EX NO: 9
15/9/25

SUBNETTING

AIM: Implementation of Connectionless Subnetting in CISCO PACKET TRACER Simulator.

Classless IP Subnetting is a technique that allows for more efficient use of IP addresses by allowing for subnet masks that are not just default masks for each IP class. This means that we can divide an IP address space into smaller subnets which can be useful when we have a limited no. of addresses but need to create multiple networks.

Creating a Network Topology

The First Step is to create a network topology in Packet Tracer. For that, select the "New" button in the top left corner, then select "Network" and "Generic". This will create a blank network topology that we use to add devices.

Adding the Devices

Here, we add routers, switches and PCs. Select the device & add it onto the network topology. Then, connect the devices by dragging a cable from one device's port to another device's port.

Subnetting

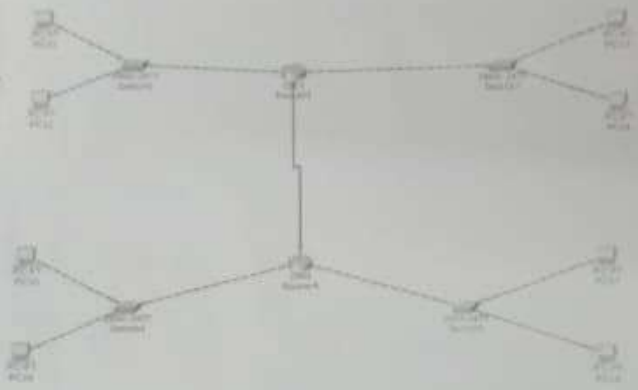
To subnet the network address of 192.168.1.0/24 to provide enough space for atleast 5 addresses for end devices, the switch & the router, we can use a /27 subnet mask. This will give us 8 subnets with 30 host addresses each.

Configuring the Devices

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

Testing the Network

Now, we can test the network. open a command prompt on each pc and try to ping the other pc. If the ping is successful, the the network is functioning properly.



Student observation

(1) Write down your understanding of Subnetting?

Subnetting is dividing a larger network into smaller sub networks for efficient IP Usage and Management.

(2) What is the advantage of implementing Subnetting with Network

It improves IP allocation, reduces broadcast traffic, enhances Security, & makes networks easier to manage.

Result

Subnetting was successfully implemented in CoCo Trace. network devices Communicated properly using the assigned Subnetted IP Addresses.