

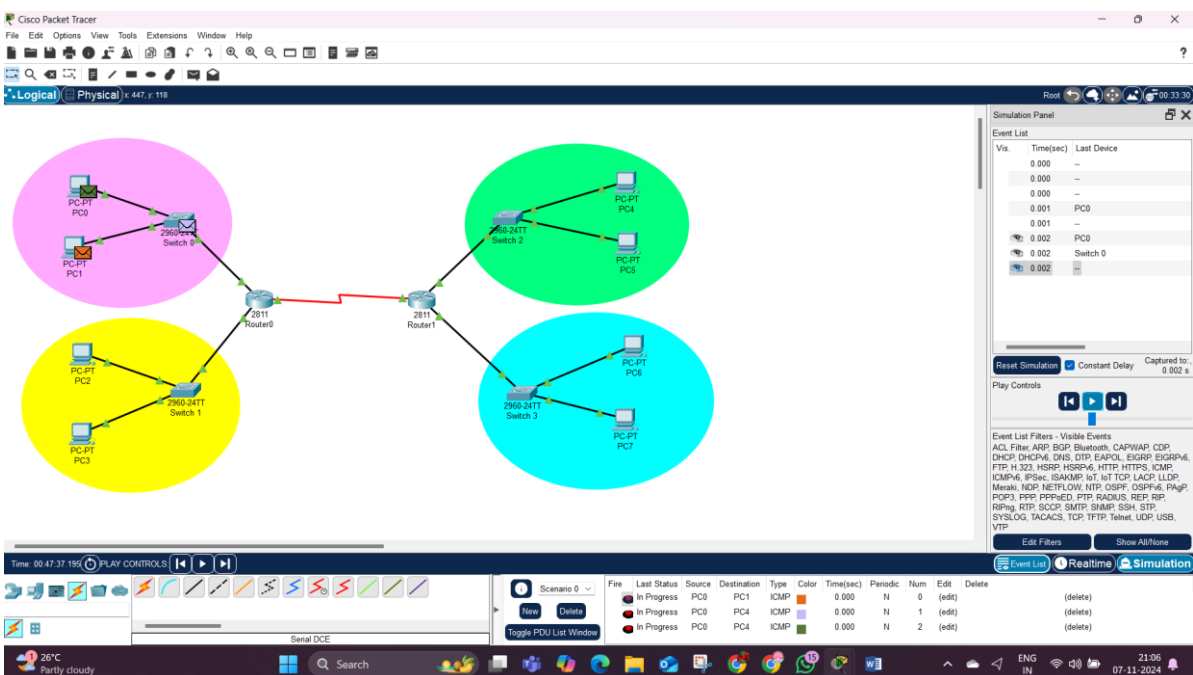
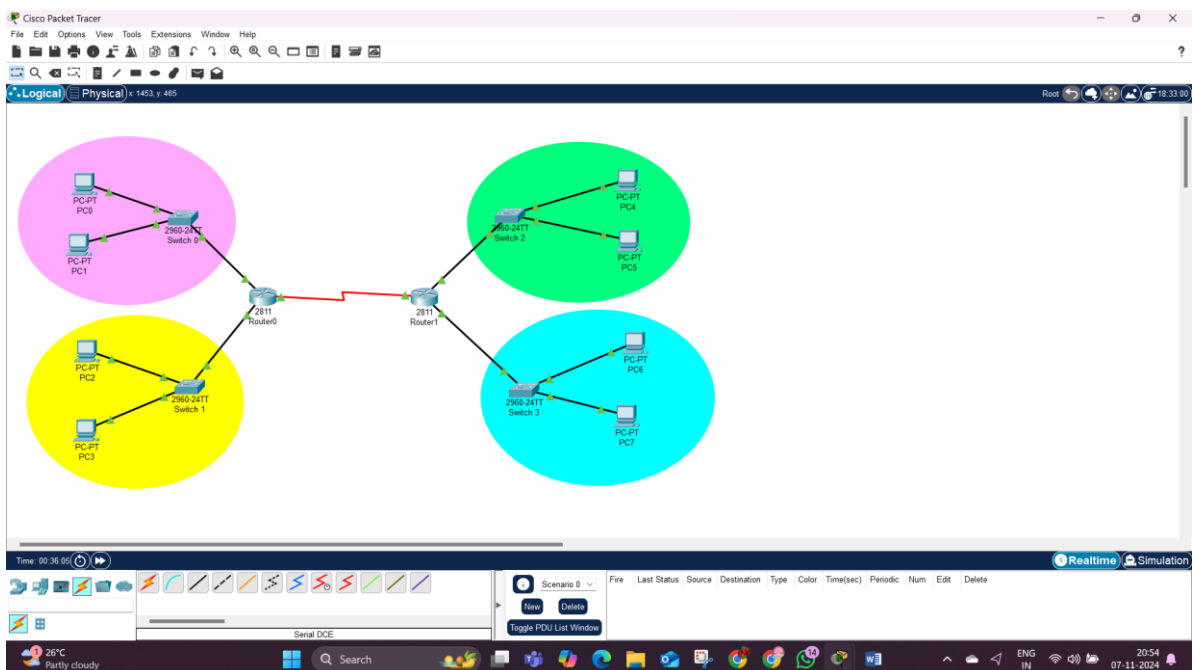
## EXPERIMENT – 9

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

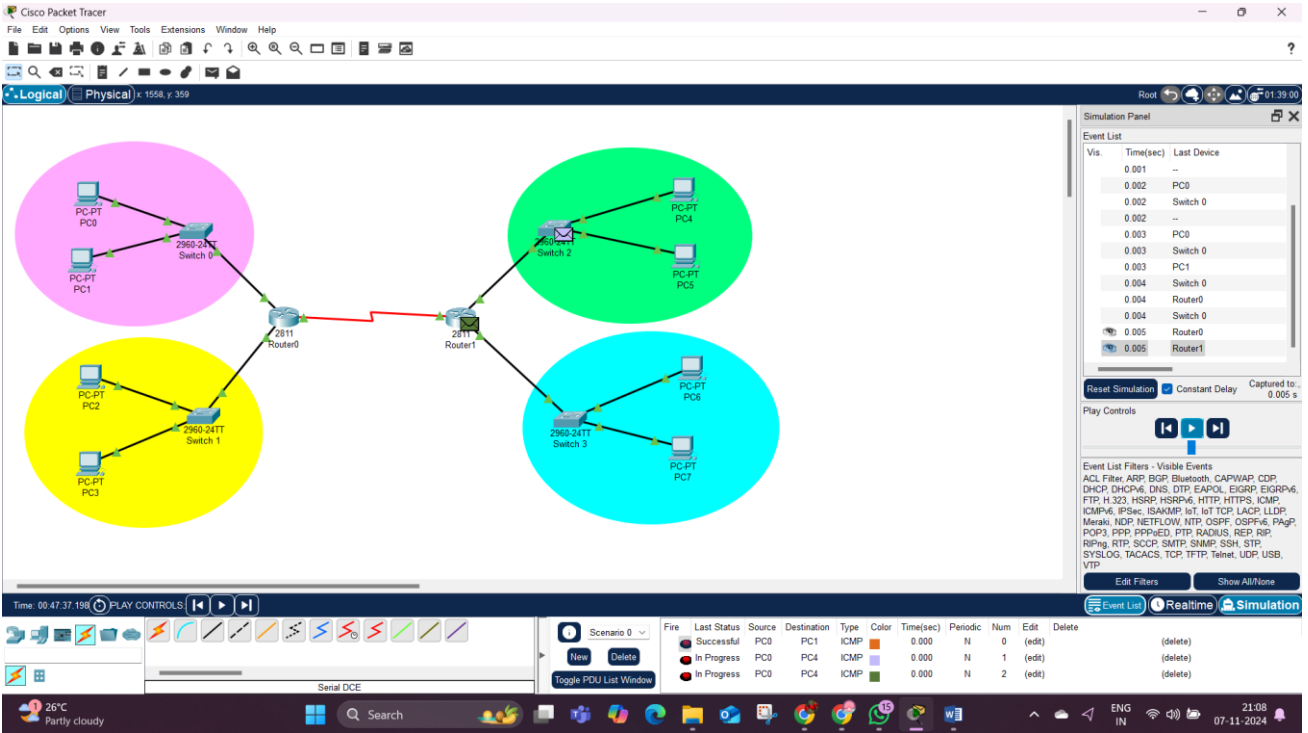
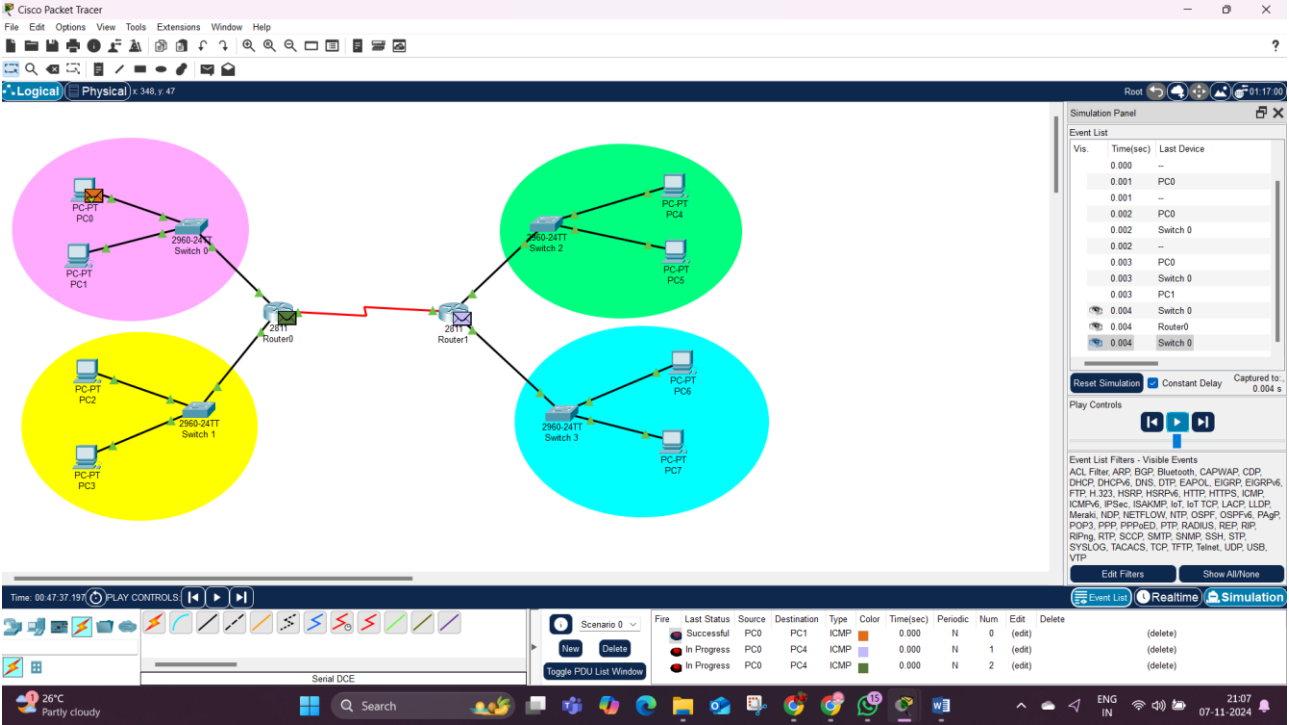
### **What is subnetting?**

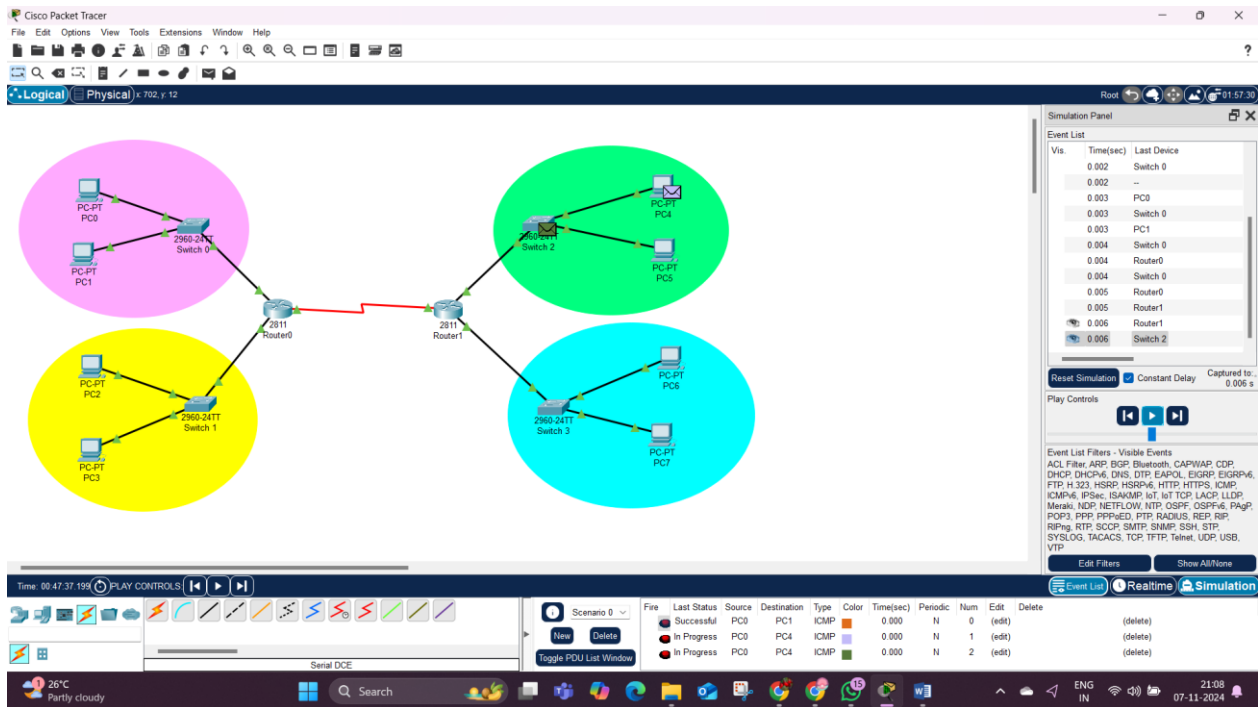
Classless IP subnetting is a technique that allows for more efficient use of IP addresses by allowing for subnet masks that are not just the default masks for each IP class. This means that we can divide our IP address space into smaller subnets, which can be useful when we have a limited number of IP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

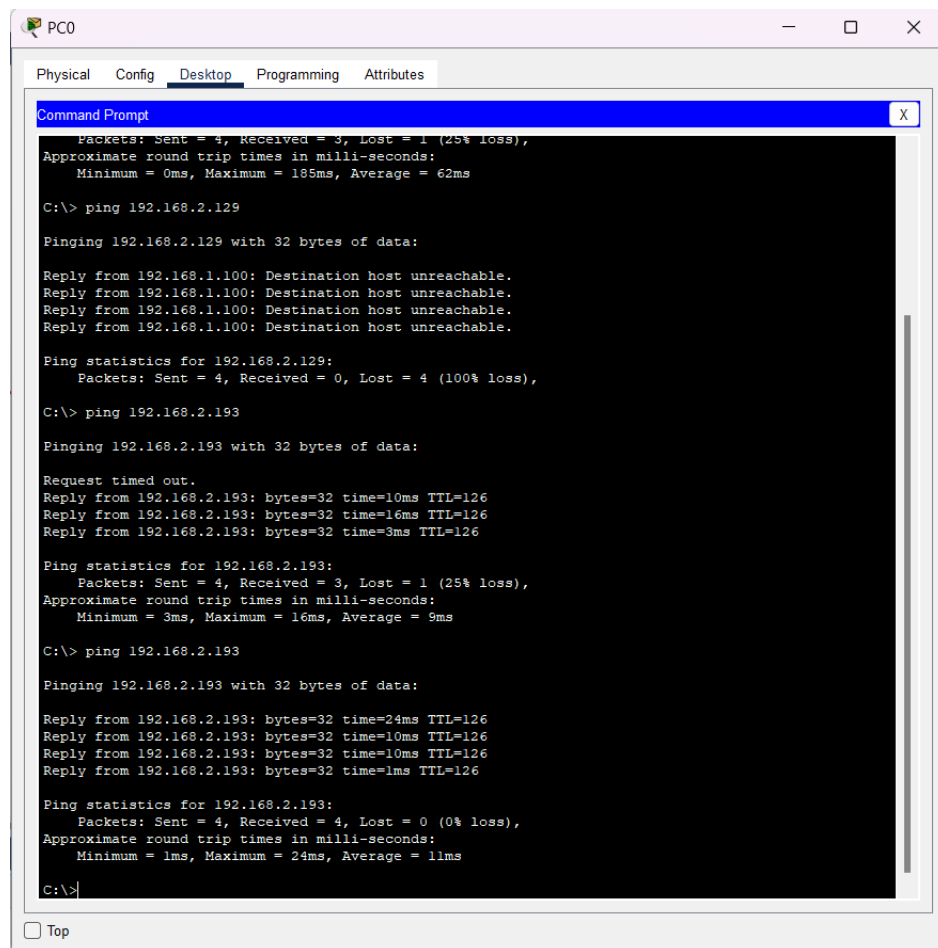
Router(config)#

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 a series of ping commands. The first ping is to 192.168.2.129, which fails with 100% loss. The second ping is to 192.168.2.193, which shows a 25% loss. The third ping is also to 192.168.2.193, showing 0% loss. The Command Prompt window has a "Top" button at the bottom left.

```
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 CISCO PACKET TRACER simulator have been done successfully