

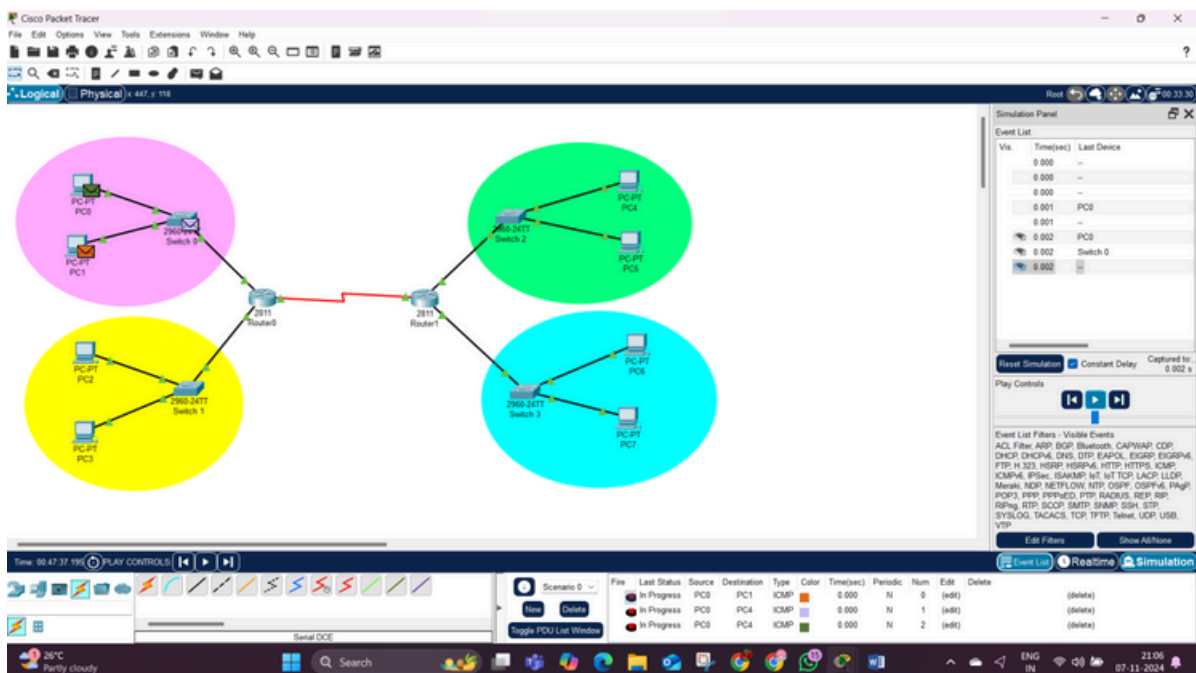
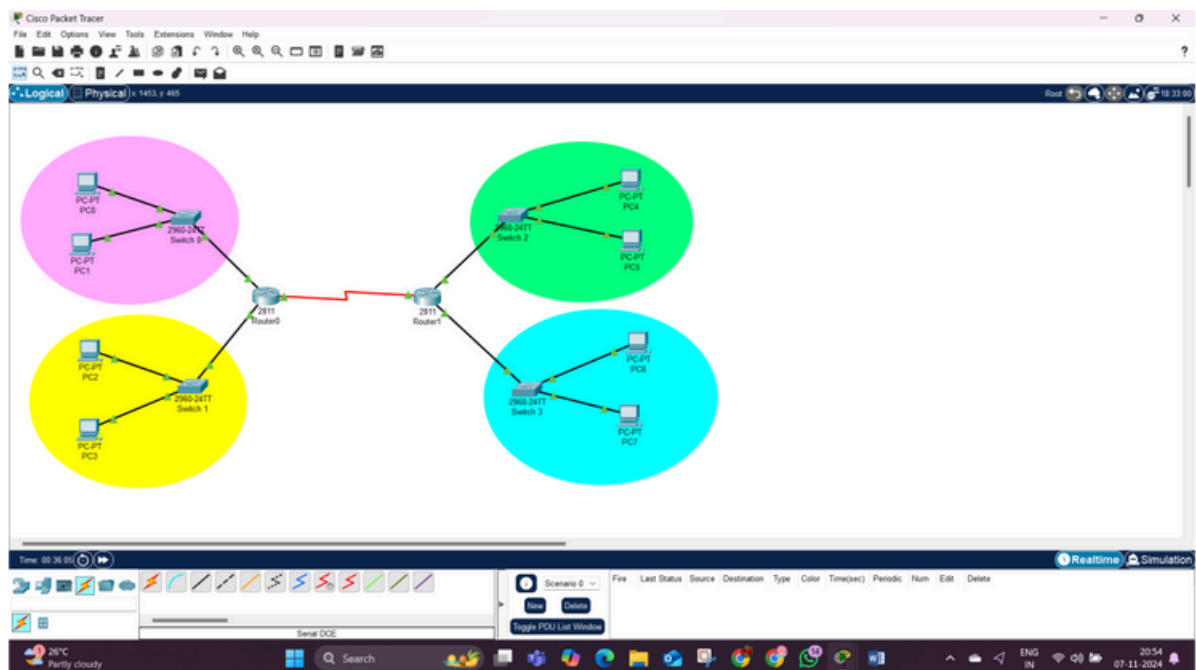
## EXPERIMENT – 9

**AIM:** - Implementation of SUBNETTING in CISCO PACKET TRACER simulator.

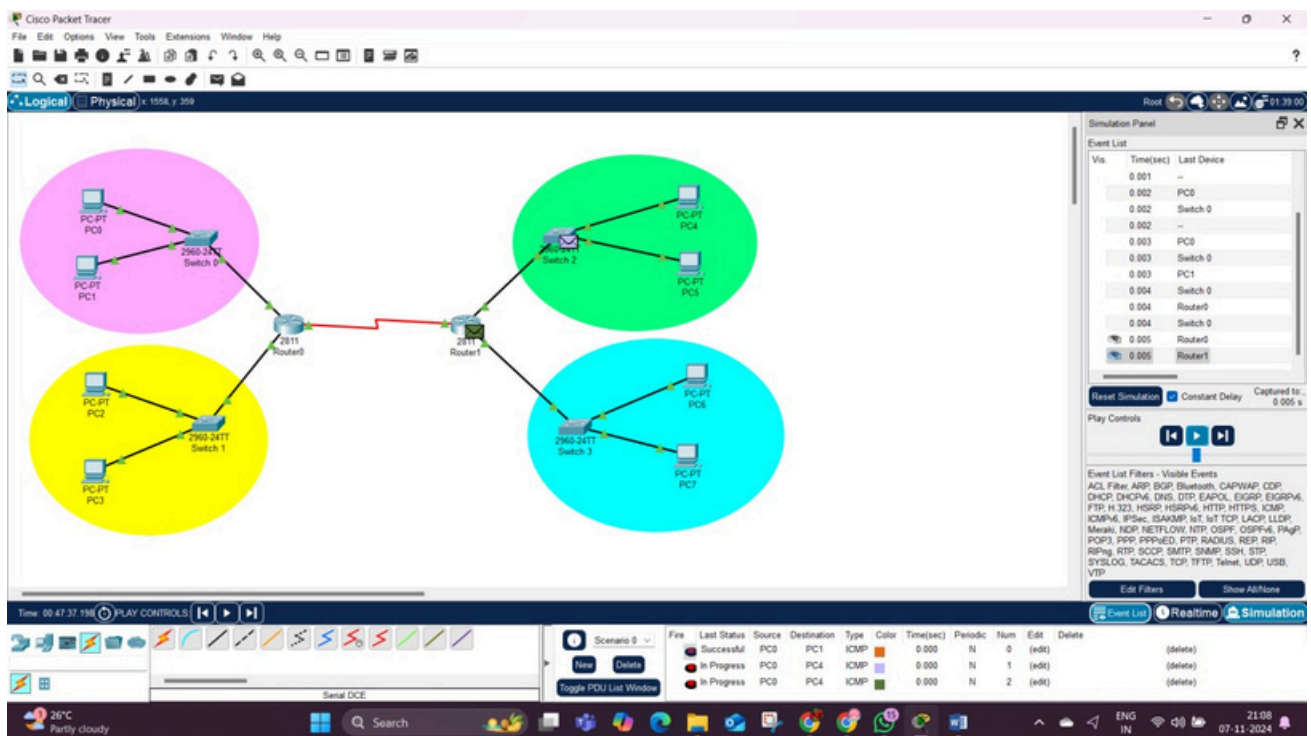
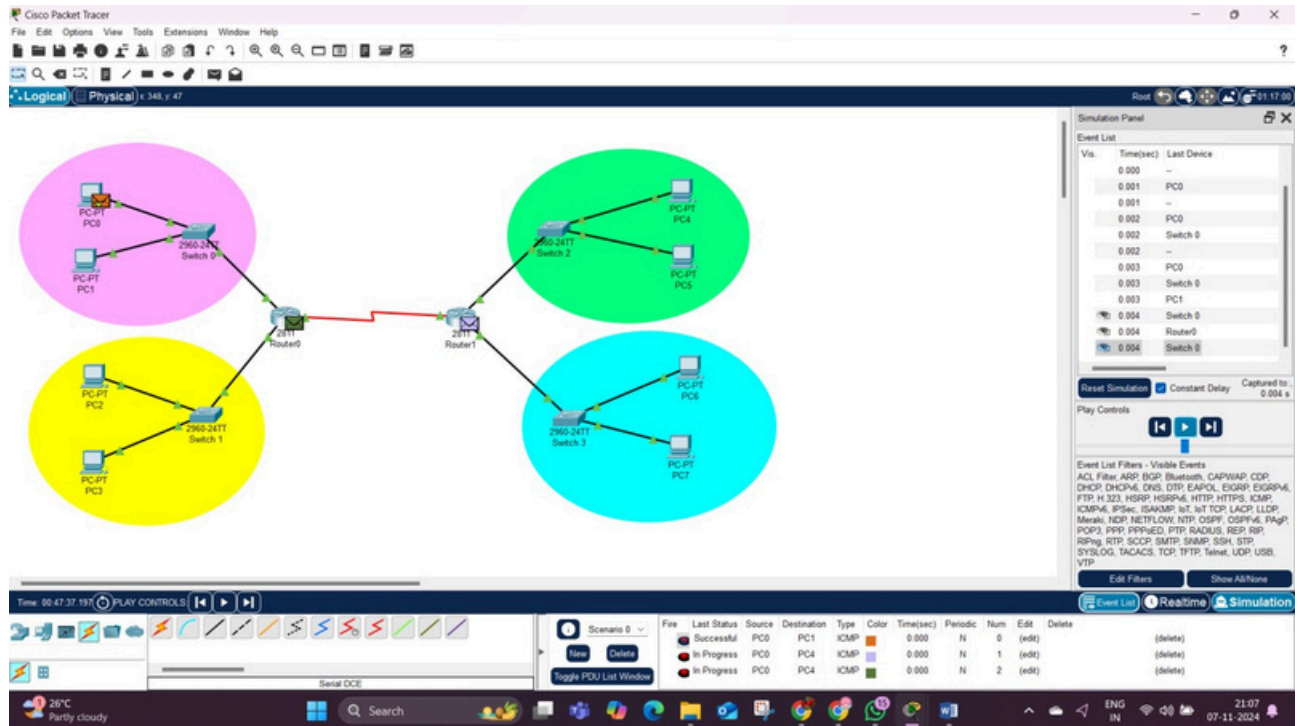
### ***What is subnetting?***

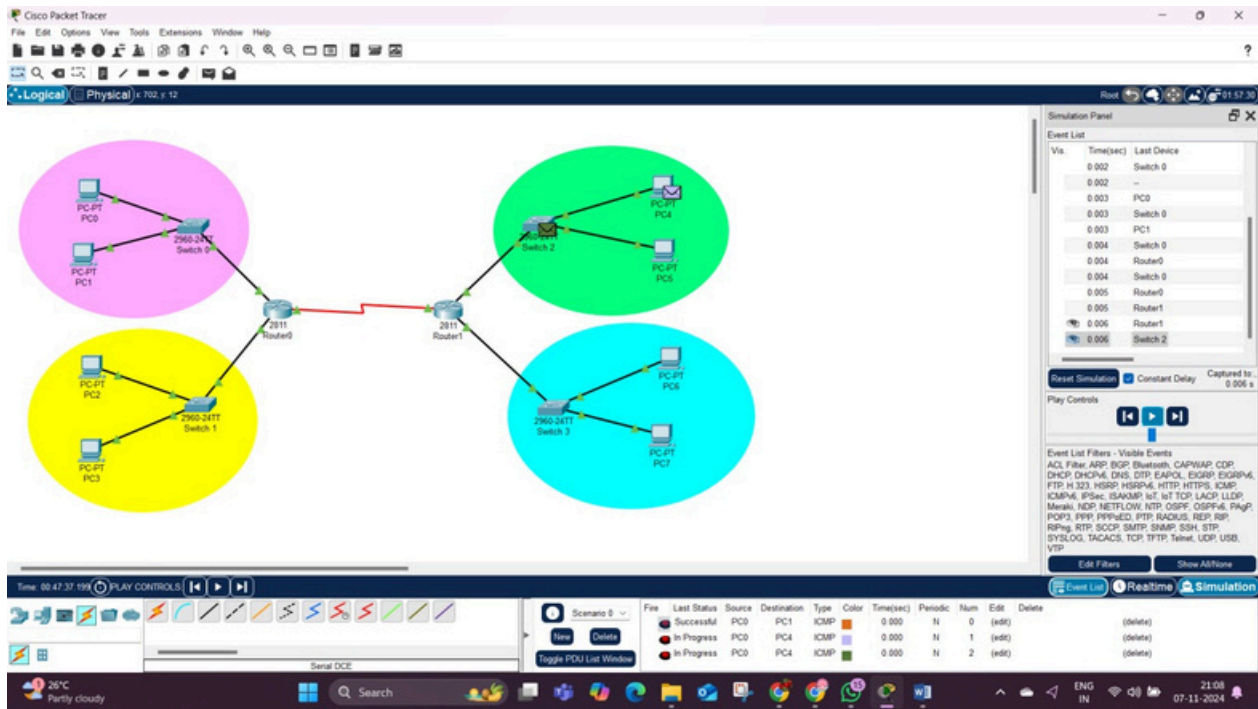
Classless IP subnetting is a technique that allows for more efficient use of IP addresses by allowing for subnet masks that are not just the default masks for each IP class. This means that we can divide our IP address space into smaller subnets, which can be useful when we have a limited number of IP addresses but need to create multiple networks.

### **OUTPUT:-**



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC1	ICMP		0.000	N	0	(edit)	(delete)
	Failed	PC0	PC4	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC0	PC4	ICMP		0.000	N	2	(edit)	(delete)





PC0

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time=185ms TTL=127
Reply from 192.168.2.2: bytes=32 time=1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 185ms, Average = 62ms
C:\>
```

☐ Top

Router0

Physical Config CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings

**ROUTING**

- Static
- RIP

**SWITCHING**

- VLAN Database

**INTERFACE**

- FastEthernet0/0
- FastEthernet0/1
- Serial0/3/0

Static Routes

Network:

Mask:

Next Hop:

Add

Network Address

192.168.2.128/26 via 192.168.2.226
192.168.2.192/27 via 192.168.2.226

Remove

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#ip route 192.168.2.128 255.255.255.192 192.168.2.226
Router(config)#ip route 192.168.2.192 255.255.255.224 192.168.2.226
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

☐ Top

Router1

Physical Config CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings

**ROUTING**

- Static
- RIP

**SWITCHING**

- VLAN Database

**INTERFACE**

- FastEthernet0/0
- FastEthernet0/1
- Serial0/3/0

Static Routes

Network:

Mask:

Next Hop:

Add

Network Address

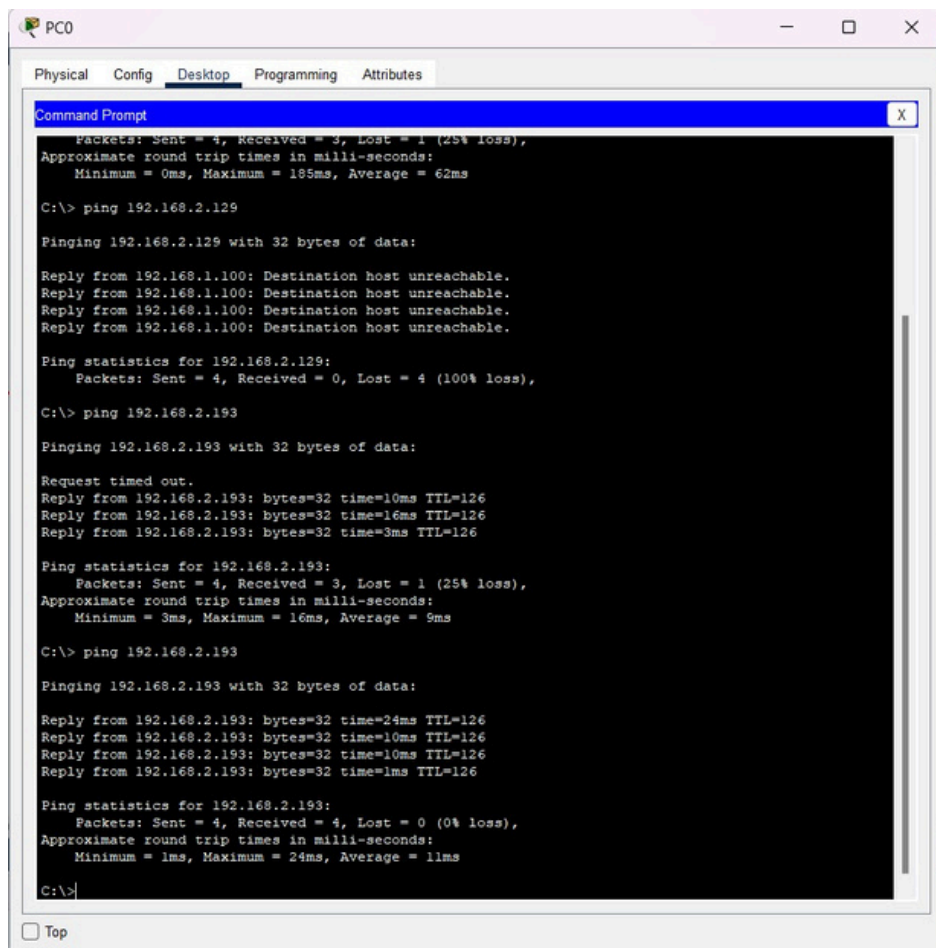
192.168.1.0/24 via 192.168.2.225
192.168.2.0/25 via 192.168.2.225

Remove

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.2.225
Router(config)#ip route 192.168.2.0 255.255.255.128 192.168.2.225
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

☐ Top



The screenshot shows a window titled 'PC0' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The Command Prompt shows the output of several ping commands. The first command is 'ping 192.168.2.129', which results in 'Destination host unreachable' for all four attempts. The second command is 'ping 192.168.2.193', which results in a 'Request timed out' for the first attempt and successful replies for the next three. The third command is another 'ping 192.168.2.193', which results in successful replies for all four attempts. The Command Prompt window has a 'Top' button at the bottom left.

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
  Minimum = 0ms, Maximum = 185ms, Average = 62ms

C:\> ping 192.168.2.129

Pinging 192.168.2.129 with 32 bytes of data:

Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.
Reply from 192.168.1.100: Destination host unreachable.

Ping statistics for 192.168.2.129:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\> ping 192.168.2.193

Pinging 192.168.2.193 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.193: bytes=32 time=10ms TTL=126
Reply from 192.168.2.193: bytes=32 time=16ms TTL=126
Reply from 192.168.2.193: bytes=32 time=3ms TTL=126

Ping statistics for 192.168.2.193:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 16ms, Average = 9ms

C:\> ping 192.168.2.193

Pinging 192.168.2.193 with 32 bytes of data:

Reply from 192.168.2.193: bytes=32 time=24ms TTL=126
Reply from 192.168.2.193: bytes=32 time=10ms TTL=126
Reply from 192.168.2.193: bytes=32 time=10ms TTL=126
Reply from 192.168.2.193: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.193:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 24ms, Average = 11ms

C:\>
```

### **RESULT: -**

Implementation of SUBNETTING in CISCPACKET TRACER simulator have been done successfully