INDEX

NAME: A. Kavin STD: III nd year SEC.: CSE-B ROLL NO.: 220701122

S.No.	Date	Title	Page No.	Teacher's Sign/ Remarks
1.	16/7/24	Study of various network commands used in Linux & windows		
2.	23/7/24	Study of network cables		
3.	30/7/24	Experiments of CISCO PACKET TRACER (simulation tools		
4.	6/8/24	Setup and configure a LAN using a switch and Ethernet cable.		
5.	9/8/24	Experiments on packet capture tool; wireshark		
6.	16/8/24	Error correction at data link layer (Hamming code)		
7.	23/8/24	Flow control at data link layer (Sliding window protocol.		
8.	10/9/24	Stimulate virtual LAN		
		CISCO Packet Tracer		
9.	30/9/24	Implementation of subnetting in CISCO Packet tracer		
10.	4/10/24	Internetworking using router DHCP server and internet cloud		
11.	8/10/24	Stimulate static routing Protocol configuration using CISO Packet & RIP		
12.	15/10/24	Echo client TCP/UDP sockets chart client server TCP/UDP		
13	22/10/24	write own Ping problem		
14.	25/10/24	Raw sochets to implement Packet Sniffing		
15.	29/10/24	Wellilizer tool		

Completed

Palaniappa

Exp. no :

Date : 30/9/24

Practical - 9

Aim

Implementation of subnetting in CISCO PACKET TRACER simulator

classless IP subnetting is a technique that allows for more efficient use of IP address by allowing for subnet masks that are just the default mask 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 address but need to create multiple networks.

Creating a network topology :-

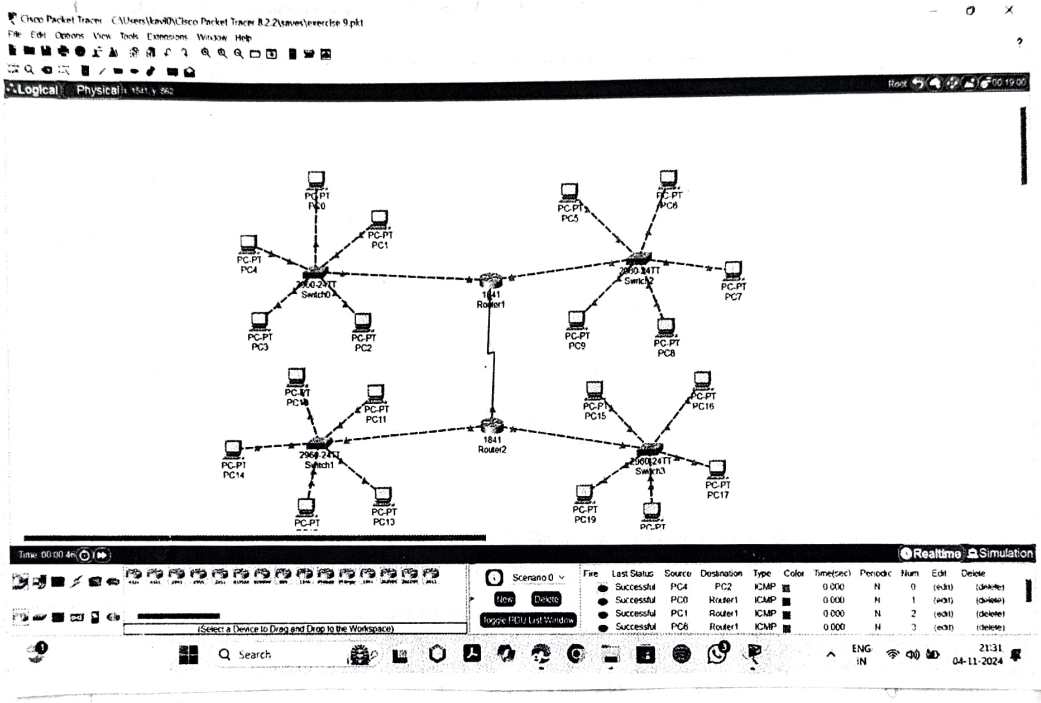
The first step in implementing classless IP subnetting is to create a network topology in packet tracer. To create a network topology in packet tracer, select the "New" button in the top left corner, then select "Network" and "generic". This will create a blank network topology that we can use to add devices.

Adding the devices

Once we have created our network topology, we can add devices to it. Here we will be adding routers, switches and PCs. To add a device, select the device from the bottom left corner and drag

Subnetting

To subnet the network address of 192.168.1.0/24 to provide enough space for at least 5 addresses for end devices, the switch the router, we can use a /27 subnet mask. This will give us 8 subnets with 30 host addresses each



The IP addressing for the network shown

* Router R1
* Gigabit Ethernet 0/0: 192.168.1.1
* Gigabit Ethernet 0/1: 192.168.2.1
* Switch S1
  * FastEthernet 0/1: 192.168.1.0/27
    PC1: 192.168.1.11
    PC2: 192.168.1.12
    PC4: 192.168.1.13
    PC3: 192.168.1.14
    PC5: 192.168.1.15
  * FastEthernet 0/1: 192.168.2.0/27
    PC1: 192.168.2.11
    PC2: 192.168.2.12
    PC3: 192.168.2.13
    PC4: 192.168.2.14
    PC5: 192.168.2.15

Configuring the devices

Now that we have added our devices and connected them, we can start configuring them. we will start by configuring the router

Right click on the router and select CLI

#enable
#configure terminal
interface FastEthernet 0/0
ip address {IP address} {subnet mask}
#no shutdown
#exit

interface FastEthernet 0/1
ip address {IP address} {subnet mask}
no shutdown
exit.

To configure the GigabitEthernet interface on the router, you can follow steps

1. Right click on the router and select CLI
2. Enter the following commands.

i)enable ii) configuring terminal iii) interface Gigabi
ip address {IP address} {subnet mask} 0/0

Testing the network

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
●	Successful	PC4	PC2	ICMP	■	0.000	N	0	(edit)	(delete)
●	Successful	PC0	Router1	ICMP	■	0.000	N	1	(edit)	(delete)
●	Successful	PC1	Router1	ICMP	■	0.000	N	2	(edit)	(delete)
●	Successful	PC6	Router1	ICMP	■	0.000	N	3	(edit)	(delete)

Result:

Thus implementation of subnetting in CISCO packet tracer is executed.