Computer Networks

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Course Title : Computer Networks

Course code : BCSE308P

Slot : L45-46

Faculty : Dr Neelanarayanan V

S.No	Experiment Name	Date	Page No.	Marks
1.	Basic Network Configuration Commands	10-01-2024		
2.	Client-Server Application Echo	17-01-2024		
3.	IP Address Validation and Simple application of ATM using TCP	24-01-2024		
4.	CRC code generator using socket programming	07-02-2024		
5. a)	Echo programming using UDP	21-02-2024		
5. b)	IP address validation using UDP	21-02-2024		

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5. c)	ATM simulation using UDP	21-02-2024		
6.	Stop and wait ARQ	28-02-2024		
7.	Sliding window protocol	13-03-2024		
8.	Bellman-Ford Algorithm	20-03-2024		
9.	Dijkstra Algorithm	27-03-2024		

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10.	**1. Implement different network design topologies, Ring and transfer the data packet from one PC to another PC.** **2. Implement RIP version 1 and 2**	**10-04-2024**		

AIM:

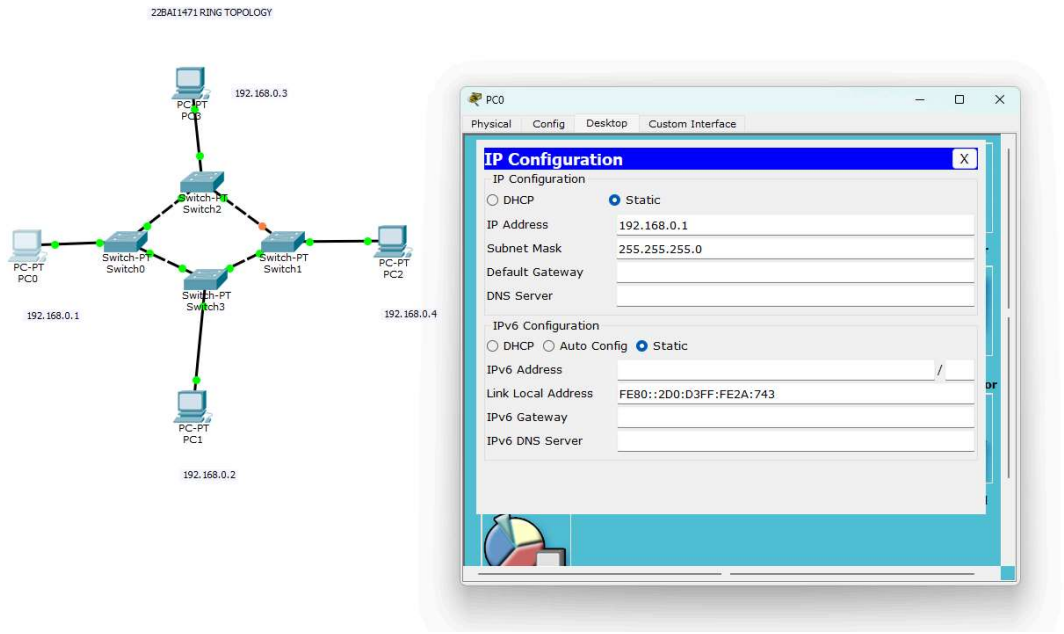
1. Implement different network design topologies, Ring and transfer the data packet from one PC to another PC.
2. Implement RIP version 1 and 2

SOFTWARE USED: cisco packet tracer

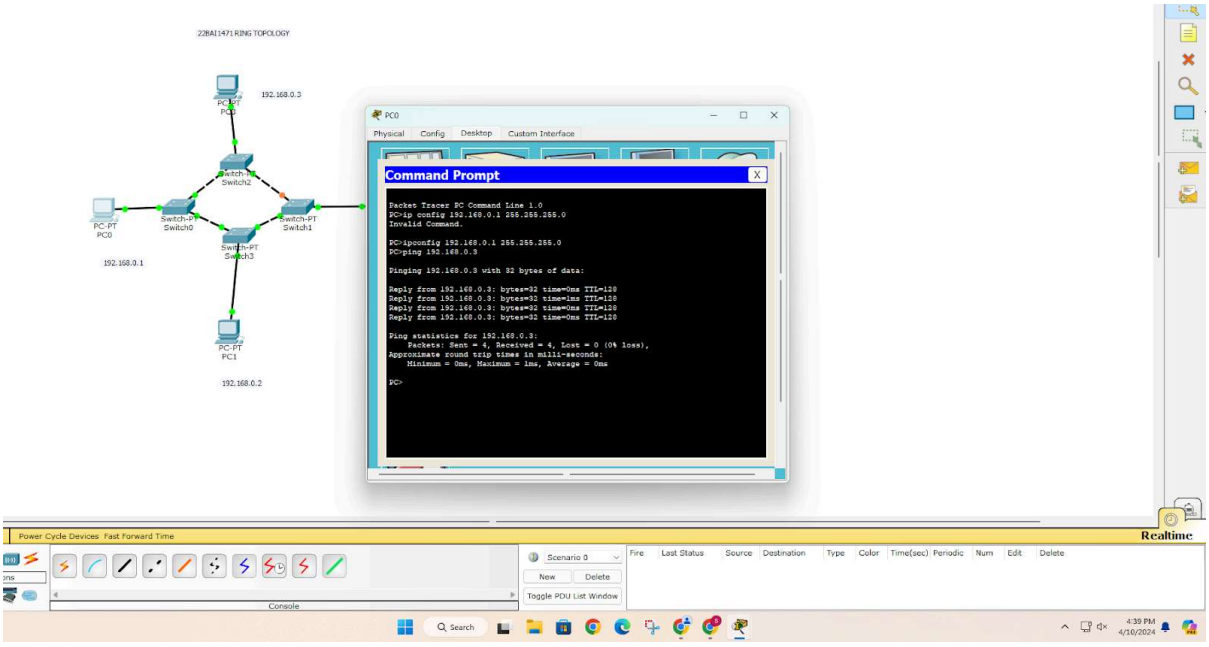
1. RING TOPOLOGY

   PROCEDURE FOR DESIGN

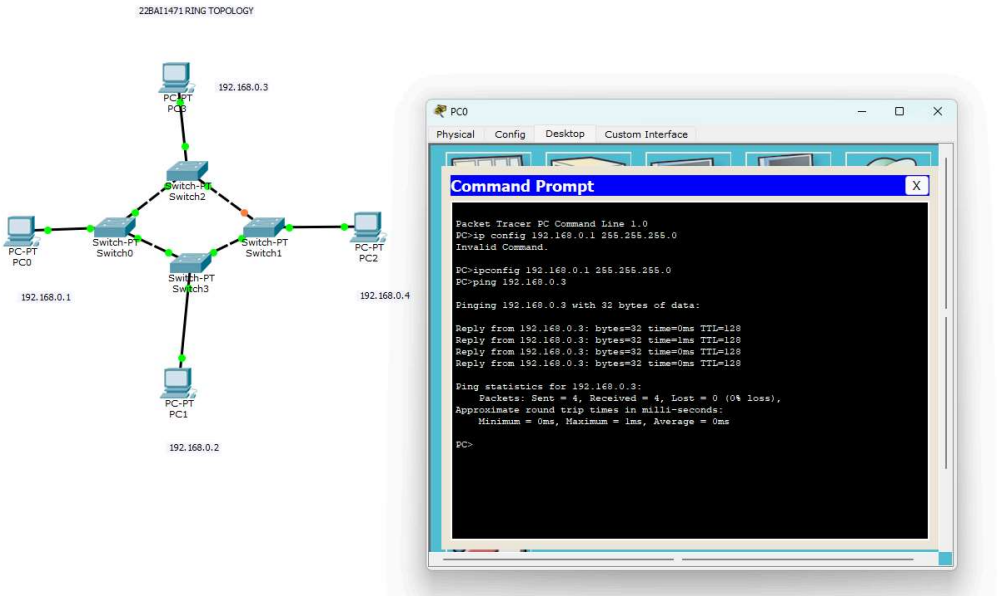
   1) Place 4 pc named GENERIC PC-PT selected from End devices
   2) Place 4 switches named GENERIC SWITCH -PT from devices
   3) Connect all of them using Automatically Choose connection type
   4) Go to a PC
   5) Configure it as shown in figure



6) Similarly configure all devices like the above step.\
7) Now move to the command prompt and configure the individual pc as directed in the picture below.



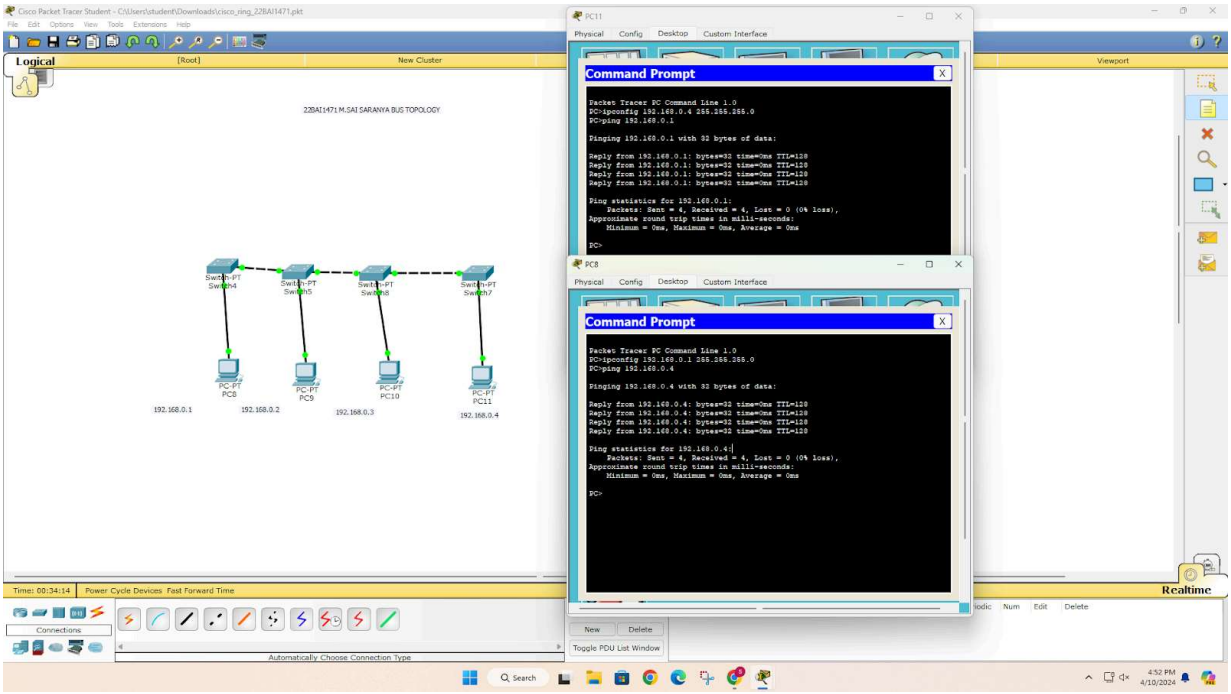
8) Similar procedure is followed for all pcs.
9) Later the connection can be verified using ping command to know how the packets are being traversed from one pc to another.



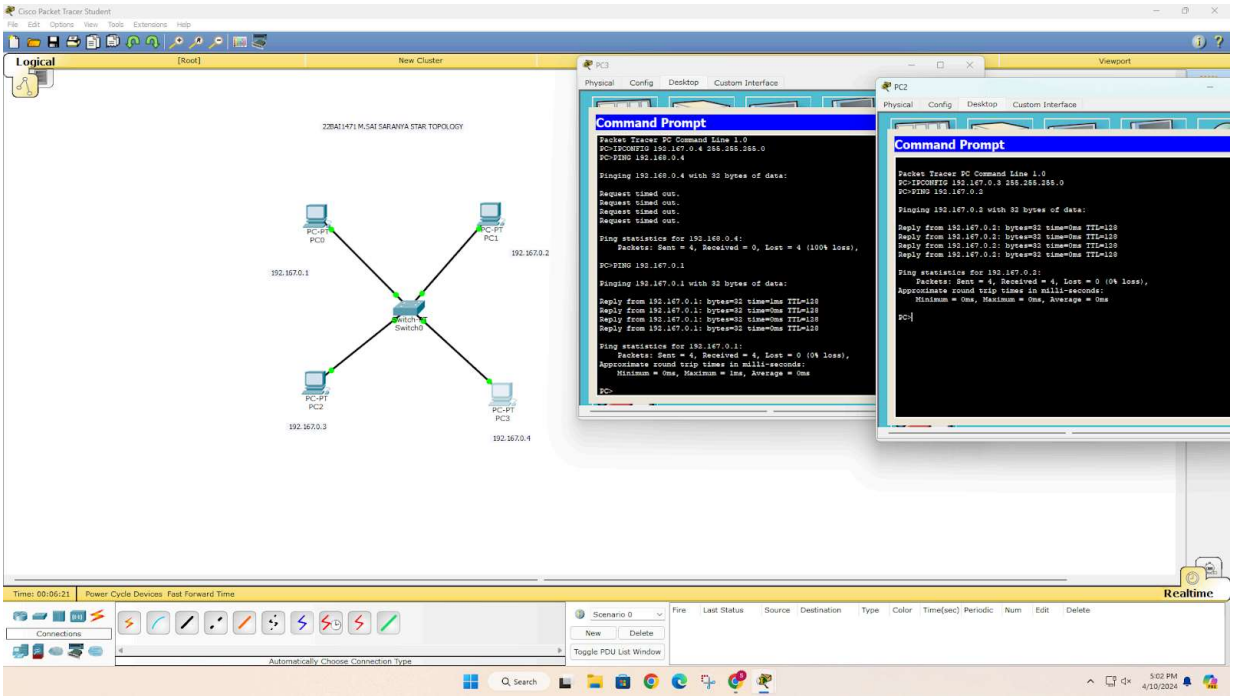
BUS TOPOLOGY

PROCEDURE

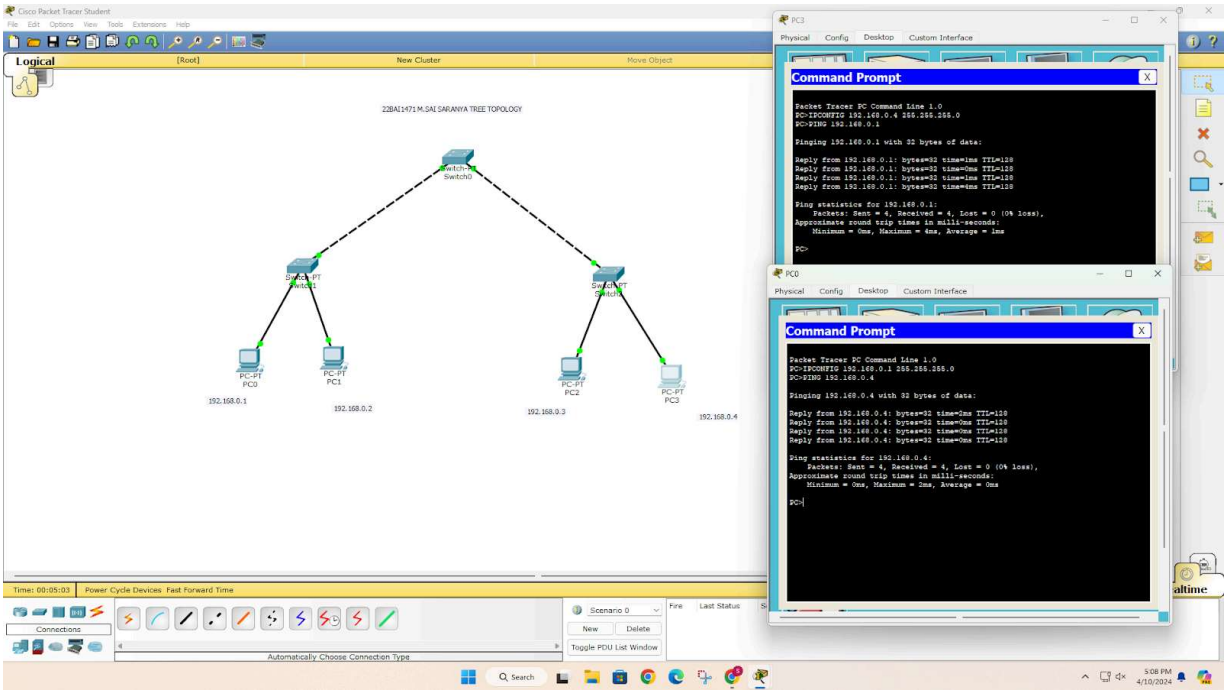
All the above steps are repeated but the design will be in linear fashion



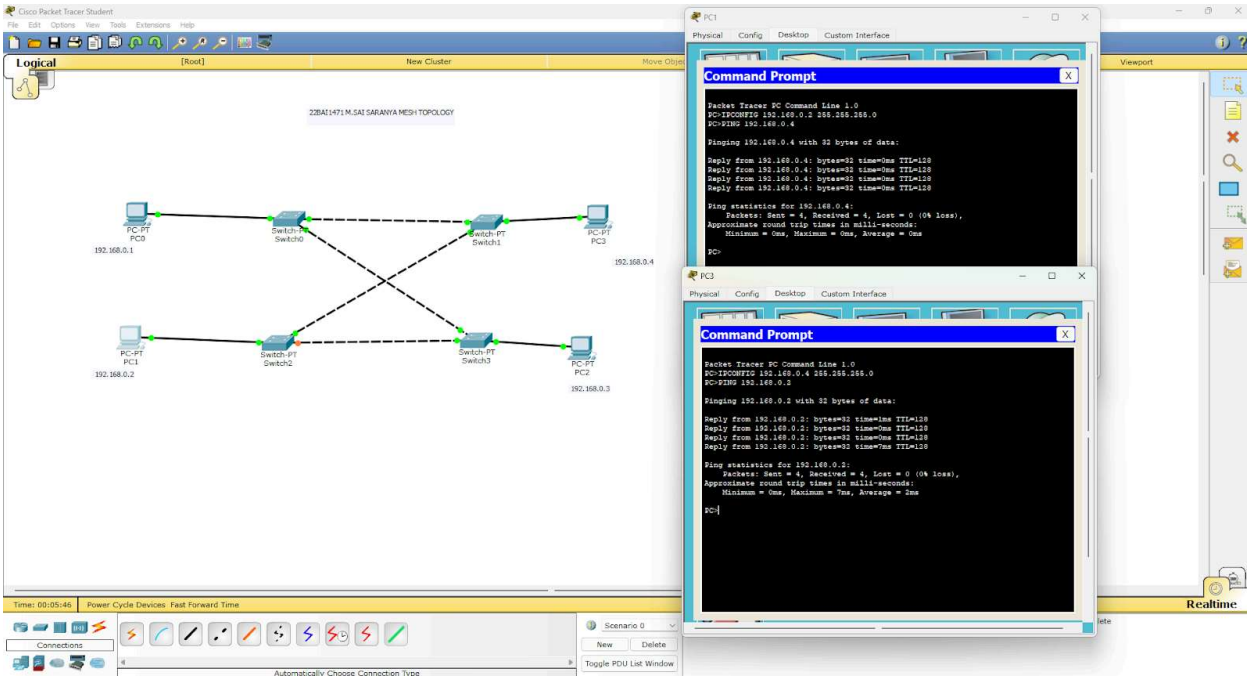
STAR TOPOLOGY



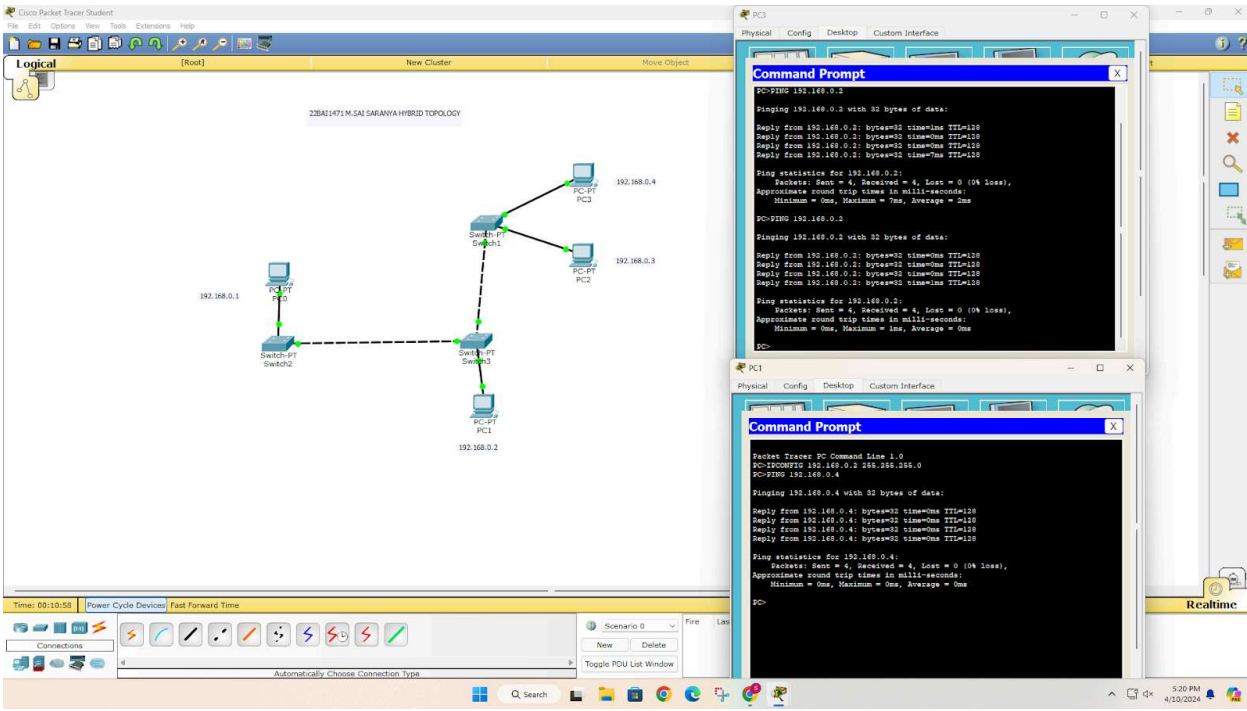
TREE TOPOLOGY



MESH TOPOLOGY

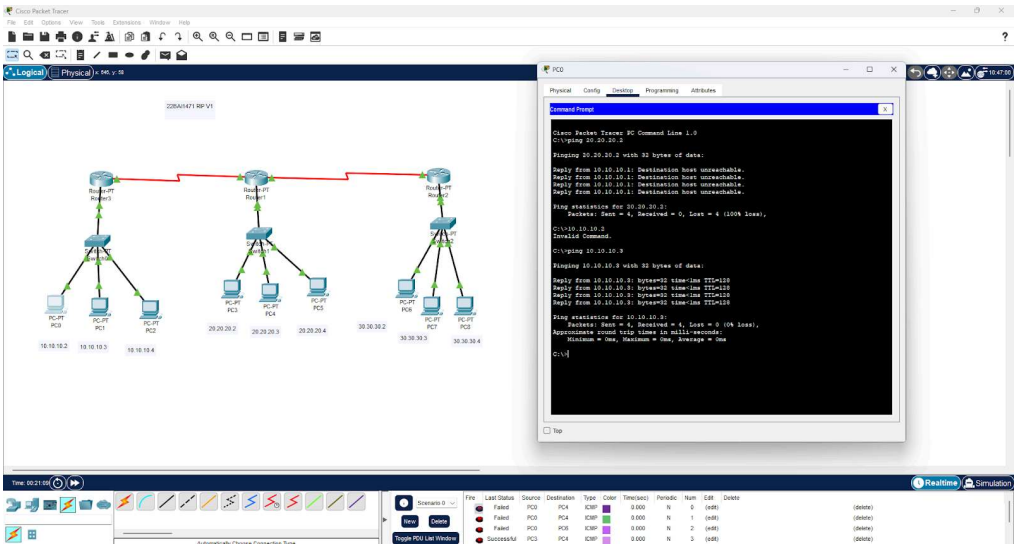


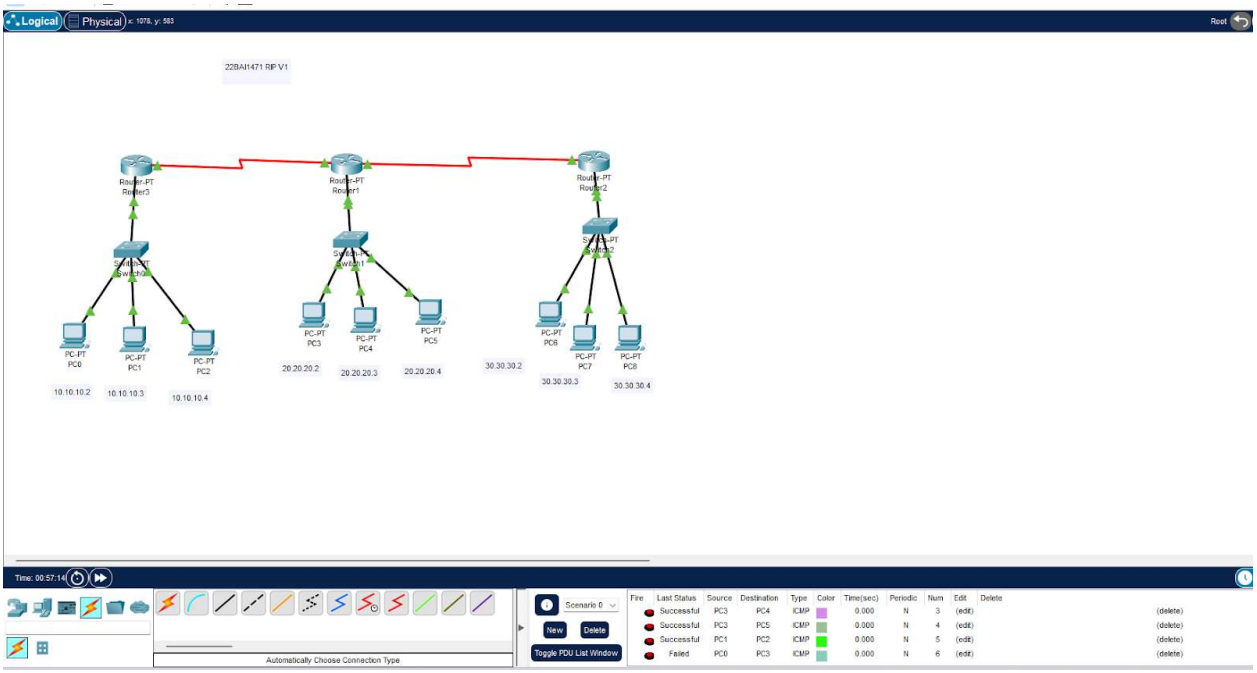
HYBRID TOPOLOGY



3. Implementing RIP version 1 and 2

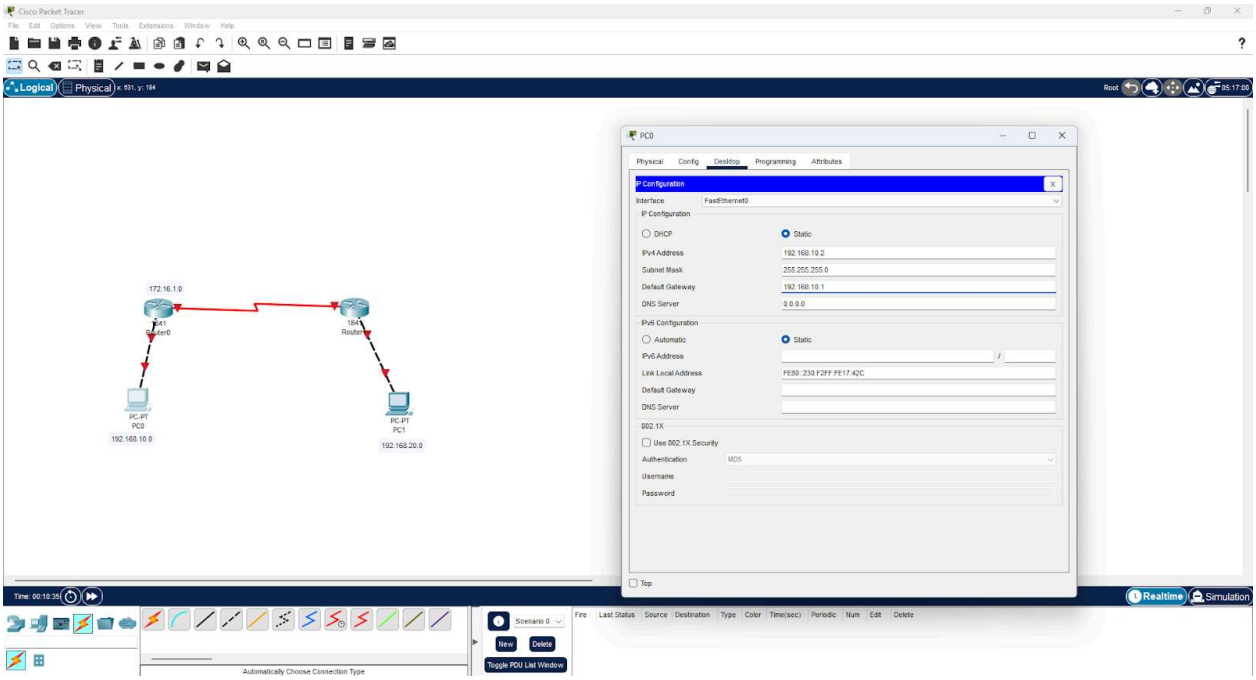
RIP version1

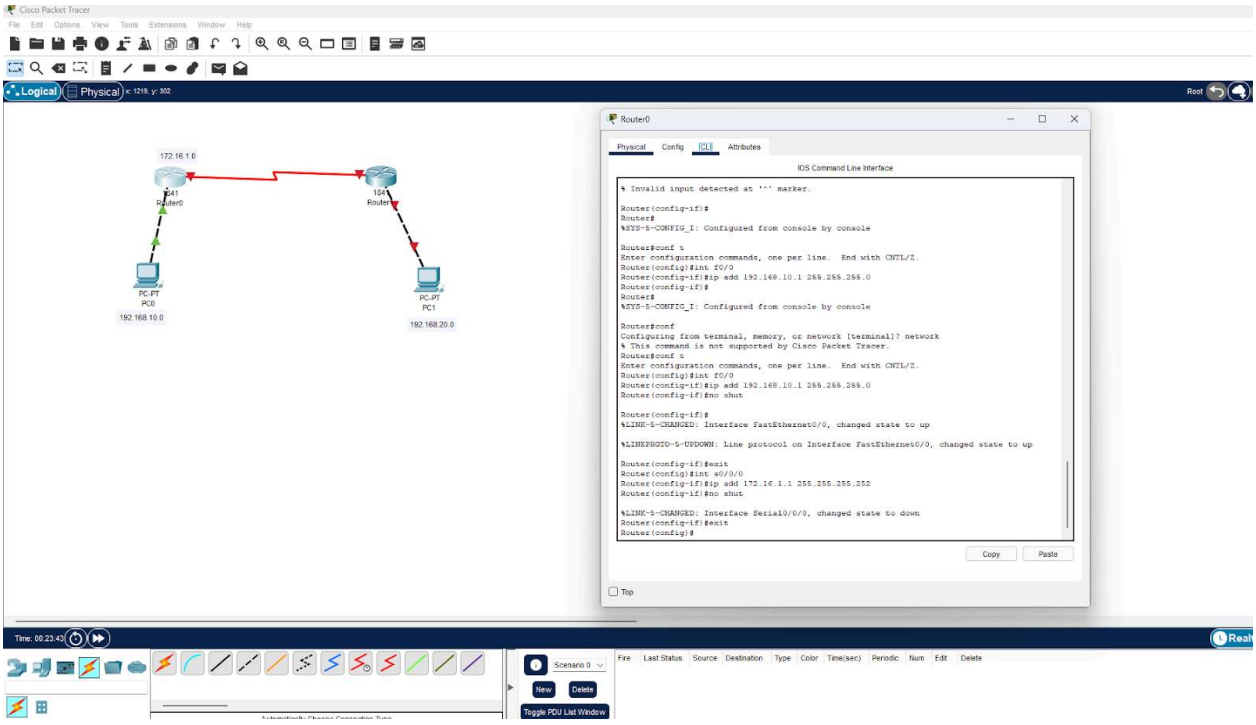


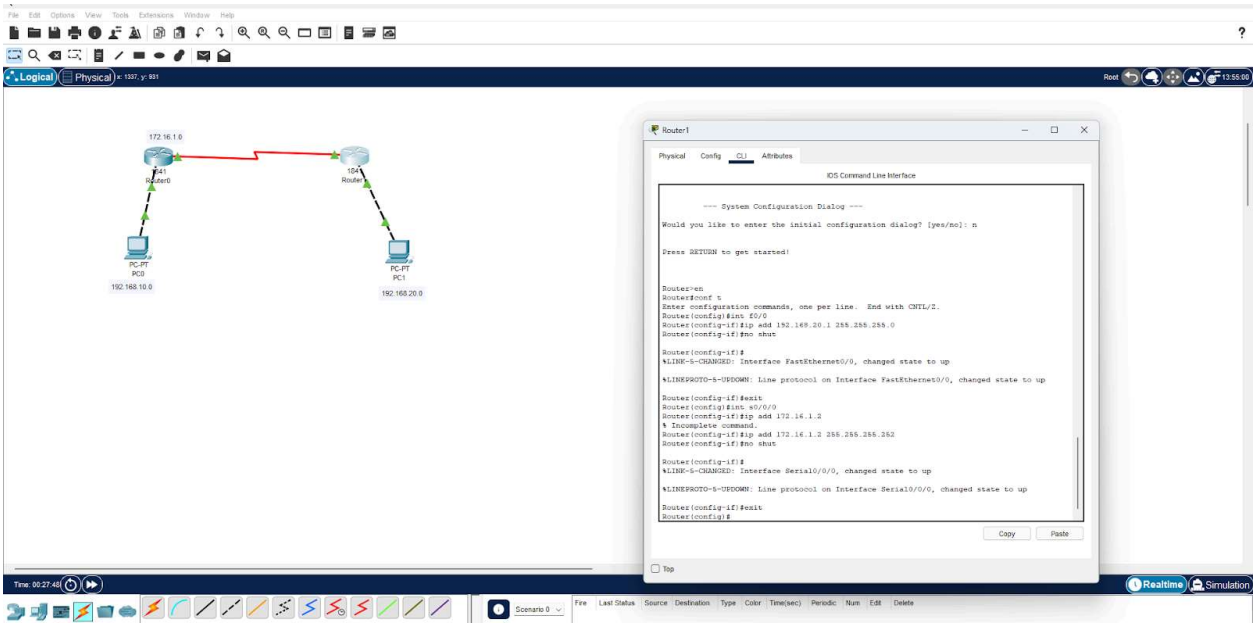


RIP V2

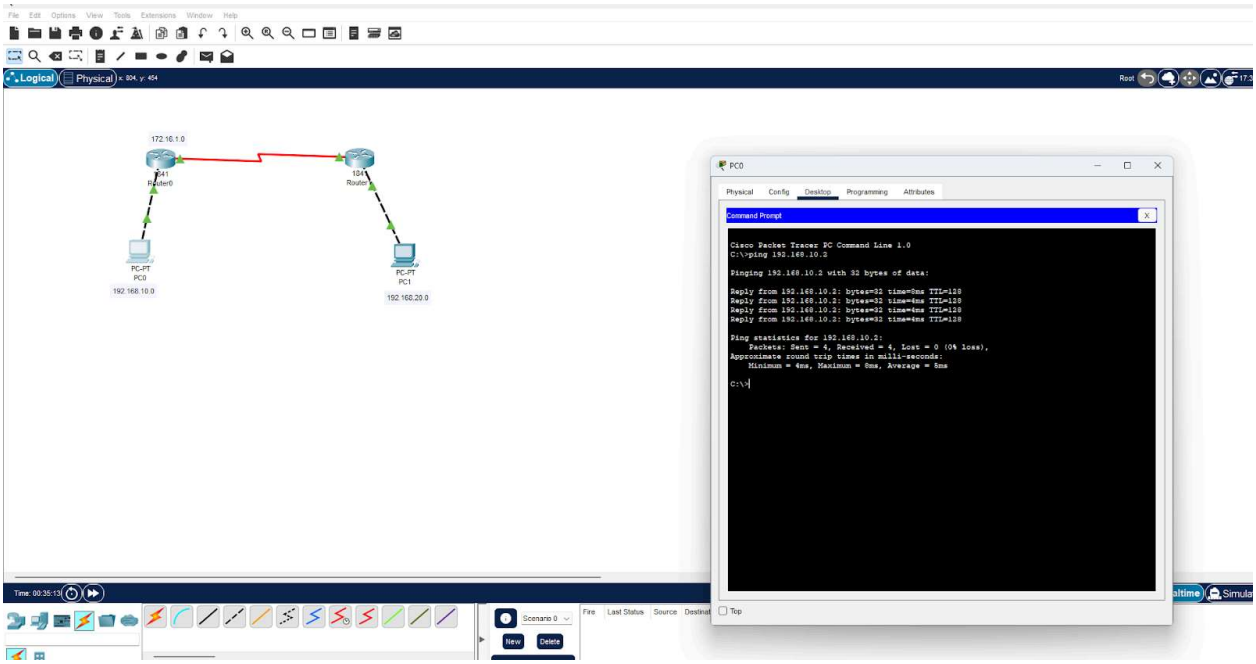
Configuring PC0


Cisco Packet Tracer
Logical
Physical
PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.10.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.10.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::230:F2FF:FE17:42C
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
172.16.1.0
1841
Router0
1841
Router1
PC-PT
PC0
192.168.10.0
PC-PT
PC1
192.168.20.0
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Automatically Choose Connection Type


Cisco Packet Tracer
Logical
Physical
Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
% Invalid input detected at '^' marker.
Router(config-if)#
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int f0/0
Router(config-if)#ip add 192.168.10.1 255.255.255.0
Router(config-if)#
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#conf
Configuring from terminal, memory, or network [terminal]? network
% This command is not supported by Cisco Packet Tracer.
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int f0/0
Router(config-if)#ip add 192.168.10.1 255.255.255.0
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)#exit
Router(config)#int s0/0/0
Router(config-if)#ip add 172.16.1.1 255.255.255.252
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#exit
Router(config)#
Copy
Paste
Top
172.16.1.0
1841
Router0
1841
Router1
PC-PT
PC0
192.168.10.0
PC-PT
PC1
192.168.20.0
Scenario 0
New
Delete
Toggle PDU List Window



Checking whether the messages are being sent from one pc to another



Commands used during configuration

```
Router>enable

Router#configure terminal

Enter configuration commands, one per line.  End with CNTL/Z.
```

```
Router(config)#interface gig0/0

Router(config-if)#ip address 192.168.1.1 255.255.255.0
```

Router(config-if)#no shutdown

Conclusion

The major difference in configuring RIPv1 and RIPv2 is the command *v2*, which enables RIP version 2 in rip config mode. It is observed that RIPv2 has more support for classless subnetting as a useful advantage.