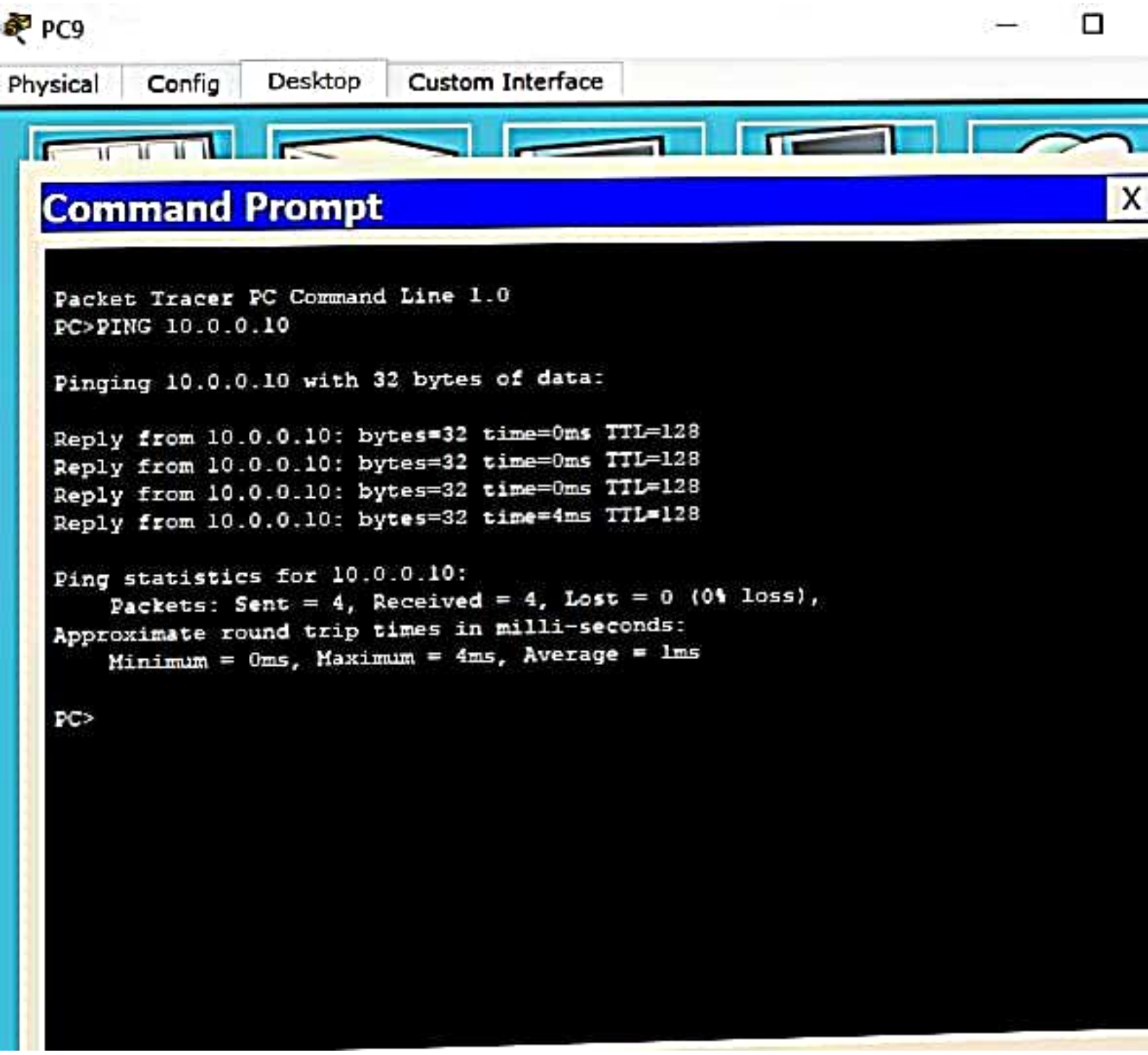
PINGING 10.0.0.4 with 32 bytes of data

REPLY from 10.0.0.4 bytes=32

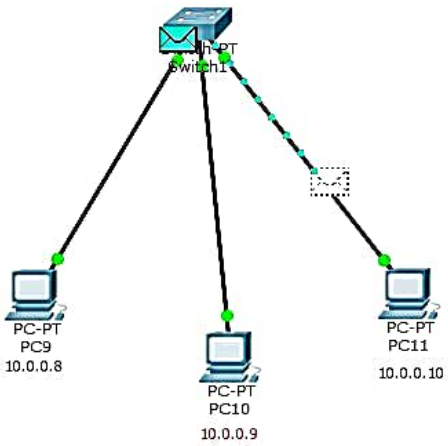
PING STATISTICS for 10.0.0.4

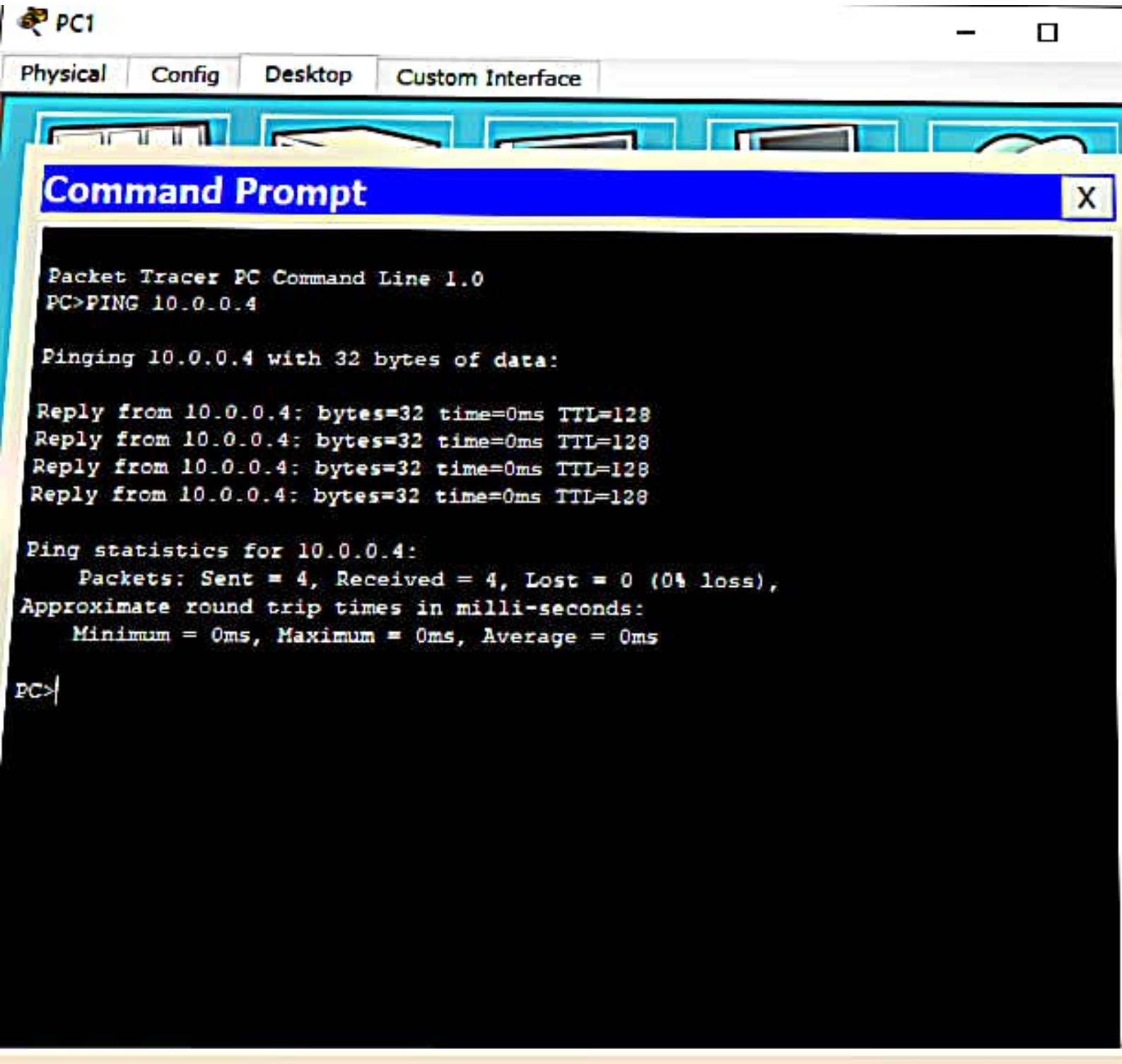
"DETAILS of number of packets sent and recieved"

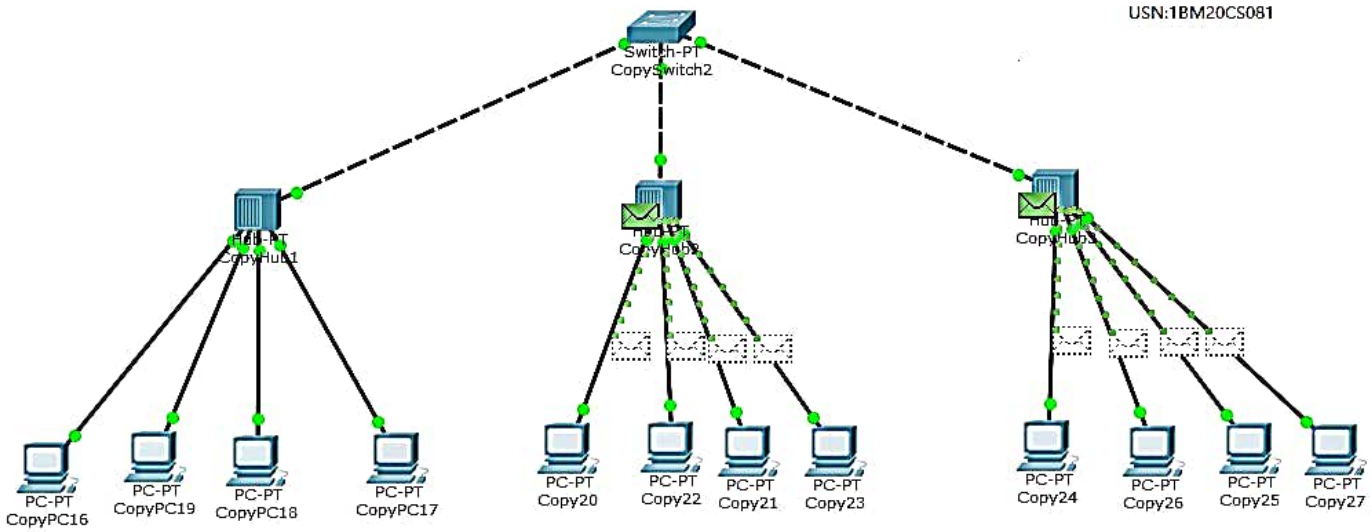

USN:1BM20CS081
Hub0
PC-PT
PC1
10.0.0.1
PC-PT
PC2
10.0.0.2
PC-PT
PC3
10.0.0.3
PC-PT
PC4
10.0.0.4
PC-PT
PC5
10.0.0.5
PC-PT
PC6
10.0.0.6
PC-PT
PC8
10.0.0.7
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type Info
0.002 Hub0 PC6 ICMP
0.002 Hub0 PC8 ICMP
0.003 PC3 Hub0 ICMP
0.004 Hub0 PC1 ICMP
0.004 Hub0 PC2 ICMP
0.004 Hub0 PC4 ICMP
0.004 Hub0 PC5 ICMP
0.004 Hub0 PC6 ICMP
0.004 Hub0 PC8 ICMP
Reset Simulation
Constant Delay
Capturing...
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 01:38:59.529
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful PC1 PC3 ICMP 0.000 N 0 (edit) (delete)


PC9
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>PING 10.0.0.10
Pinging 10.0.0.10 with 32 bytes of data:
Reply from 10.0.0.10: bytes=32 time=0ms TTL=128
Reply from 10.0.0.10: bytes=32 time=0ms TTL=128
Reply from 10.0.0.10: bytes=32 time=0ms TTL=128
Reply from 10.0.0.10: bytes=32 time=4ms TTL=128
Ping statistics for 10.0.0.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 4ms, Average = 1ms
PC>

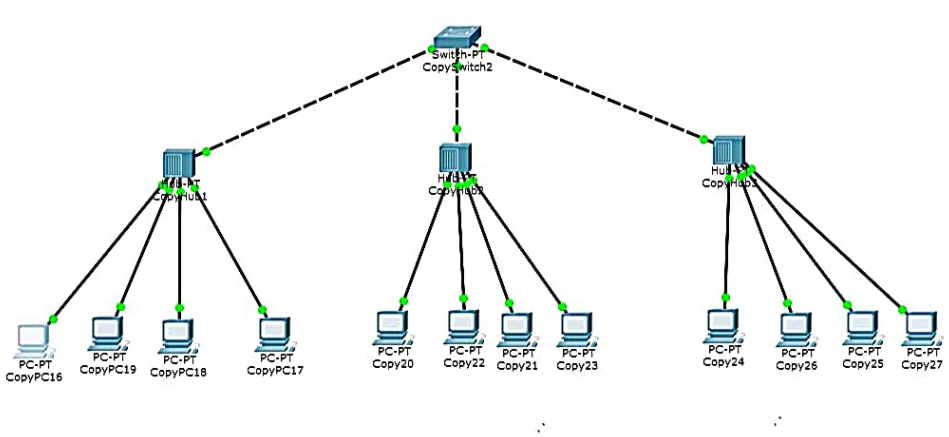
USN:1BM20CS081

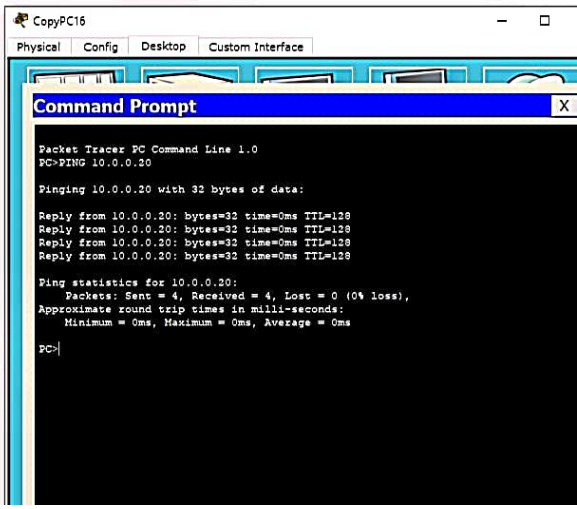



PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>PING 10.0.0.4
Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128
Reply from 10.0.0.4: bytes=32 time=0ms TTL=128
Ping statistics for 10.0.0.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>


USN:1BM20CS081
Switch-PT
CopySwitch2
PC-PT
CopyPC16
PC-PT
CopyPC19
PC-PT
CopyPC18
PC-PT
CopyPC17
PC-PT
Copy20
PC-PT
Copy22
PC-PT
Copy21
PC-PT
Copy23
PC-PT
Copy24
PC-PT
Copy26
PC-PT
Copy25
PC-PT
Copy27

USN:1BM20CS081





chandra's
Dt: Pg:

Experiment Using router and PC

AIM: Configuring IP address to router in packet tracer to explore the following messages: ping responses, destination unreachable, Request timer reply

Procedure :-

Using single router, 2 PC's

1. place a generic router and 2 generic PC's in Workspace
2. Connect the router and PCs using copper cross wire
3. Configure IP address of each pc and in the configuration. Under settings set gateways for PC's to router
4. Click on the generic-router and go to CLI. Enter the following commands to set up connections between PC's and generic router through gateway 10.0.0.10

Next.

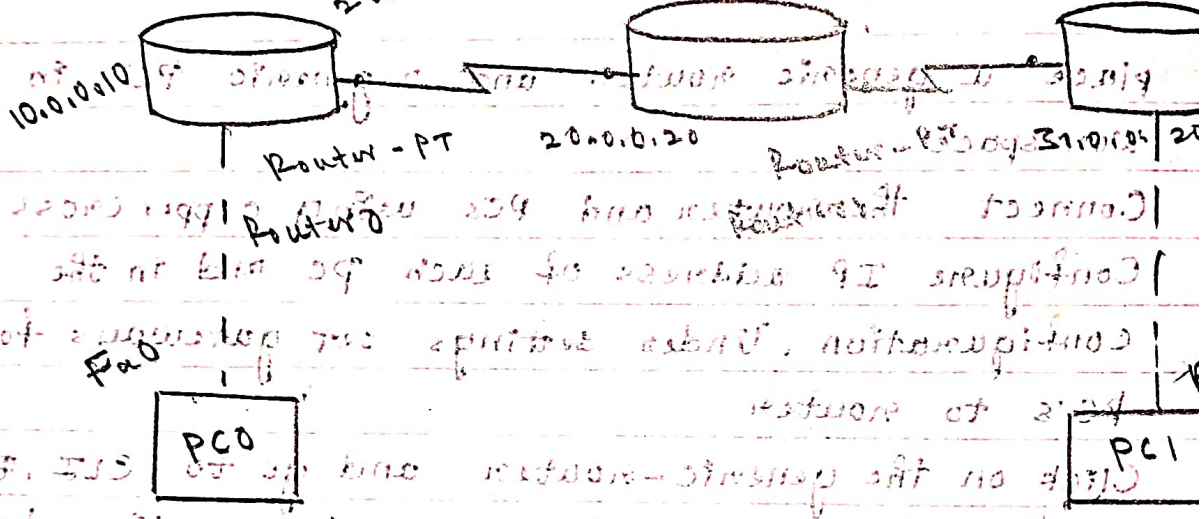
Do the following steps

→ No
→ Enable
config
(config) # Interface fastethernet 0/0
(config-if) # IP address 10.0.0.10 255-0-0-0
no shut
exit

Now to setup connection between PC's and router through gateway 20.0.0.10

Interface fastethenet 1/0
ip address 20.0.0.10 255.0.0.0
no shut

Using 3 router and 2 PC's



Once we enter "no shut" both timer and the amber light between the PC and router turns green indicating that the two lines are connected.

Simulation mode :- Add simple PDU by selecting the PC's and click on auto capture from the right panel

Real-time mode :- Select the PC you want to send the podcast from PC, and open its command prompt from desktop tab, specify the destination bar address. A response is sent from destination PC to source PC.

* Using three routers, 2 PC's

1. Place 3 generic routers and generic PCs
2. Place a node for each device and specify the IP address
3. Connect the router using serial DCI
4. Click on PC and then configure tab and configure IP address of PC's
5. Next, click on settings in config tab set gateway as IP address of next router
6. IP address of PC and its gateway address should belong to same network.

For connecting routers

click on Router 0

Go to CLI and enter the commands

→ no

→ enable

→ interface serial 2/0

→ IP address 20.0.0.10 255.0.0.0

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Repeat the same for Router 1

After this, the red signal changes to green indicating they are ready for communication

for connecting two devices (PC and a router)

→ end to router
→ Open CLI for router 0 and enter the following commands

→ no
→ enable
→ config
→ interface fastethernet 0/0
→ IP address 10.0.0.10 255.0.0.0
→ no shut

The red light changes to green, indicating that they are ready for communication

Reaching Router 0 of network 30:

→ no
→ enable
→ config
→ interface serial 2/0
→ IP route : 30.0.0.0 255.0.0.0. 20.0.0.20
→ exit
→ show IP route

Reaching Router 0 of network 40

→ no
→ enable
→ config

chandra's
Dt: Pg:

→ Interface serial 2/0
→ IP route 40.0.0.0 255.0.0.0 20.0.0.20
→ exit
→ show IP route

Similarly repeat for router1 & router2

Simulation mode:- Add a simple PDU by selecting PC2 and click on auto capture from right panel.

Real-time mode:- select the PC 0 and go to its command prompt and ping the router 0, Once the message has been sent successfully . Repeat the with router1 &2 as well . finally ping PC1

Observation:-

1 Router:
When PC0 pings PC1 for the first time, we get the first packet as request time out
Now, if we ping PC1 again we get all 4 packets, next reverse the pinging of PC0 from PC1

2 router:
Before training the routers we get the result as destination not reactable. After training the routers, we get to clear statistics.

chandra's
Dt: Pg:

Result

1] Using 1 router, 2 PC

ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data

Request timed out

Reply from 20.0.0.1: byte = 32 time <1ms TTL=127

Reply from 20.0.0.1: byte = 32 time < 1ms TTL=127

Reply from 20.0.0.1: bytes = 32 time <1ms TTL=127

ping statistics for 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data

Reply from 20.0.0.1 bytes=32 time <1ms TTL=127

Reply from 20.0.0.1 bytes=32 time <1ms TTL=127

Reply from 20.0.0.1 bytes=32 time <1ms TTL=127

Reply from 20.0.0.1 bytes=32 time <1ms TTL=127

ping statistics for 20.0.0.1

packets = sent = 4, recieved = 4, lost = 0

2] Using three routers two PCs

ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

Reply from 10.0.0.10: destination host unreachable

ping statistics for 40.0.0.1

packets: sent = 4, recieved = 4, lost = 4

Ping 20.0.0.10 with 32bytes of data

Reply from 20.0.0.10 with 32 bytes = 32 time = 1m
TTL = 255

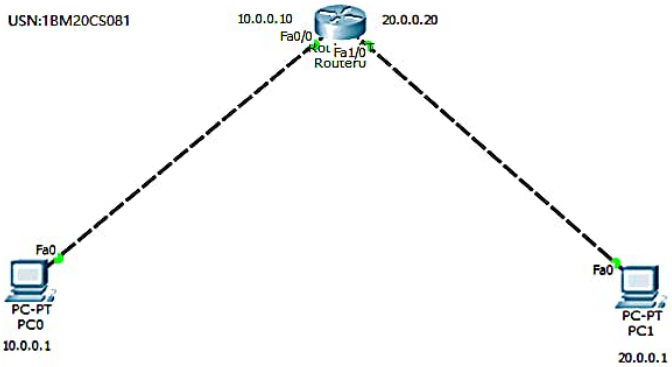
Reply from 20.0.0.10 ; bytes = 32 time = 0ms TTL = 25
ping statistics for 20.0.0.10 :
packets : sent = 4, recieved = 4, lost = 0

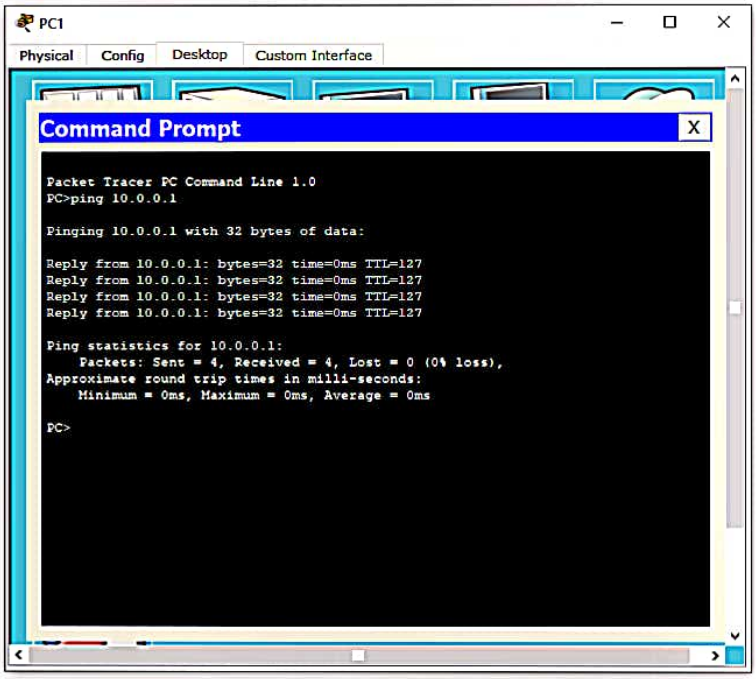
Ping 30.0.0.10
pinging 30.0.0.10 with 32 bytes of data

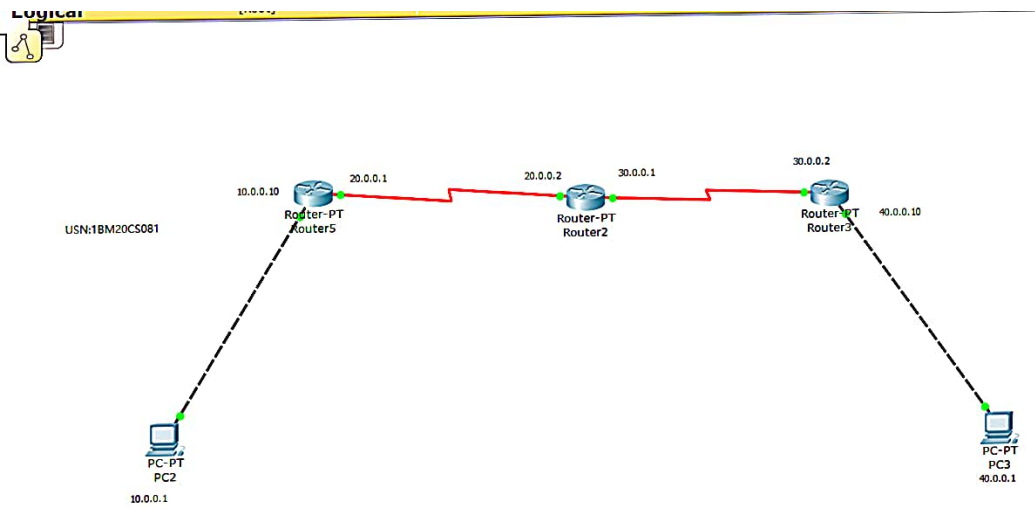
Reply from 30.0.0.10 : bytes = 32 time = 1ms TTL = 25
Reply from 30.0.0.10 : bytes = 32 time = 1ms TTL = 25
Reply from 30.0.0.10 ; bytes = 32 time = 1ms TTL = 25
Reply from 30.0.0.10 : bytes = 32 time = 0ms TTL = 25
ping statistics : 30.0.0.10 :
packets : sent = 4, recieved = 4, lost = 0

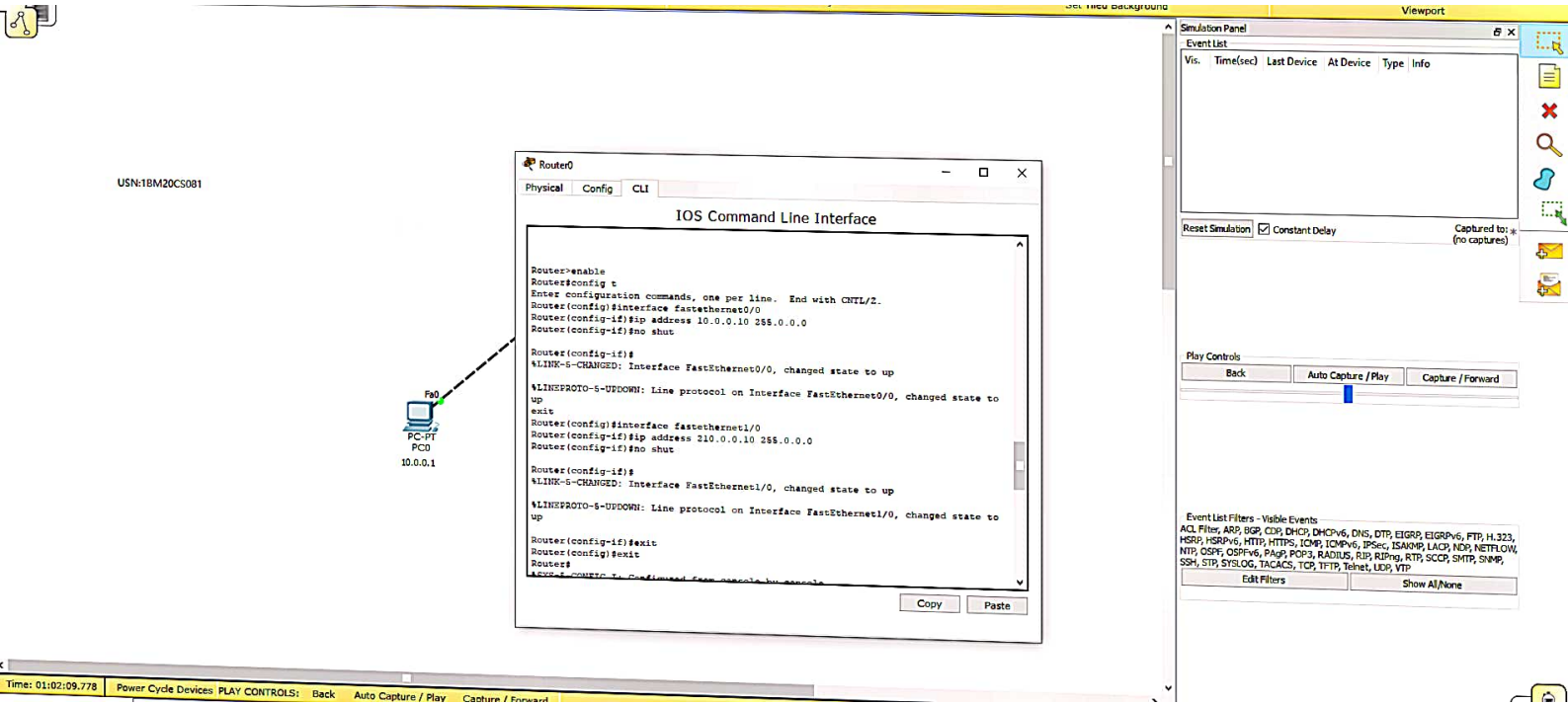
Ping 40.0.0.1
pinging 40.0.0.1 : bytes = 32 time = 10ms TTL = 125
Request timed out
Reply from 40.0.0.1 : bytes = 32, time = 10ms TTL = 12
Reply from 40.0.0.1 : bytes = 32, time = 8ms TTL = 12
Reply from 40.0.0.1 : bytes = 32, time = 8ms TTL = 12
ping statistics for 40.0.0.1 :
packets : sent = 4, recieved = 4, lost = 1

Ping 40.0.0.1
pinging 40.0.0.1 with 32 bytes of data :
Reply from 40.0.0.1 : bytes = 32, time = 2ms TTL = 125
:
Reply from 40.0.0.1 : bytes = 32, time = 9ms TTL = 12

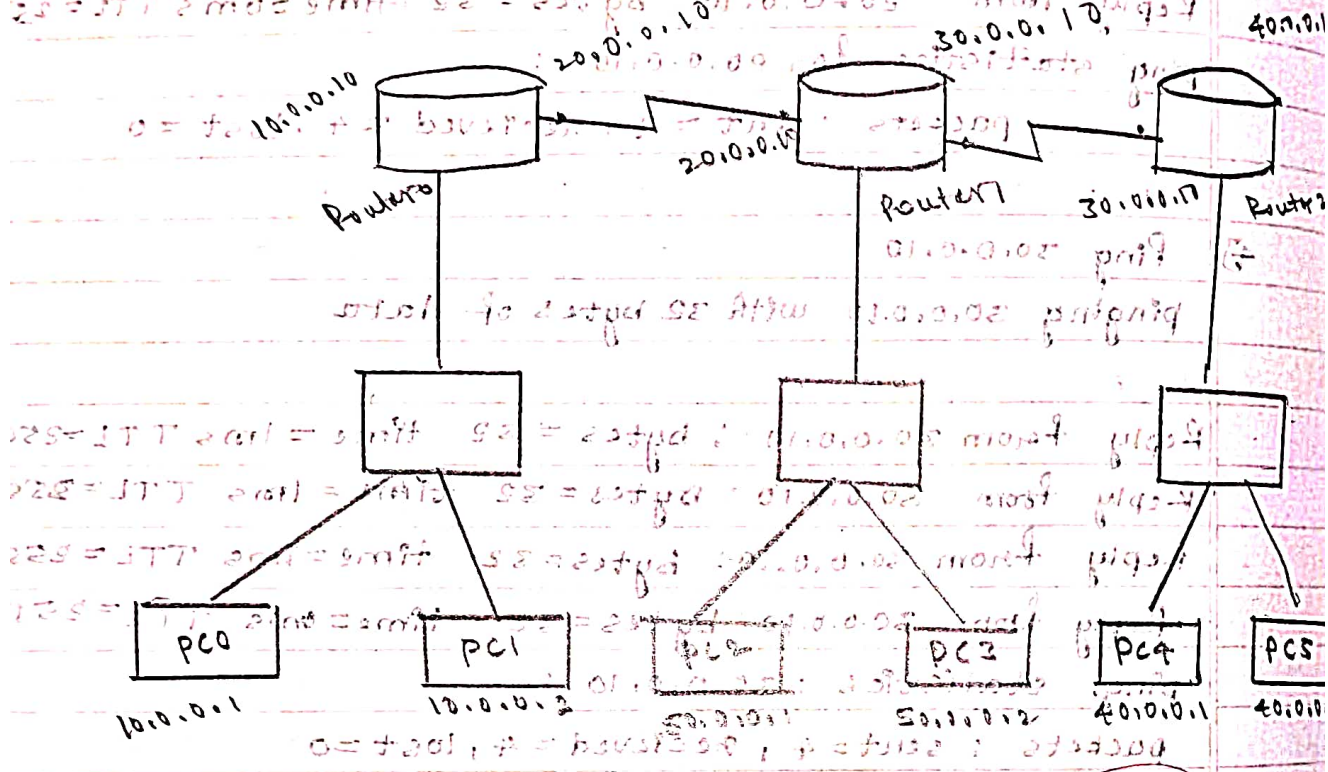

USN:1BM20CS081
10.0.0.10
Fa0/0
Fa1/0
Router0
20.0.0.20
Fa0
PC-PT
PC0
10.0.0.1
Fa0
PC-PT
PC1
20.0.0.1


PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=0ms TTL=127
Reply from 10.0.0.1: bytes=32 time=0ms TTL=127
Reply from 10.0.0.1: bytes=32 time=0ms TTL=127
Reply from 10.0.0.1: bytes=32 time=0ms TTL=127
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>


Logical
USN:1BM20CS081
10.0.0.10
20.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
40.0.0.10
Router-PT
Router5
Router-PT
Router2
Router-PT
Router3
PC-PT
PC2
10.0.0.1
PC-PT
PC3
40.0.0.1


USN:1BM20CS081
Router0
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.10 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config)#interface fastethernet1/0
Router(config-if)#ip address 210.0.0.10 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
Router(config-if)#exit
Router(config)#exit
Router#
Copy
Paste
Fa0
PC-PT
PC0
10.0.0.1
Viewport
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
Type
Info
Reset Simulation
Constant Delay
Captured to:
(no captures)
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 01:02:09.778
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward

Topology:


10.0.0.10
20.0.0.10
20.0.0.20
30.0.0.10
30.0.0.20
40.0.0.10
Router0
Router1
Router2
PC0
PC1
PC2
PC3
PC4
PC5
10.0.0.1
10.0.0.2
40.0.0.1

Lab-3

chandra's
Dt: Pg:

Aim: Configuring default route to the router

Procedure:

→ Place 6 generic PC's, 3 switches and 3 routers and connect two PC's to each switch with copper straight through wire and each switch is connected to one router with a copper straight through wire and 3 routers are connected among themselves by serial DCE cable and the nodes are placed for all the devices and networks

→ PC is clicked to set attributes for a PC and each PC has 3 attributes which are the IP addresses and the gateway and all the three are set according to the nodes placed. thus process is done for all the 6 PC's.

→ For Router 1, the config are done in the CLI, the IP address and subnet mask are done/set for both the interface fastethernet 0/0 as 10.0.0.10 and 255.0.0.0 and serial 2/0 as 40.0.0.1 & 255.0.0.0. Router 2 is default router for Router 1 and this is done by the command IP route 0.0.0.0 0.0.0.0 40.0.0.2

→ For Router 2 the IP address and subnet mode are set - for all 3 interfaces fast ethernet 0/0 as 20.0.0.3 & 255.0.0.0 and serial 2/0 as 40.0.0.2 & 255.0.0.0 and serial 3/0 as 50.0.0.1 & 255.0.0.0

chandra's
Dt: Pg:

Router 2 doesnot have any default router and static routing is done for the network 10 & 40 by the following cmd ip route 10.0.0.0 255.0.0.0 ip route 30.0.0.0 255.0.0.0 50.0.0.2

→ Router 3 is configured in both the interfaces with ip address and subnet mode as fastethernet 0/0 with 30.0.0.10 and 255.0.0.0 and serial 2/0 with 50.0.0.1 & 255.0.0.0 the default router for router3 router2 & thus set by the cmd:-
IP route: 0.0.0.0 0.0.0.0 50.0.0.1

→ ping cmd is executed from 10.0.0.1 to 20.0.0.1 & from 10.0.0.1 to 30.0.0.2

Observation :

Learning outcome:-

→ one router cannot have two default routes
→ The default router for first router is the middle router because any packets which have to be delivered. will go to middle router
→ The default router for 3rd router is the middle router for the same reason
→ The middle router doesnot have default route because if one of the router is made default then there is a chance that the packets which are to be sent to the switch are sent to the router

chandra's
Dt: Pg:

Result:-

ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data:

Request timed out

Reply from 20.0.0.1 : bytes=32 , time = 1ms, TTL=126

Reply from 20.0.0.1 : bytes = 32, time = 2ms, TTL = 126

Reply from 20.0.0.1 : bytes=32, time=6ms, TTL=126

ping 30.0.0.2

pinging 30.0.0.2 with 32 bytes of data

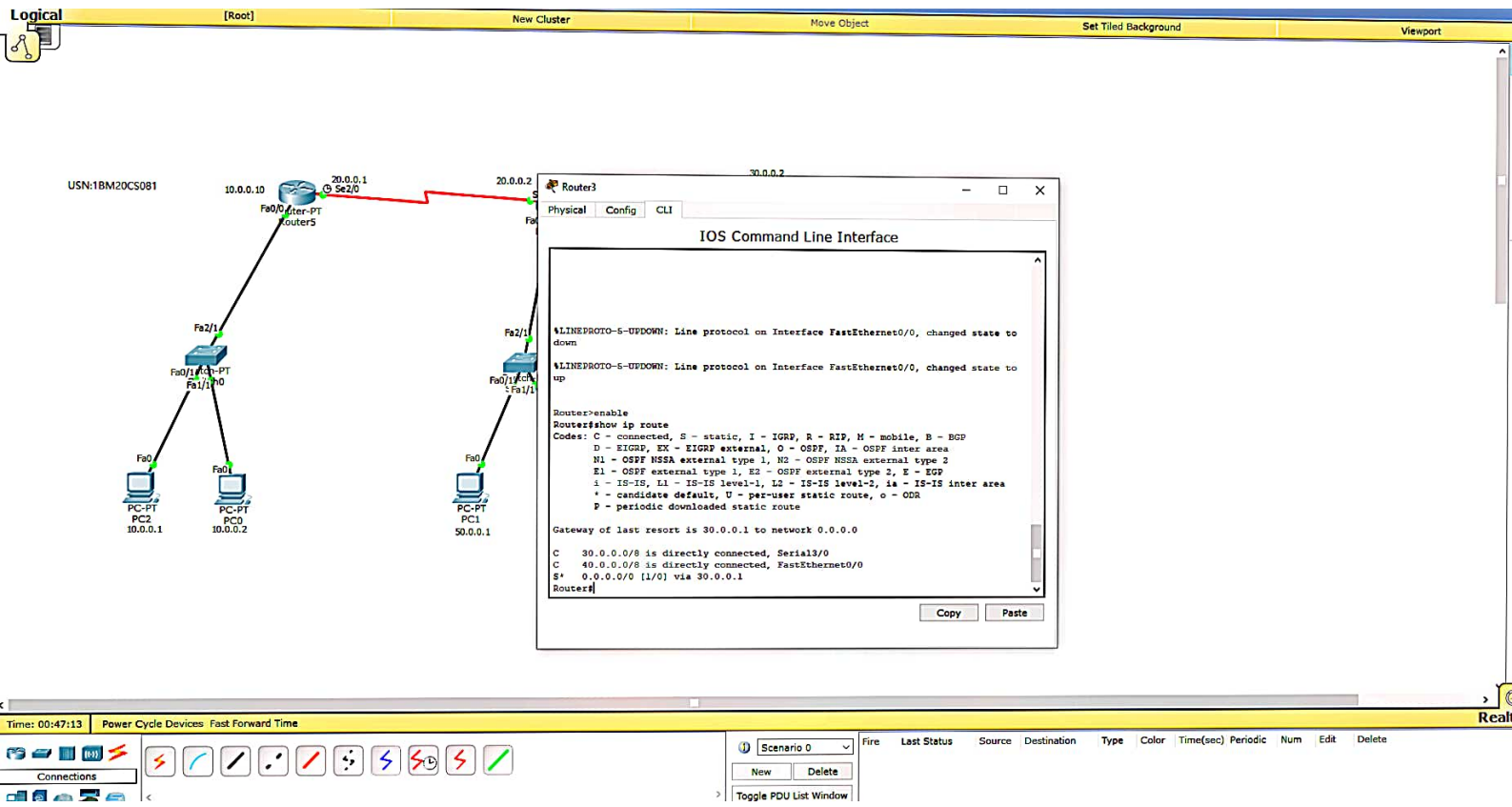
Request timed out

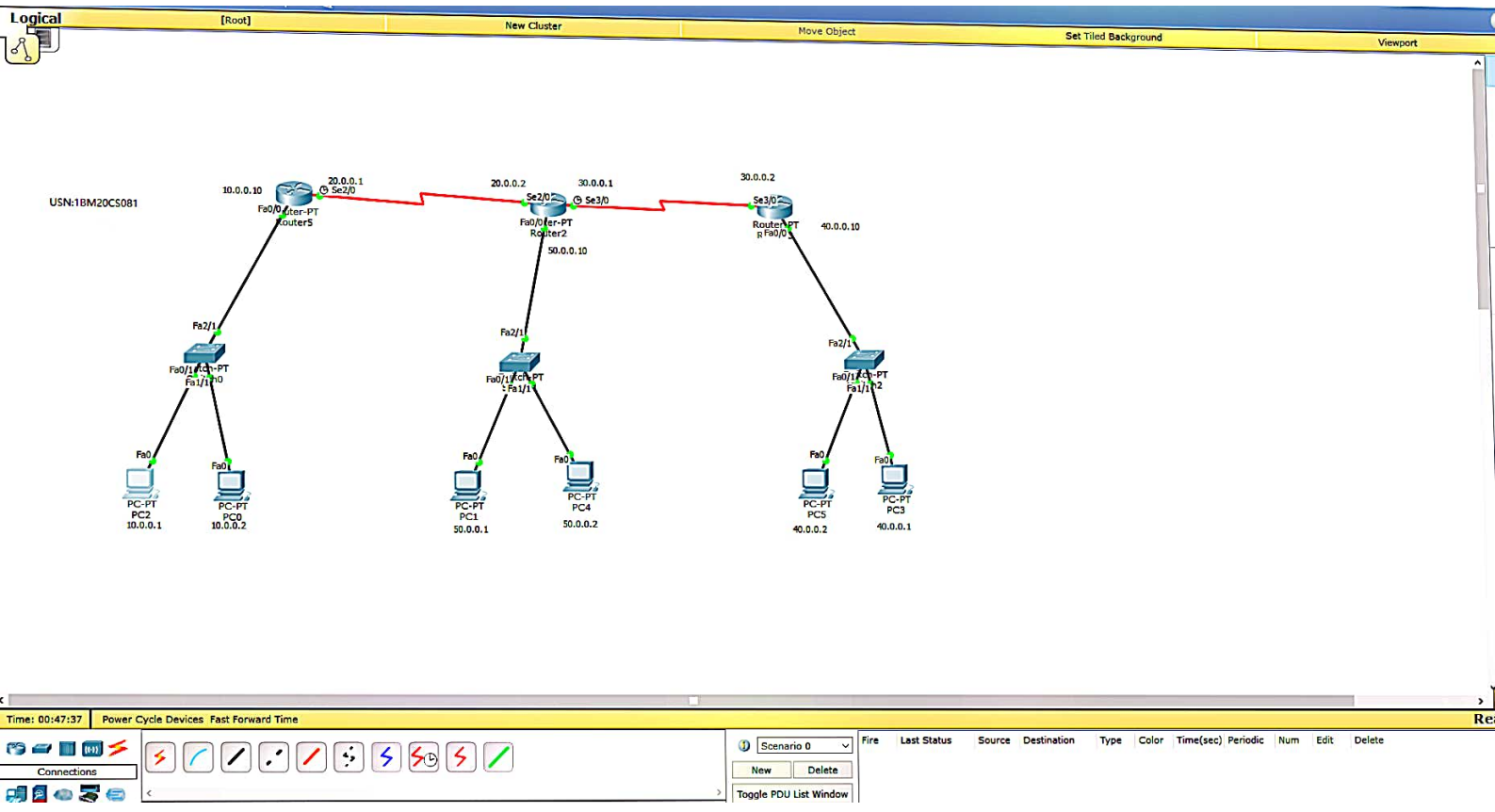
Reply from 30.0.0.2 : bytes = 32 , time = 4ms, TTL=125

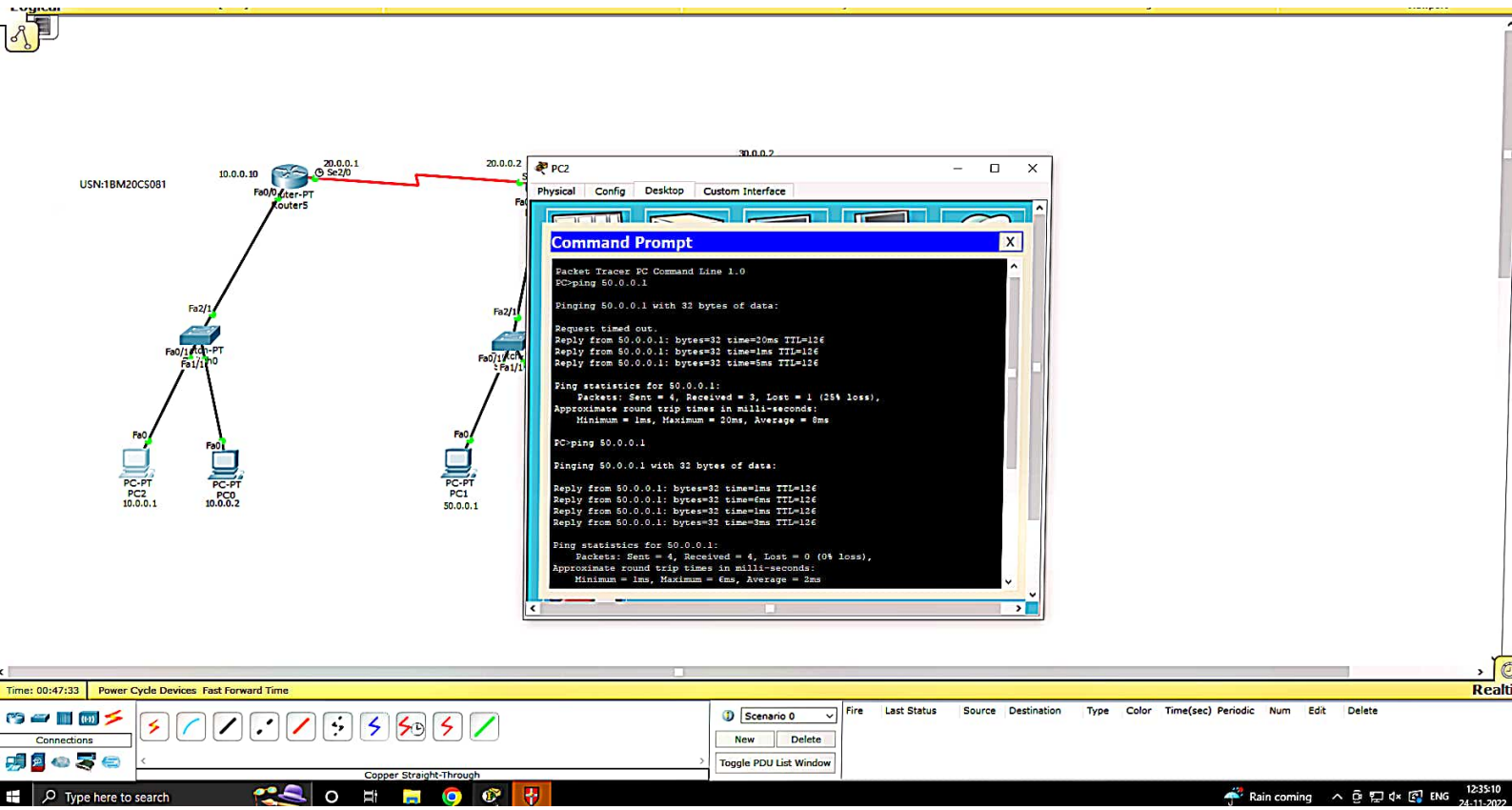
Reply from 30.0.0.2 : bytes = 32 , time = 4ms, TTL=125

Reply from 30.0.0.2 : bytes=32, time=4ms, TTL=125

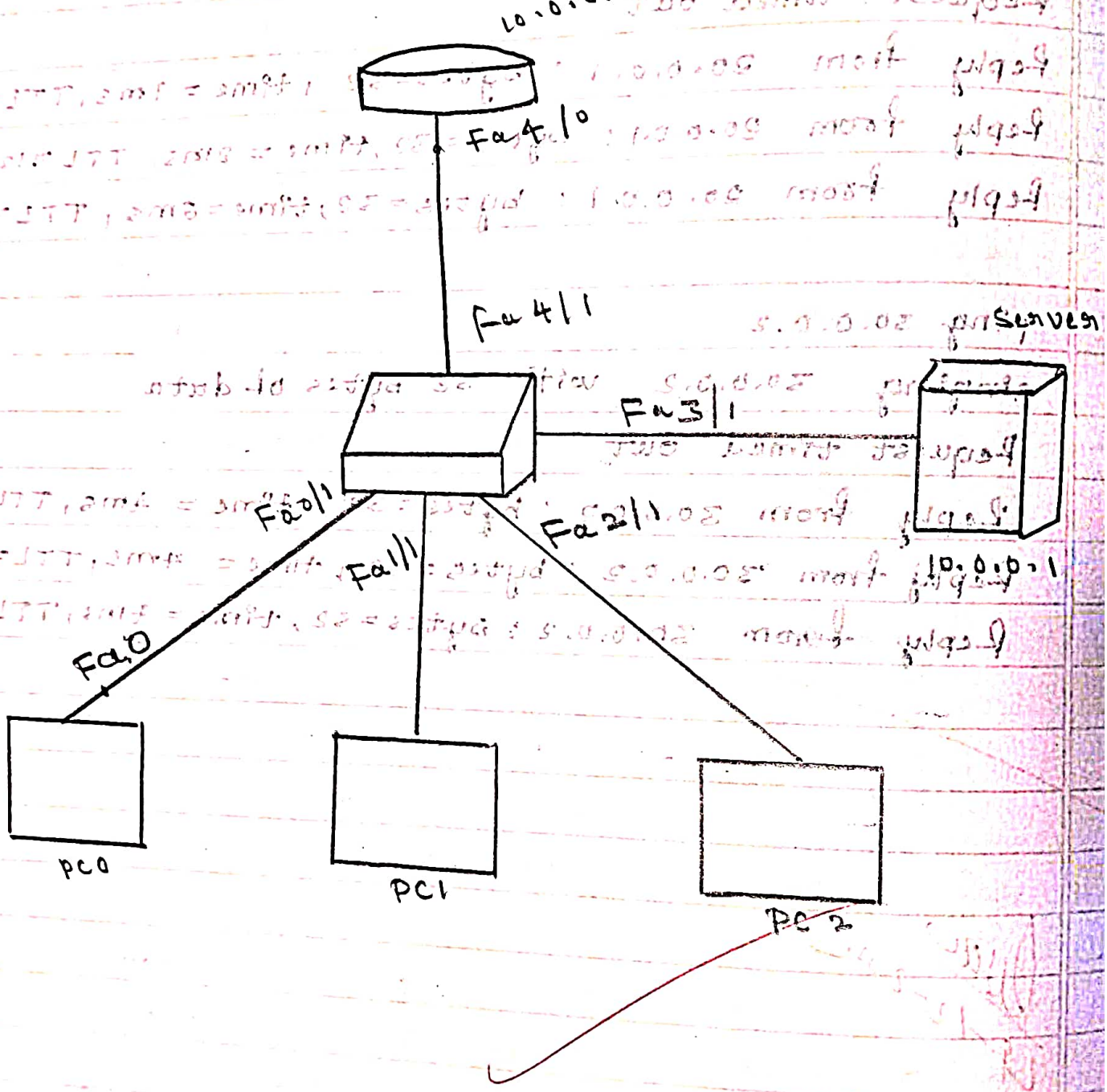
24-12-22


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
10.0.0.10
20.0.0.1
Se2/0
20.0.0.2
30.0.0.2
Fa0/0
Router5
Fa2/1
Fa0/1
Fa1/1
Fa0
PC-PT
PC2
10.0.0.1
PC-PT
PC0
10.0.0.2
PC-PT
PC1
50.0.0.1
Router3
Physical
Config
CLI
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router>enable
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is 30.0.0.1 to network 0.0.0.0
C 30.0.0.0/8 is directly connected, Serial3/0
C 40.0.0.0/8 is directly connected, FastEthernet0/0
S* 0.0.0.0/0 [1/0] via 30.0.0.1
Router#
Copy
Paste
Time: 00:47:13
Power Cycle Devices
Fast Forward Time
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
10.0.0.10
20.0.0.1
Se2/0
Fa0/0
Router5
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Fa0/0
Router2
30.0.0.2
Se3/0
Router
Fa0/0
40.0.0.10
50.0.0.10
Fa2/1
Fa0/1
Fa1/1
Fa0
PC-PT
PC2
10.0.0.1
PC-PT
PC0
10.0.0.2
PC-PT
PC1
50.0.0.1
PC-PT
PC4
50.0.0.2
PC-PT
PC5
40.0.0.2
PC-PT
PC3
40.0.0.1
Time: 00:47:37
Power Cycle Devices
Fast Forward Time
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


USN:1BM20CS081
10.0.0.10
20.0.0.1
Se2/0
20.0.0.2
Fa0/0
Router-PT
Router5
Fa2/1
Fa0/1
Fa1/1
Switch-PT
Switch0
Fa0
PC-PT
PC2
10.0.0.1
PC-PT
PC0
10.0.0.2
PC-PT
PC1
50.0.0.1
PC2
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 50.0.0.1
Pinging 50.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 50.0.0.1: bytes=32 time=30ms TTL=126
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126
Reply from 50.0.0.1: bytes=32 time=5ms TTL=126
Ping statistics for 50.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 30ms, Average = 8ms
PC>ping 50.0.0.1
Pinging 50.0.0.1 with 32 bytes of data:
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126
Reply from 50.0.0.1: bytes=32 time=6ms TTL=126
Reply from 50.0.0.1: bytes=32 time=1ms TTL=126
Reply from 50.0.0.1: bytes=32 time=3ms TTL=126
Ping statistics for 50.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 6ms, Average = 2ms
Time: 00:47:33
Power Cycle Devices
Fast Forward Time
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
Type here to search
Rain coming
ENG
12:35:10
24-11-2022

Topology:-


10.0.0.2
Fa4/0
Fa4/1
Fa3/1
Server
10.0.0.1
Fa0/1
Fa1/1
Fa2/1
Fa0
PC0
PC1
PC2

chandra's Dt: Pg:

Aim: Configuring DHCP within a LAN in a packet Tracer

Procedure:

1. Place 3 PC's, 1 switch, 1 server, and one router, connect all devices and router to switch
2. Set the IP address 10.0.0.1 for server and gateway as 10.0.0.2
3. For Router 0, do the following CLI commands
   → Interface fastethernet 4/0
   → IP address 10.0.0.2 255.0.0.0
4. At the server, go to services and enable service. Set the default gateway 10.0.0.2, DNS server 10.0.0.1
   start IP : 10 0 0 3 and click save
5. For all the PC's go to IP config & turn on the DHCP
6. After all the above steps ping for the messages.

Observation :-

learning outcome :-

→ Server provides the IP addresses for the PC's

chandra's
Dt: Pg:

Result :-

ping 10.0.0.5

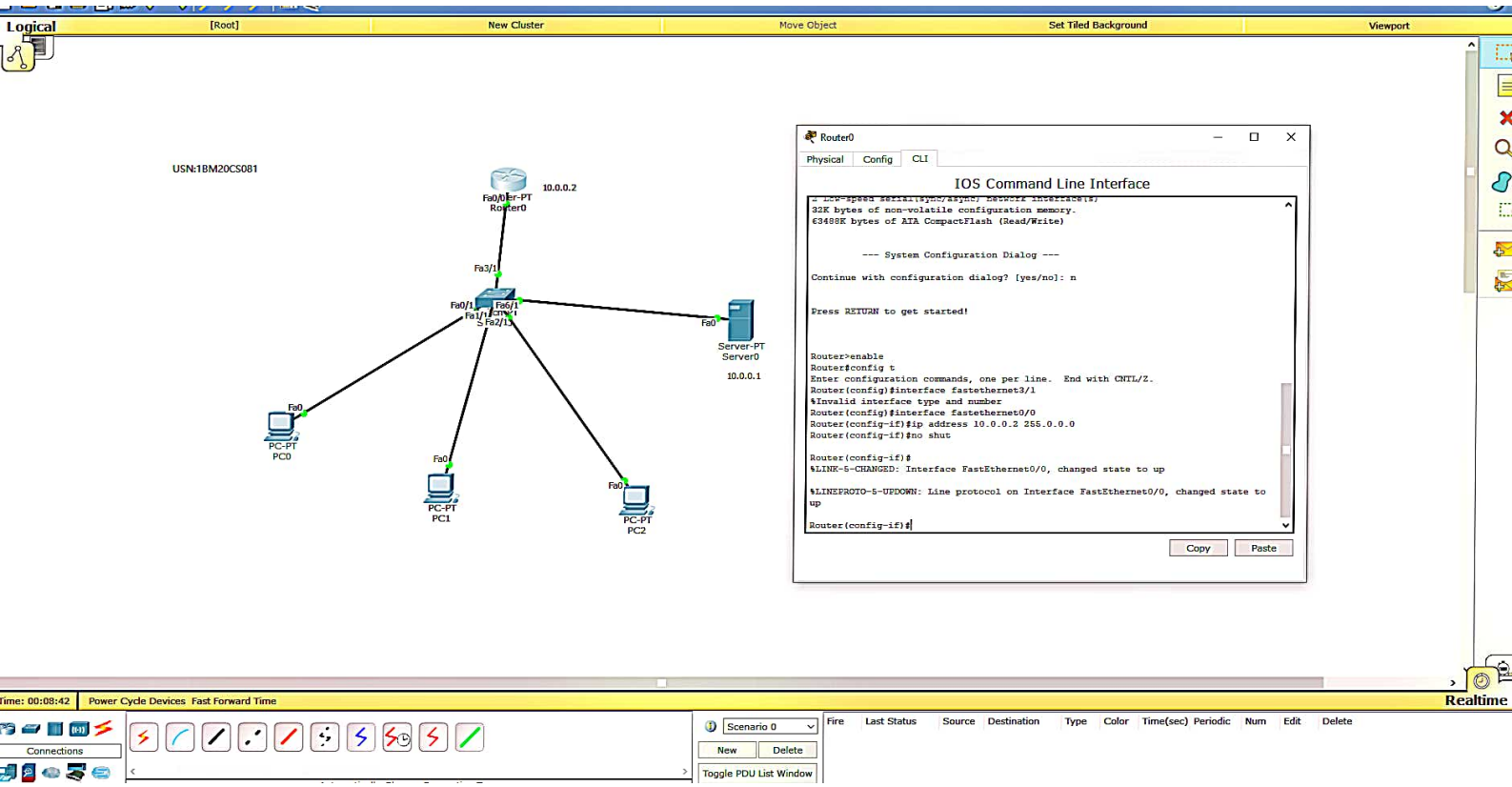
pinging 10.0.0.5 with 32 bytes of data :

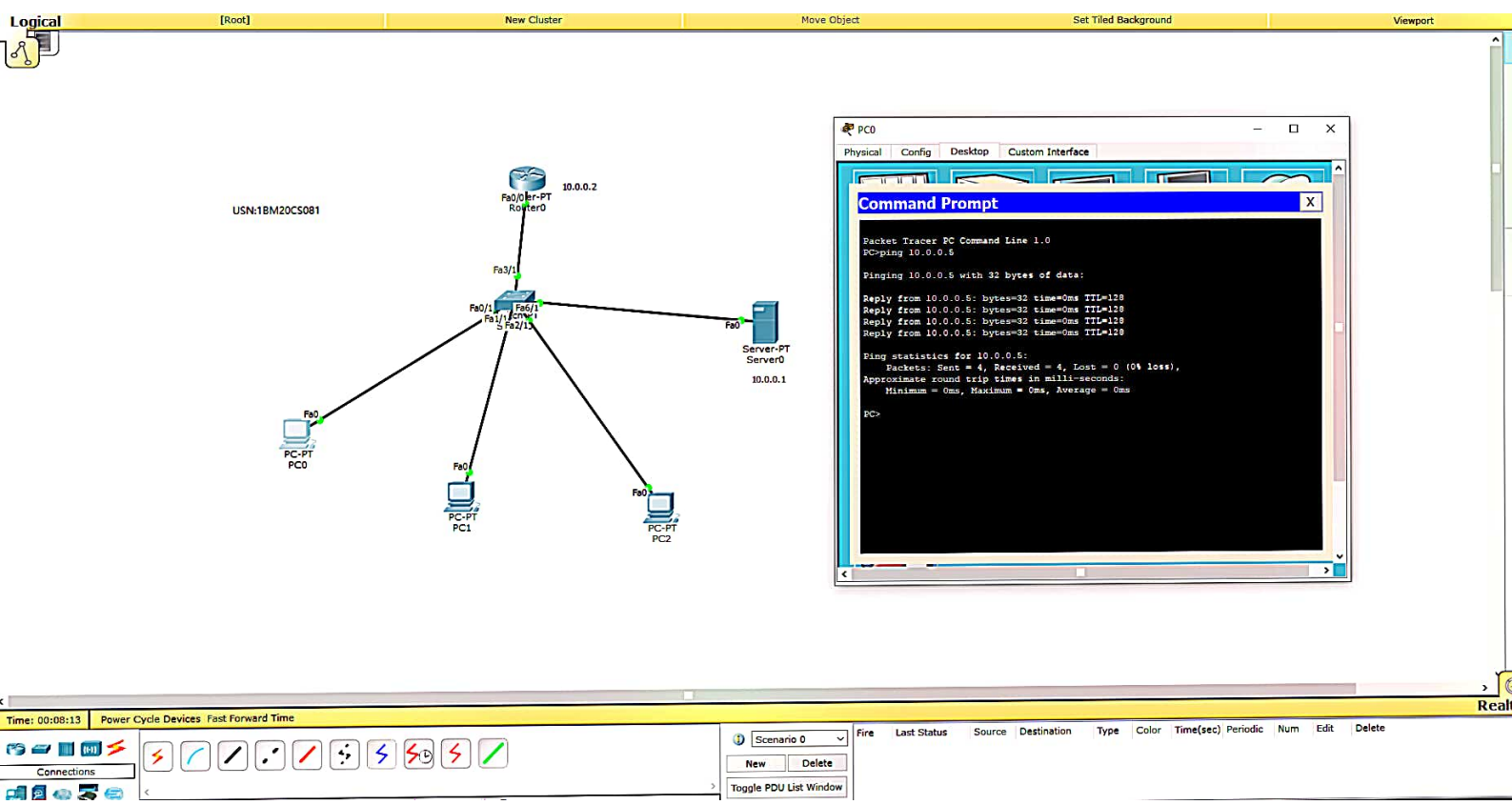
Reply from 10.0.0.5 : bytes = 32 time = 0ms, TTL = 128

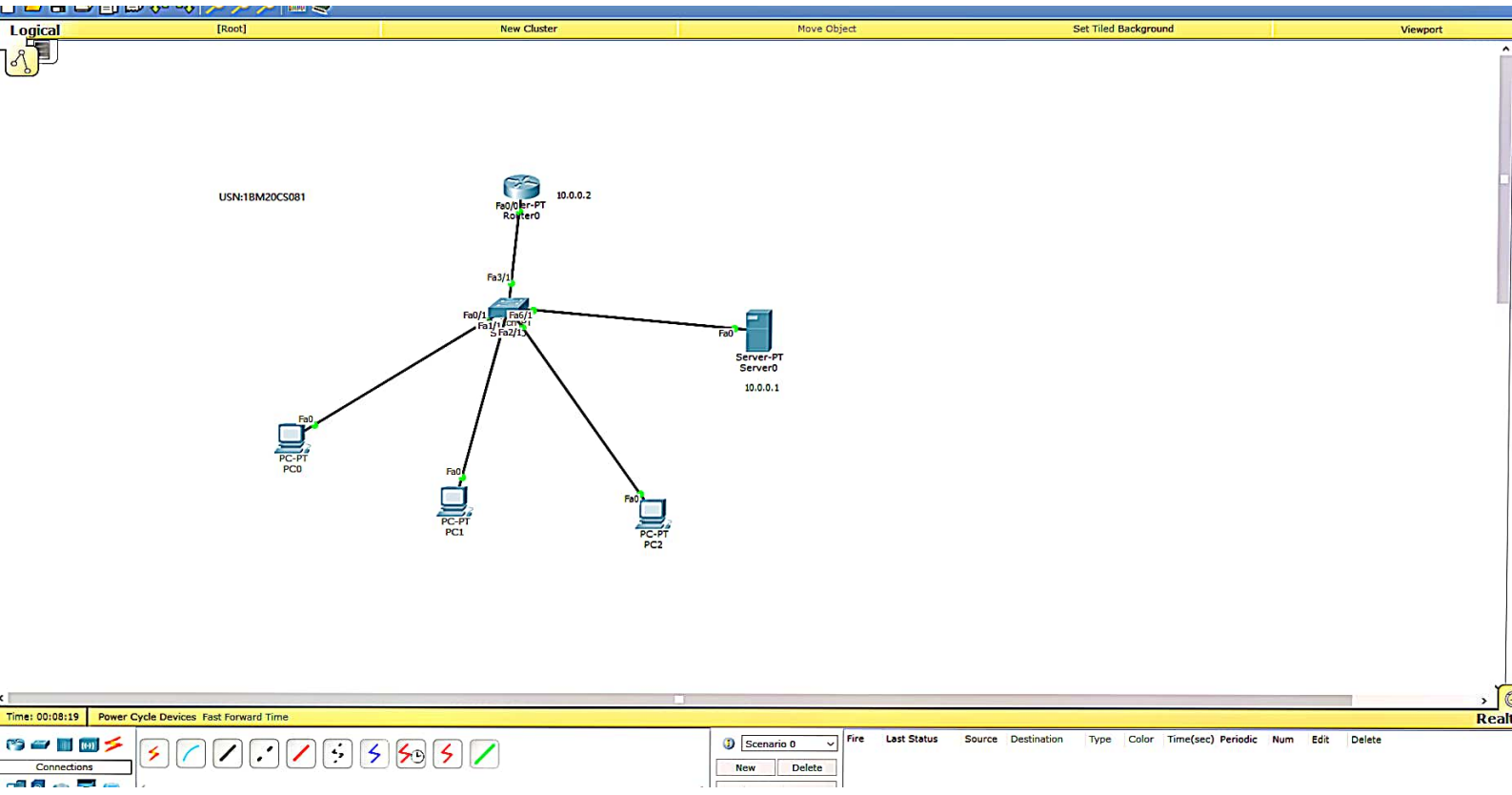
Reply from 10.0.0.5 : bytes = 32 time = 0ms TTL = 128

Reply from 10.0.0.5 : bytes = 32 time = 0ms TTL = 128

Reply from 10.0.0.5 : bytes = 32 time = 0ms TTL = 128

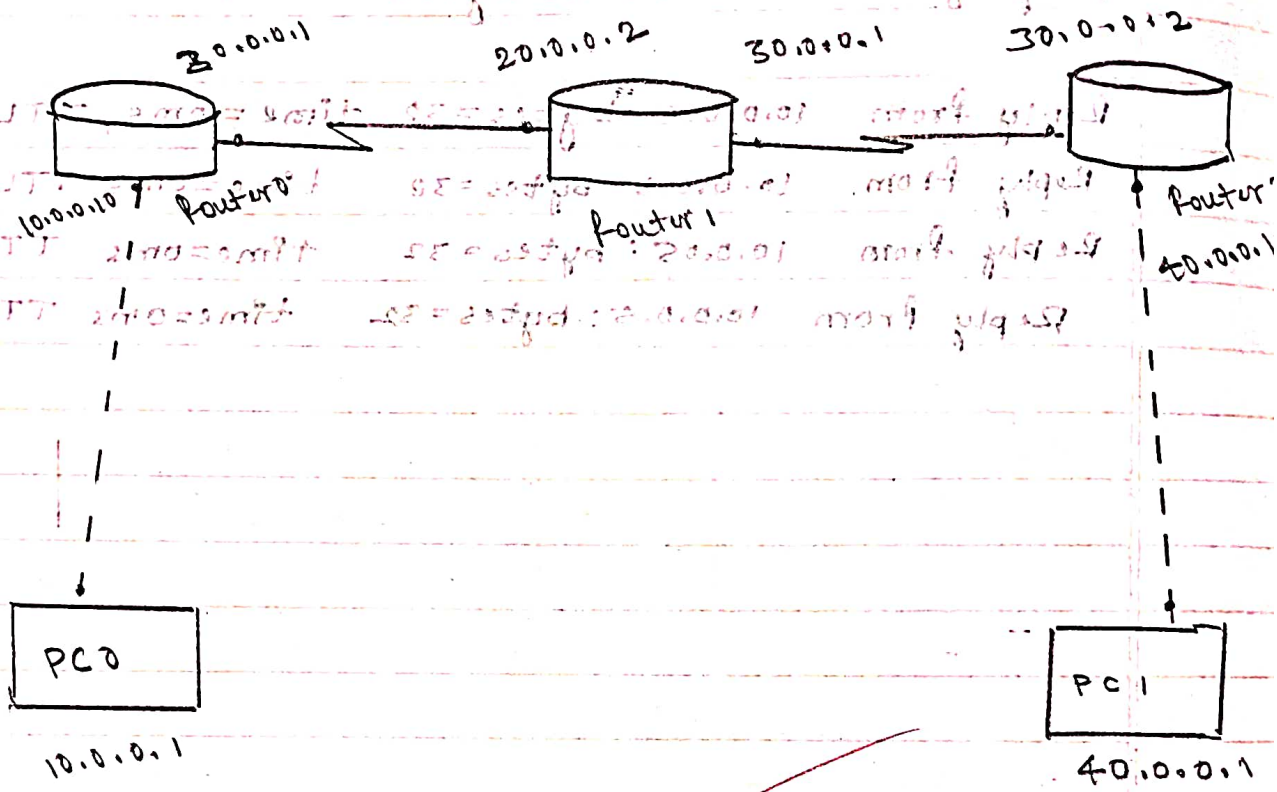

Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
Router-PT
Router0
10.0.0.2
Fa0/0
Fa3/1
Fa0/1
Fa6/1
Fa1/1
Fa2/1
Fa0
Server-PT
Server0
10.0.0.1
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Router0
Physical
Config
CLI
IOS Command Line Interface
32K bytes of non-volatile configuration memory.
63488K bytes of ATA CompactFlash (Read/Write)
--- System Configuration Dialog ---
Continue with configuration dialog? [yes/no]: n
Press RETURN to get started!
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastethernet3/1
%Invalid interface type and number
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if)#
Copy
Paste
Time: 00:08:42
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
10.0.0.2
Fa0/0er-PT
Router0
Fa3/1
Fa0/1
Fa6/1
Fa1/1
S Fa2/1
Fa0
Server-PT
Server0
10.0.0.1
Fa0
PC-PT
PC0
Fa0
PC-PT
PC1
Fa0
PC-PT
PC2
PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.5
Pinging 10.0.0.5 with 32 bytes of data:
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Ping statistics for 10.0.0.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
PC>
Time: 00:08:13
Power Cycle Devices
Fast Forward Time
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
Fa0/0er-PT
Router0
10.0.0.2
Fa3/1
Fa0/1
Fa6/1
Fa1/1
Fa2/1
Fa0
Server-PT
Server0
10.0.0.1
Fa0
PC-PT
PC0
Fa0
PC-PT
PC1
Fa0
PC-PT
PC2

Time: 00:08:19
Power Cycle Devices
Fast Forward Time
Real
Connections
Scenario 0
New
Delete
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete

Topology:-


30.0.0.1
20.0.0.2
30.0.0.1
30.0.0.2
10.0.0.10
router0
router1
router
40.0.0.1
PC0
10.0.0.1
PC1
40.0.0.1

Lab-5

chandra's Dt: Pg:

Aim: Configuring RIP Routing protocol in routers

Procedure:-

* Use 3 generic routers, 2 generic PC and place notes to indicate respective IP addresses
* Use serial DCE cable to connect routers and use copper cross cable to connect PC with router1 and router3
* Set IP addresses, gateway and subnet mask as 10.0.0.1, 10.0.0.10, 255.0.0.0 for PC0 set 40.0.0.1, 40.0.0.10, 255.0.0.0 for PC1
* Interface PC0 and router1
  - → Interface fastternet 0/0
  - → ip addresses 20.0.0.10 255.0.0.0
  - → no shut
* for Interfacing serial 2/0 of router 1
  - → Interface serial 2/0
  - → encapsulation ppp
  - → clock rate 64000
  - → no shut
* Use above commands for interfacing router which has clock symbol in cable near to it and for other interfaces of routers use same above command except "clockrate 64000"
* Once all the lights are turned green follow the commands below. to each router
  - → router rip
  - → network 10.0.0.0
  - → network 20.0.0.0
  - → exit

chandra's
Dt: Pg:

* Repeat the same command for router 2 and router 3

* Observation

Use IP routing becomes easy when large number of routers are present

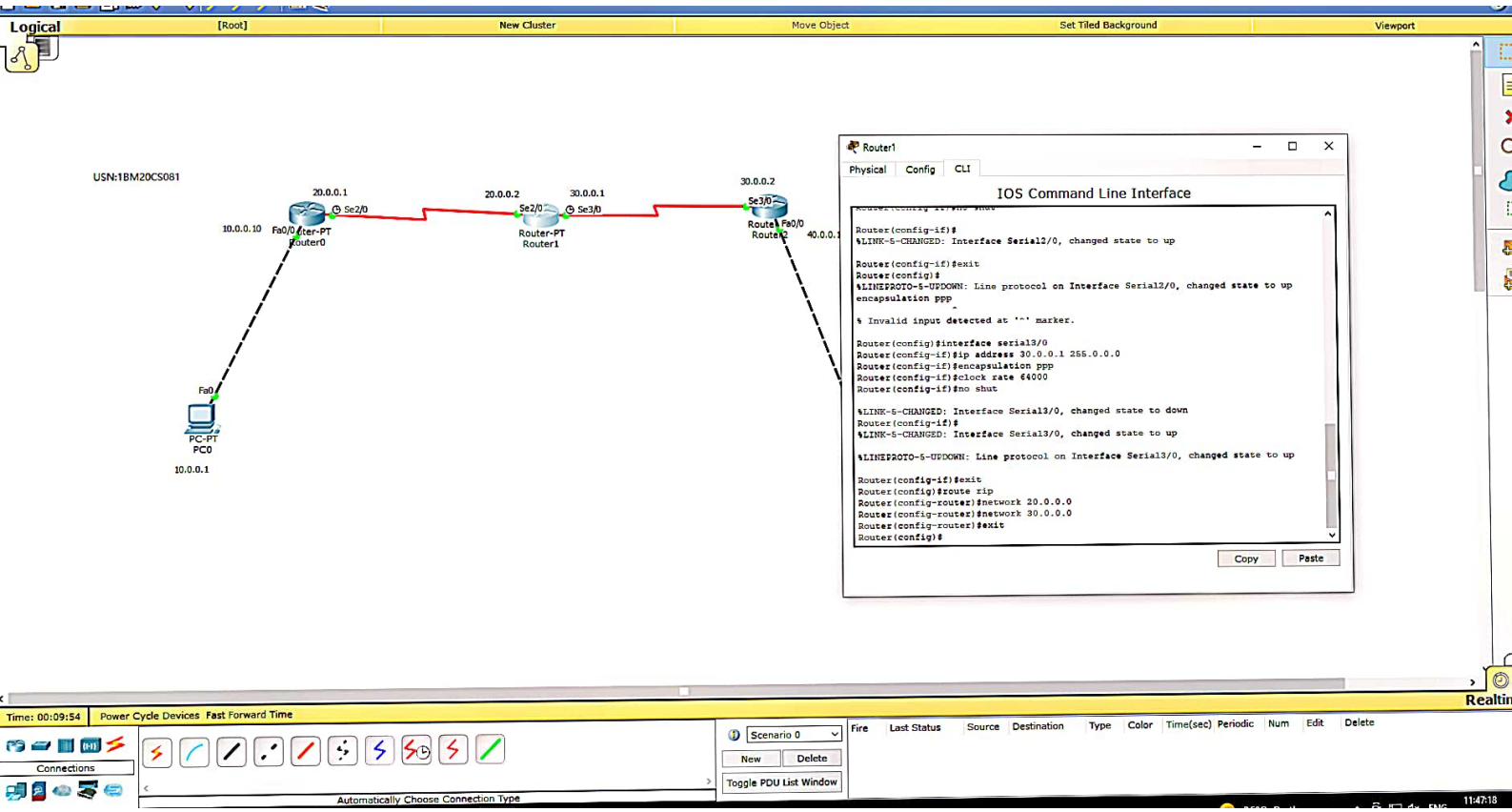
* Result

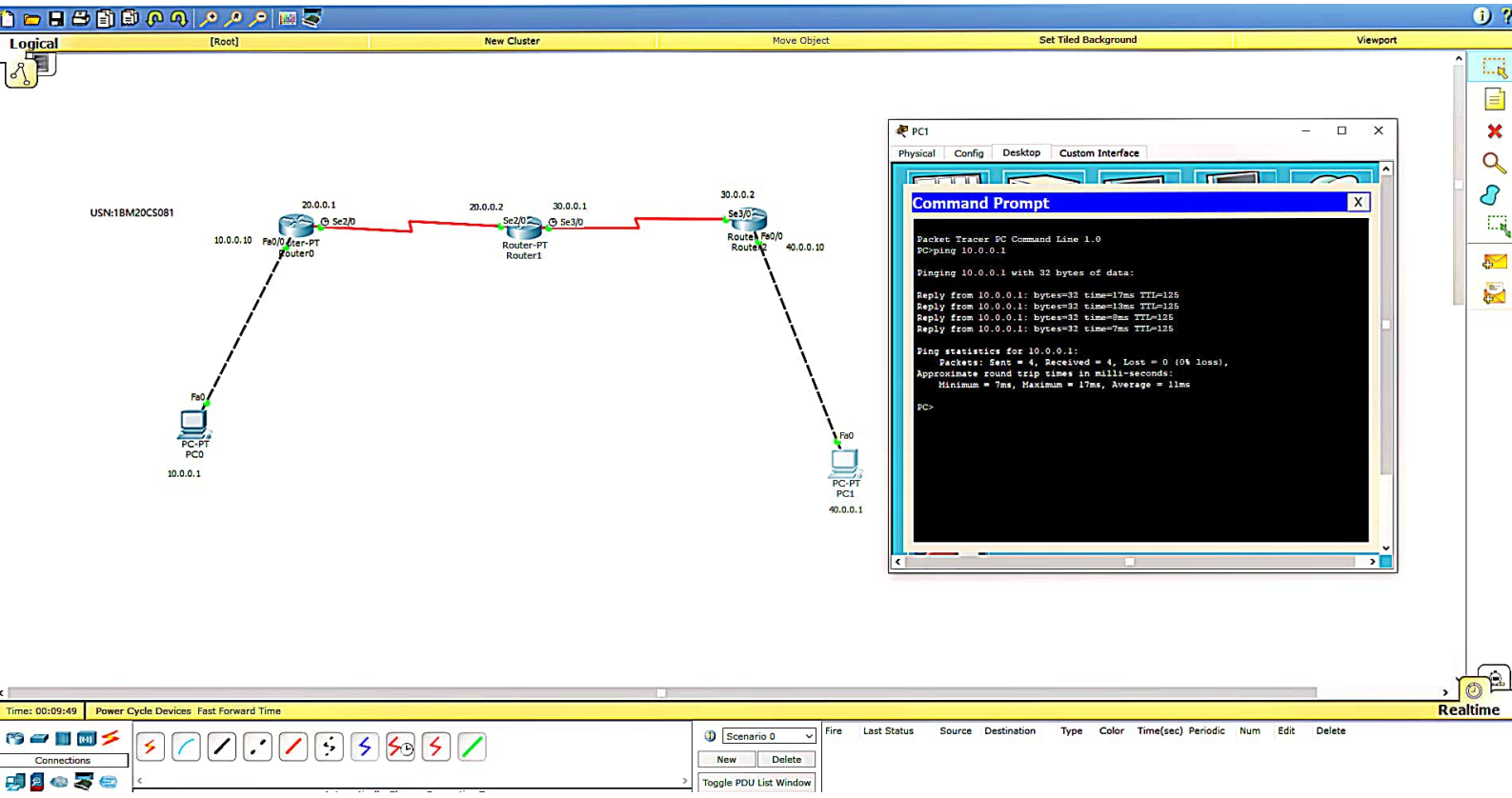
Pinging 10.0.0.1 with 32 bytes of data

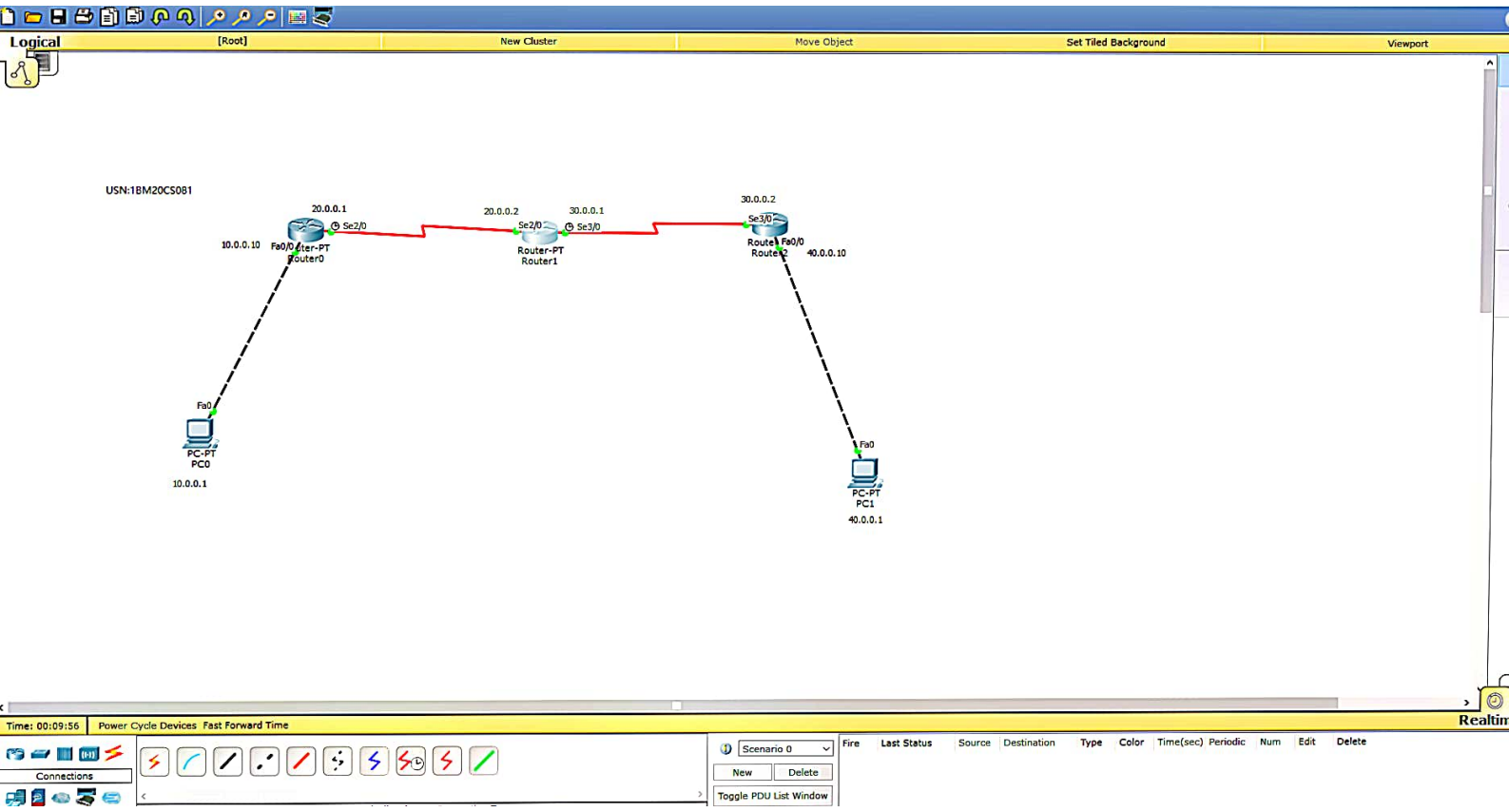
reply from 10.0.0.1 byte=32
reply from 10.0.0.1 byte=32
reply from 10.0.0.1 byte=32
reply from 10.0.0.1 byte=32

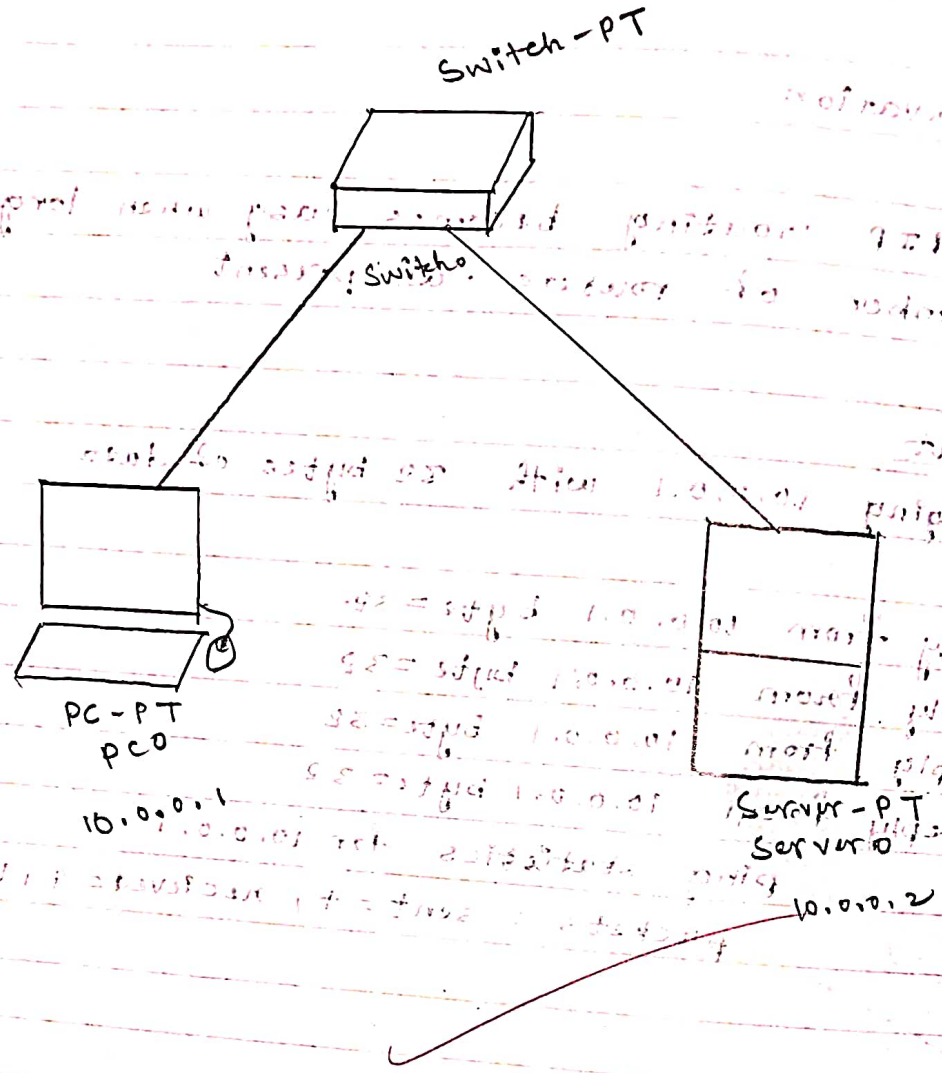
ping statistics for 10.0.0.1
packets ; sent=4, received=4, lost=0

Nov
21-12-2021


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
20.0.0.1
Se2/0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
30.0.0.2
Se3/0
10.0.0.10
Fa0/0
Router-PT
Router0
Router-PT
Router1
Fa0/0
40.0.0.1
Fa0
PC-PT
PC0
10.0.0.1
Router1
Physical
Config
CLI
IOS Command Line Interface
Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
encapsulation ppp
% Invalid input detected at '^' marker.
Router(config)#interface serial3/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#encapsulation ppp
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router(config-if)#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
Router(config-if)#exit
Router(config)#route rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#exit
Router(config)#
Copy
Paste
Time: 00:09:54
Power Cycle Devices
Fast Forward Time
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete
11:47:18


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
20.0.0.1
Se2/0
10.0.0.10
Fa0/0
Router-PT
Router0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
Router-PT
Router1
30.0.0.2
Se3/0
Router-PT
Router2
Fa0/0
40.0.0.10
Fa0
PC-PT
PC0
10.0.0.1
Fa0
PC-PT
PC1
40.0.0.1
PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=17ms TTL=125
Reply from 10.0.0.1: bytes=32 time=13ms TTL=125
Reply from 10.0.0.1: bytes=32 time=8ms TTL=125
Reply from 10.0.0.1: bytes=32 time=7ms TTL=125
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 7ms, Maximum = 17ms, Average = 11ms
PC>
Time: 00:09:49
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
20.0.0.1
Se2/0
20.0.0.2
Se2/0
30.0.0.1
Se3/0
30.0.0.2
Se3/0
10.0.0.10
Fa0/0
Router-PT
Router0
Router-PT
Router1
Router-PT
Router2
Fa0/0
40.0.0.10
Fa0
PC-PT
PC0
10.0.0.1
Fa0
PC-PT
PC1
40.0.0.1
Time: 00:09:56
Power Cycle Devices
Fast Forward Time
Realtim
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Switch-PT
Switch0
PC-PT
PC0
10.0.0.1
Server-PT
Server0
10.0.0.2

Lab-6

chandra's
Dt: Pg:

Web Server

Aim: Demonstration of WEB Server and DNS using packet server

Procedure:

- Add the PC, switch and server in the workspace and connect the components
- Configure the IP address of PC as 10.0.0.1 and server as 10.0.0.2
- Now go to the server and in the services tab go to DNS and turn it ON.
- Go to HTTP and turn on both http and https. Edit the html files
- In desktop option go to webservices and enter the IP address of the server
- Now go to DNS in services tab add a domain name and the ip address of the server in the address. Click on add and then save
- In the desktop option of pc go to webservices and search the domain name entered

Observation:

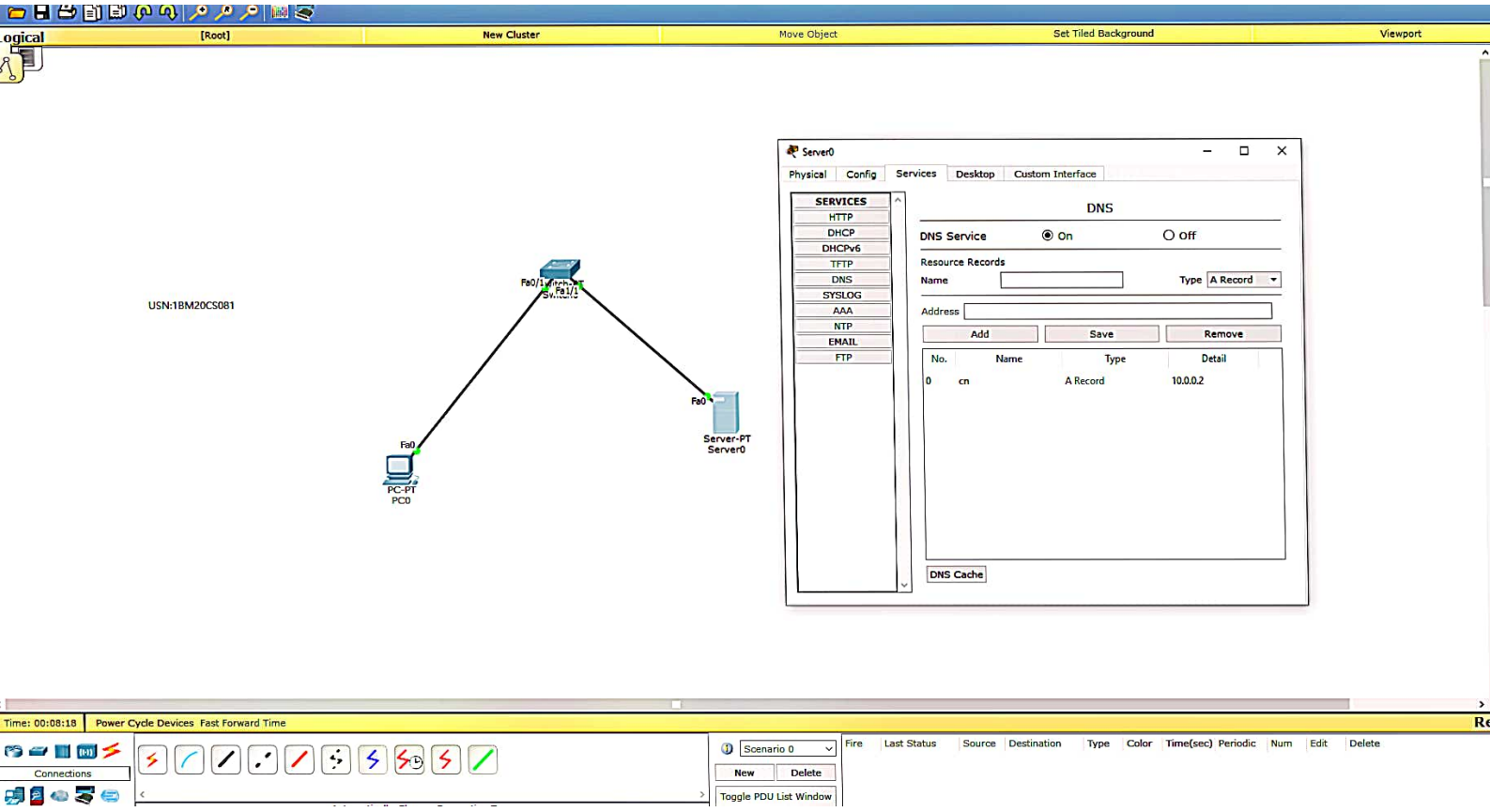
Learning Outcome; Using DNS it is easy to call websites with their names instead of IP address. DNS helps in naming conversion as computer are comfortable with IP address. It maps the name and its corresponding IP address

Result.

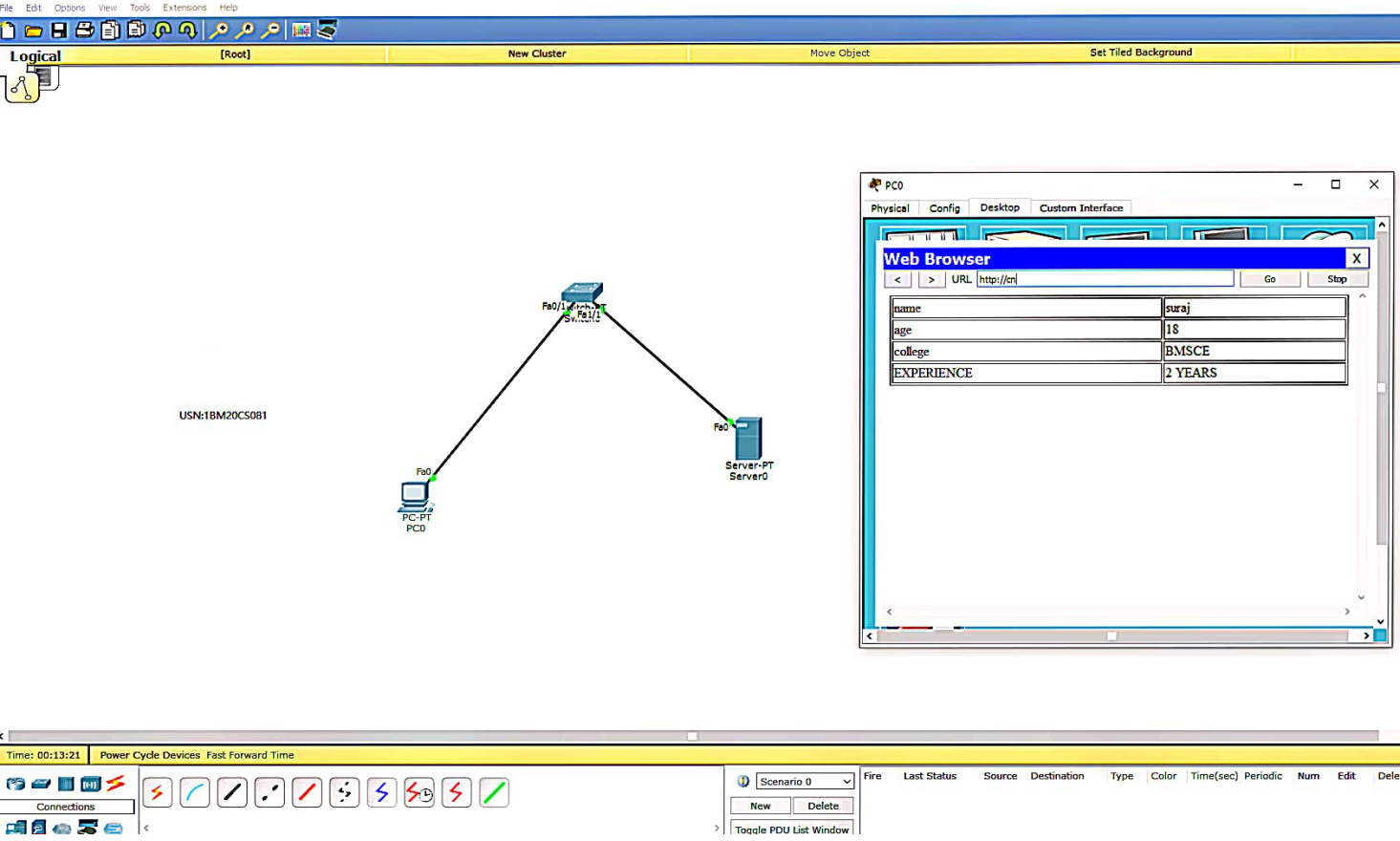
Web Browser

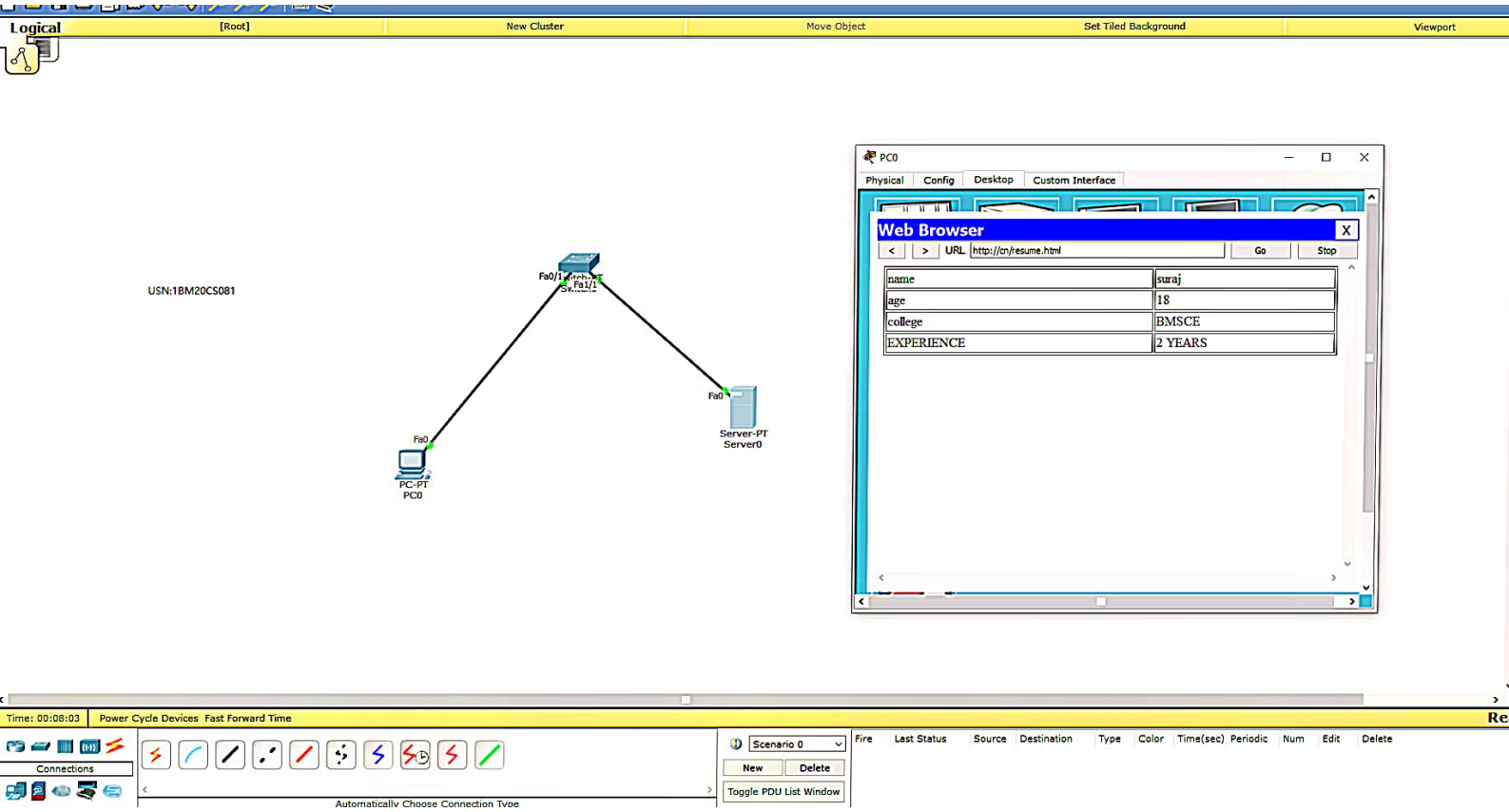
< > URL http://csebmsce Go Stop

BMSCE


[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
Fa0/1
Fa1/1
Fa0
Server-PT
Server0
Fa0
PC-PT
PC0
Server0
Physical
Config
Services
Desktop
Custom Interface
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Detail
0
cn
A Record
10.0.0.2
DNS Cache

Time: 00:08:18
Power Cycle Devices
Fast Forward Time
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
Fa0/1
Fa1/1
Switch1
Fa0
Server-PT
Server0
Fa0
PC-PT
PC0
PC0
Physical
Config
Desktop
Custom Interface
Web Browser
URL
http://cn
Go
Stop
name
suraj
age
18
college
BMSCE
EXPERIENCE
2 YEARS
Time: 00:13:21
Power Cycle Devices
Fast Forward Time
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
USN:1BM20CS081
Fa0/1
Fa1/1
Fa0
Server-PT
Server0
Fa0
PC-PT
PC0
PC0
Physical
Config
Desktop
Custom Interface
Web Browser
X
URL
http://cn/resume.html
Go
Stop
name
suraj
age
18
college
BMSCE
EXPERIENCE
2 YEARS

Time: 00:08:03
Power Cycle Devices
Fast Forward Time
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete

Lab - 7

chandra's
Dt: Pg:

Aim:

```
#include <stdio.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
#include <string.h>

void main ( ) {
  int i, j, keylen, msglen;
  char input[100], key[30], temp[30], quot[100],
       rem[30], key1[30];

printf ("Enter Data: ");
  gets (input);
printf ("Enter key: ");
gets (key);
keylen = strlen(key);
msglen = strlen (input);
strcpy (key1, key);
for (i=0; i<keylen-1; i++) {
 input [msglen + i] = '0';
  }

for (i=0; i<keylen; i++)
 temp [i] = input [i]
for (i=0; i<msglen; i++) {
   quot [i] = temp [0];
if (quot[i] == '0')
for (j=0; j<keylen; j++)
```

```
def division(code, poly):
    i = len(poly)
    temp = code[0:len(poly)]
    for j in range(0, len(code) - len(poly)):
        if (temp[0] != '0'):
            res = xor(temp, poly, len(poly))
            temp = res[1:] + code[i]
        else:
            temp = temp[1:] + code[i]
        i = i+1
    print(temp)
    if (temp[0] != '0'):
        res = xor(temp, poly, len(poly))
        rem = res[1:]
    else:
        rem = temp[1:]
    return rem

def xor(a, b, n):
    ans = ""
    for i in range(n):
        if (a[i] == b[i]):
            ans += '0'
        else:
            ans += '1'
    return ans

code = input("Enter codeword in")
poly = "1101"
zeros = "000"
modified_code = code + zeroes
sender_division(modified_code, poly)
receiver = code + sender
ans = division(receiver, poly)
if ans == '000':
    print("no error")
else:
    print("error data")
```

Wed 5/11/2023

OUTPUT

Enter data : 10110101

Enter g(x) : 1010

Quotient is 1001000100

Remainder is 000

modified data is : 10110101000

case ii)

Enter g(x) : 10001000000100001

Enter data : 1011101

Quotient is : 1011000011000111

Remainder is : 010011

modified data is : 10001000000100001010011

Lab-8

chandra's Dt: Pg:

```
#include <bits/stdc++.h>
#include <unistd.h>
using namespace std;
#define bucketsize 500

void bucketInput(int a, int b)
{
if (a > bucketsize)
 cout << "\n\t\t Bucket overflow";
  else {
  sleep(5);
  while (a>b) {
   cout << "\n\t\t" << b << " bytes outputted.";
  a-=b;
  sleep(5);
   }
   if (a>0)
   cout << "\n\t\t Last " << a << " bytes sent\t";
   cout << "\n\t\t Bucket output successful";
}
}
int main()
{
 int op, pktsize;
 cout << "Enter Output rate:";
  cin >> op;
 for (int i=1; i<=5; i++)
  {
   sleep(rand()%10);
   pktsize = rand()%700;
  cout << "\n Packet no " << i << " \t Packet
       size = " << pktsize;
  bucketInput(pktsize, op);
```

```
}
cout << endl;
return 0;
}
```

Output

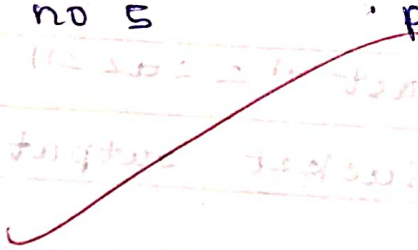
Enter output rate: 100

packet no 1 : Packet size = 186
100 bytes outputted
Last 86 bytes sent
Bucket output successful

Packet no 3 : packet size = 535
Bucket overflow

Packet no 4 : packet size = 492
100 bytes outputted
100 bytes outputted
100 bytes outputted
100 bytes outputted

packet no 5 : Packet size = 521
Bucket overflow

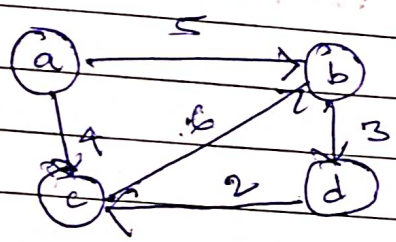


```
Enter bucket size
500
Enter  output rate
100
Enter packet size
700
Packets too big for bucket
Amount of bucket filled 0
Do you want to enter another packet(1 for yes, 2 for no)
1
Enter packet size
200
Amount of bucket filled 100
Do you want to enter another packet(1 for yes, 2 for no)
1
Enter packet size
300
Amount of bucket filled 300
Do you want to enter another packet(1 for yes, 2 for no)
1
Enter packet size
100
Amount of bucket filled 300
Do you want to enter another packet(1 for yes, 2 for no)
2


...Program finished with exit code 0
Press ENTER to exit console.
```

Lab - 9

chandra's
Dt: Pg:



Bellman

```
#include<stdio.h>
#include<stdlib.h>
int Bellman_ford(int cn[20][20], int v, int E,
                 int edge[20][2])
int i,u,v,k,distance[20],parent[20],s,flag=1;
for(i=0; i<v; i++)
        distance[i]=1000; parent[i]=-1;
        printf("Enter source:");
        scanf("%d",&s);
        distance[s-1]=0;
for(i=0; i<v-1; i++)
{
    for(k=0; k<E; k++)
    {
        u=edge[k][0], v=edge[k][1];
        if(distance[u]+cn[u][v]<distance[v])
            distance[v]=distance[u]+cn[u][v];
            parent[v]=u;
    }
}
for(k=0; k<E; k++)
{
    u=edge[k][0], v=edge[k][1];
    if(distance[u]+cn[u][v]<distance[u])
        flag=0;
}
```

```
    for (i=0; i<V; i++)
        printf("vertex %d -> cost = %d  parent = %d\n",
                i+1, distance[i], parent[i]+1);

    return flag;
}
int main()
{
    int V, edge[20][2], er[20][20], i, j, k=0;
    printf("BELLMAN FORD\n");
    printf("Enter no. of vertices:");
    scanf("%d", &V);
    printf("Enter graph in matrix form:\n");
    for(i=0; i<V; i++)
        for(j=0; j<V; j++)
        {
            scanf("%d", &er[i][j]);
            if(er[i][j]!=0)
                edge[k][0]=i; edge[k++][1]=j;
        }
    if (Bellman_Ford(er, V, k, edge))
        print("\n No negative weight cycle\n");
    else printf("\n Negative weight cycle exists\n");
    return 0;
}
```

OUTPUT

```
BELLMAN FORD
Enter no. of vertices : 4
Enter graph in matrix form:
  0   5   4   999
  5   0   6   3
  999 3   1   6
  2   0   1   4
Enter source : 1
Vertex 1 -> cost = 0    parent = 0
Vertex 2 -> cost = 5    parent = 1
Vertex 3 -> cost = 4    parent = 1
```

Dijkstra

chandra's Dt: Pg:

```
#include <stdio.h>
#include <conio.h>
#define INFINITY 999;
#define MAX 10
void dijkstra (int G[MAX][MAX], int n, int startnode);
int main () {
    int G[MAX][MAX], i, j, n, u;
    printf ("Enter no. of vertices: n");
    scanf ("%d", &n); printf ("\n Enter the adjacency
    for (i=0; i<n; i++)
        for (j=0; j<n; j++)
            scanf ("%d", &G[i][j]);
    printf ("\n Enter the starting node:");
    scanf ("%d", &u);
    dijkstra (G, n, u);
    return 0;
}
void dijkstra (int G[MAX][MAX], int n, int startnode)
{
    int cost[MAX][MAX], distance[MAX], pred[MAX];
    int visited[MAX], count, mindistance, nextnode, i, j;
    for (i=0; i<n; i++)
        for (j=0; j<n; j++)
            if (G[i][j]=0)
                cost[i][j] = INFINITY;
            else
                cost[i][j] = G[i][j];
    for (i=0; i<n; i++) {
        distance[i] = cost[startnode][i];
        pred[i] = startnode; visited[i]=0;
    }
    distance[startnode] = 0;
    visited[startnode] = 1;
    count = 1;
```

```
while (count
    mindistance = INFINITY;
    for (i=0; i<n; i++)
        if (distance[i] < mindistance && !visited
            mindistance = distance[i]; nextn
    }
    visited[nextnode] = 1;
    for (i=0; i<n; i++)
        if (!visited[i])
            if (mindistance + cost[nextnode][i]
                < distance[i])
            {
                distance[i] = mindistance + cost[nex
                pred[i] = nextnode;
            }
        count++;
}
for (i=0; i<n; i++)
    if (i != startnode) {
        printf("\n Distance of node %d = %d", i, dist
        printf("\n Path = %d", i); j = i;
        do {
            j = pred[j];
            printf("<- %d", j);
        } while (j != startnode);
    }
}
```

OUTPUT

```
Enter no. of vertices : 4
Enter the adjacency matrix :
0   5   4   999
5   0   6   3
999 3   1   6
2   0   1   4

Enter the starting node : 1

Distance of node0 = 5
    path = 0 <- 1
Distance of node2 = 4
    path = 2 <- 3 <- 1
Distance of
```

```
BELLMAN FORD
Enter no. of vertices: 4
Enter graph in matrix form:
0  5  4  999
5  0  6  3
999  3  1  6
2  0  1  4
Enter source: 1
Vertex 1 -> cost = 0 parent = 0
Vertex 2 -> cost = 5 parent = 1
Vertex 3 -> cost = 4 parent = 1
Vertex 4 -> cost = 8 parent = 2

No negative weight cycle


...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter no. of vertices:4

Enter the adjacency matrix:
0 5 4 999
5 0 6 3
999 3 1 6
2 0 1 4

Enter the starting node:1

Distance of node0=5
Path=0<-1
Distance of node2=4
Path=2<-3<-1
Distance of node3=3
Path=3<-1

..Program finished with exit code 0
Press ENTER to exit console.
```

Lab - 10

chandra's Dt: Pg:

Client

```
from socket import *
serverName = '127.0.0.1'
serverPort = 12000
2
clientSocket = socket (AF_INET, SOCK_STREAM)
clientSocket.connect ((serverName, serverPort))
sentence = input ("\n Enter file name :")
clientSocket.send (sentence.encode())
fileContents = clientSocket.recv(1024).decode()
print ('\n From Server :\n')
print (fileContents)
ClientSocket.close()
```

Server

```
from socket import *
serverName = "127.0.0.1"
serverPort = 12000
serverSocket = socket (AF_INET, SOCK_STREAM)
serverSocket.bind ((serverName, serverPort))
serverSocket.listen (1)
while 1 :
    print ("The server is ready to receive")
    connectionSocket, addr = serverSocket.accept().
    sentence = connectionSocket.recv(1024).decode()
    file = open (sentence, "r")
    l = file.read (1024)
    connectionSocket.send (l.encode())
    print ('\n Sent contents of' + sentence)
    file.close()
    connectionSocket.close()
```

client.py - C:/Users/mdsur/Desktop/client.py (3.10.9)

File Edit Format Run Options Window Help

```
from socket import *
serverName = '127.0.0.1'
serverPort = 12000

2
clientSocket = socket(AF_INET, SOCK_STREAM)
clientSocket.connect((serverName,serverPort))
sentence = input("\nEnter file name: ")
clientSocket.send(sentence.encode())
filecontents = clientSocket.recv(1024).decode()
print ('\nFrom Server:\n')
print(filecontents)
clientSocket.close()
```

IDLE Shell 3.10.9

File Edit Shell Debug Options Window Help

```
Python 3.10.9 (tags/v3.10.9:1dd9be6, Dec  6 2022, 20:01:21) [MSC v.1934 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> ================== RESTART: C:/Users/mdsur/Desktop/client.py ==================

Enter file name: server.py

From Server:

from socket import *
serverName="127.0.0.1"
serverPort = 12000
serverSocket = socket(AF_INET,SOCK_STREAM)
serverSocket.bind((serverName,serverPort))
serverSocket.listen(1)
while 1:
    print ("The server is ready to receive")
    connectionSocket, addr = serverSocket.accept()
    sentence = connectionSocket.recv(1024).decode()
    file=open(sentence,"r")
    l=file.read(1024)
    connectionSocket.send(l.encode())
    print ('\nSent contents of ' + sentence)
    file.close()
    connectionSocket.close()

>>>
```

server.py - C:/Users/mdsur/Desktop/server.py (3.10.9)

File Edit Format Run Options Window Help

```
from socket import *
serverName="127.0.0.1"
serverPort = 12000
serverSocket = socket(AF_INET,SOCK_STREAM)
serverSocket.bind((serverName,serverPort))
serverSocket.listen(1)
while 1:
    print ("The server is ready to receive")
    connectionSocket, addr = serverSocket.accept()
    sentence = connectionSocket.recv(1024).decode()
    file=open(sentence,"r")
    l=file.read(1024)
    connectionSocket.send(l.encode())
    print ('\nSent contents of ' + sentence)
    file.close()
    connectionSocket.close()
```

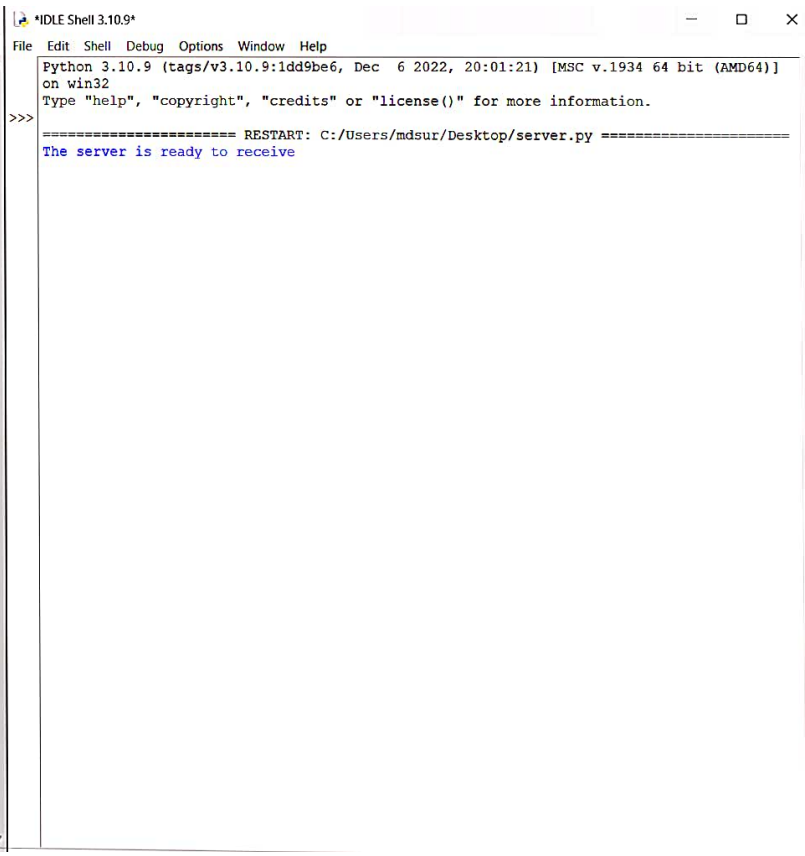
IDLE Shell 3.10.9

File Edit Shell Debug Options Window Help

```
Python 3.10.9 (tags/v3.10.9:1dd9be6, Dec  6 2022, 20:01:21) [MSC v.1934 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/mdsur/Desktop/server.py ==========
The server is ready to receive

Sent contents of server.py
The server is ready to receive
```


server.py - C:/Users/mdsur/Desktop/server.py (3.10.9)
File Edit Format Run Options Window Help
from socket import *
serverName="127.0.0.1"
serverPort = 12000
serverSocket = socket(AF_INET,SOCK_STREAM)
serverSocket.bind((serverName,serverPort))
serverSocket.listen(1)
while 1:
print ("The server is ready to receive")
connectionSocket, addr = serverSocket.accept()
sentence = connectionSocket.recv(1024).decode()
file=open(sentence,"r")
l=file.read(1024)
connectionSocket.send(l.encode())
print ('\nSent contents of ' + sentence)
file.close()
connectionSocket.close()


IDLE Shell 3.10.9
File Edit Shell Debug Options Window Help
Python 3.10.9 (tags/v3.10.9:1dd9be6, Dec 6 2022, 20:01:21) [MSC v.1934 64 bit (AMD64)]
on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/mdsur/Desktop/server.py ==========
The server is ready to receive

ClientUDP

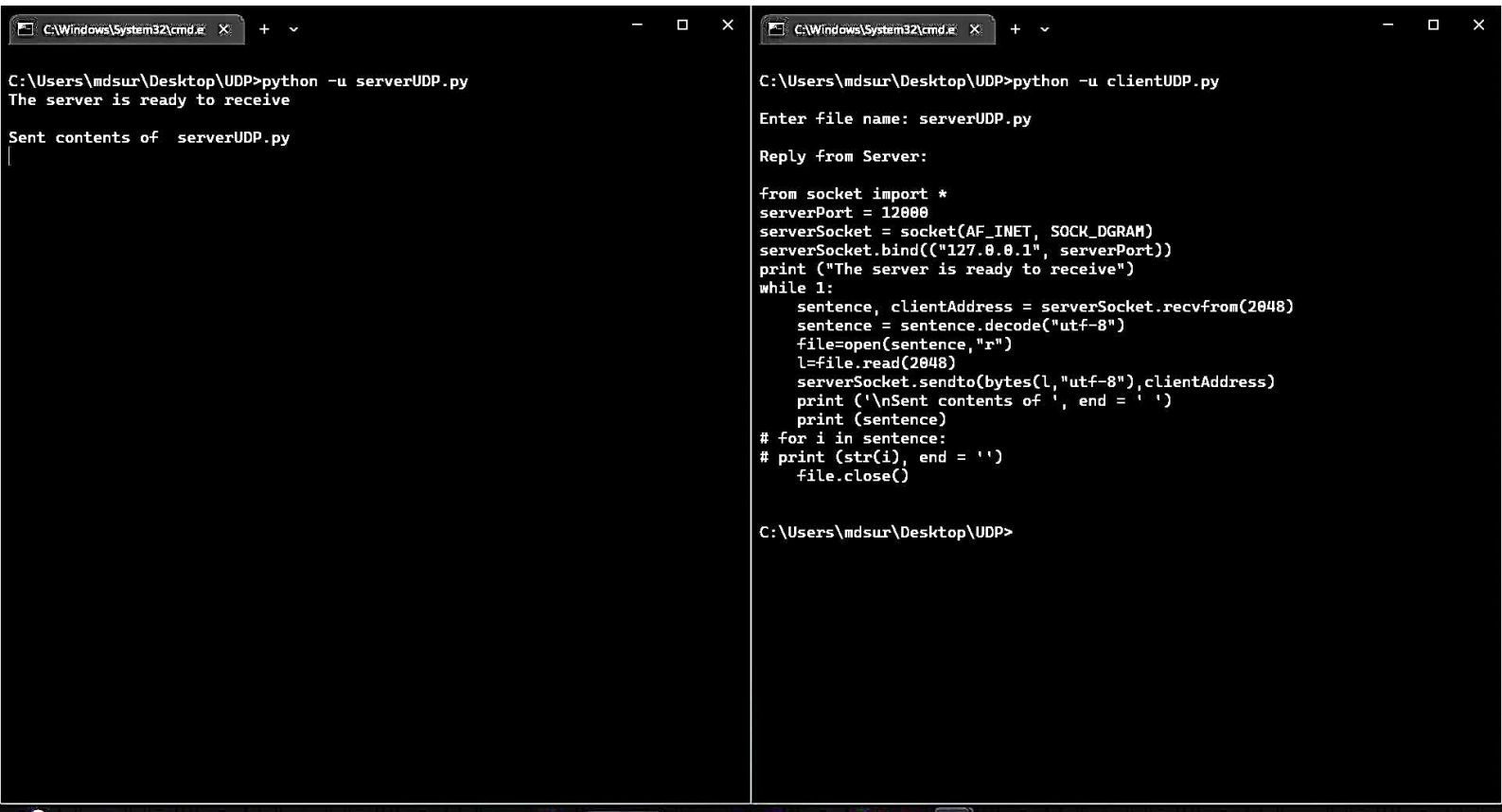
```
from socket import *
serverName = "127.0.0.1"
serverPort = 12000
clientSocket = socket(AF_INET, SOCK_DGRAM)
sentence = input("\n Enter filename: ")
clientSocket.sendto(bytes(sentence, "utf-8"),
                    (serverName, serverPort))

fileContents, serverAddress = clientSocket.recvfrom(2048)
print("\n Reply from Server :\n")
print(fileContents.decode("utf-8"))
clientSocket.close()
clientSocket.close()
```

ServerUDP

```
from socket import *
serverPort = 12000
serverSocket = socket(AF_INET, SOCK_DGRAM)
serverSocket.bind(("127.0.0.1", serverPort))
print("The server is ready to recieve")
while 1:
    sentence, clientAddress = serverSocket.recvfrom(2048)
    sentence = sentence.decode("utf-8")
    file = open(sentence, "r")
    l = file.read(2048)
    serverSocket.sendto(bytes(l, "utf-8"), clientAddress)

    print("\n Sent contents of ", end = ' ')
    print(sentence)
    file.close()
```


C:\Windows\System32\cmd.e
C:\Users\mdsur\Desktop\UDP>python -u serverUDP.py
The server is ready to receive
Sent contents of serverUDP.py
C:\Windows\System32\cmd.e
C:\Users\mdsur\Desktop\UDP>python -u clientUDP.py
Enter file name: serverUDP.py
Reply from Server:
from socket import *
serverPort = 12000
serverSocket = socket(AF_INET, SOCK_DGRAM)
serverSocket.bind(("127.0.0.1", serverPort))
print ("The server is ready to receive")
while 1:
sentence, clientAddress = serverSocket.recvfrom(2048)
sentence = sentence.decode("utf-8")
file=open(sentence,"r")
l=file.read(2048)
serverSocket.sendto(bytes(l,"utf-8"),clientAddress)
print ('\nSent contents of ', end = ' ')
print (sentence)
# for i in sentence:
# print (str(i), end = '')
file.close()
C:\Users\mdsur\Desktop\UDP>
28°C
Sunny
Search
ENG
IN
14:55
29-01-2023