Exp No: 9 Implementation of Subnetting in CISCO Packet Tracer simulator

Aim :-

To implement 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 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

Steps for implementing :-

(i) Creating a network topology

(ii) Adding the devices

(iii) Subnetting

The IP addressing for the network shown in the topology can be as follows:-

- Router R1
- Gigabit ethernet 0/0 192.168.1.1
- Gigabit ethernet 0/1 192.168.2.1

- Switch S1:
- Fast ethernet 0/1: 192.168.1.0/27
- PC1: 192.168.1.11
- PC2: 192.168.1.12
- Fast ethernet 0/2: 192.168.2.0/27
- PC1: 192.168.2.11
- PC2: 192.168.2.12

- Router R2.
- Fast ethernet 0/0: 192.168.3.1
- Fast ethernet 0/1: 192.168.41

Configuring the devices:-
Now that will have added our devices and connected them, we can start configuring them we will start by configuring the routers.

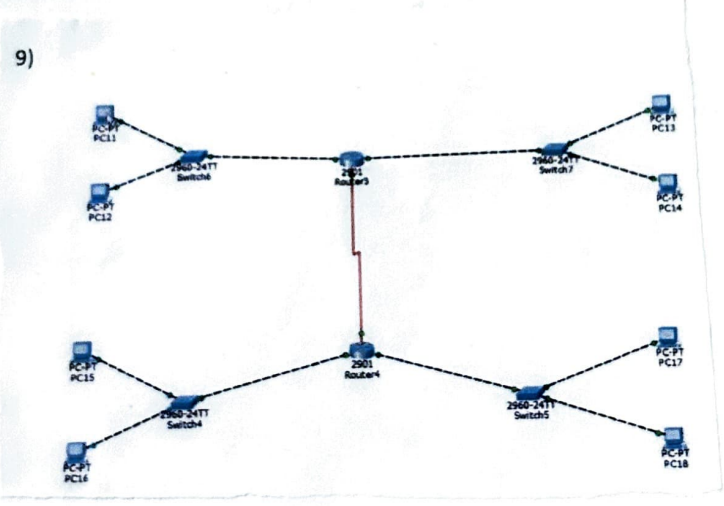
enable
Configure terminal
interface fastethernet 0/0
IP address {ip address} {subnet mask}
no shutdown
exit

Testing the network:- Now that our network topology is configured, we can test the network.

open
Try
Succ
We
and

Open a Command Prompt on each Pc and try to ping to other Pc. If the ping is successful, then the network is functioning properly. We can also use the "Ping" router and to Pc's

9)



Student Observation :-

a) Write down what is Subnetting?

It is the process of dividing a large network into smaller networks to improve management and efficient use of IP address.

b) Advantage of Subnetting

It reduces network congestion, improves security and allows efficient use of IP address.

c) Subnetting in College Explain

College use Subnetting to separate labs, admin and WIFI networks.

(Eg) 192.168.1.0.0/24 for lab

192.168.8.0/24 for admin

Result :- Hence the implementation of Subnetting has been executed Successfully.