

## PRACTICAL - 9

AIM:-

Implementation of SUBNETTING in CISCO PACKET TRACER simulator

Classless IP subnetting in cisco packet 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.

CREATING A NETWORK TOPOLOGY:-

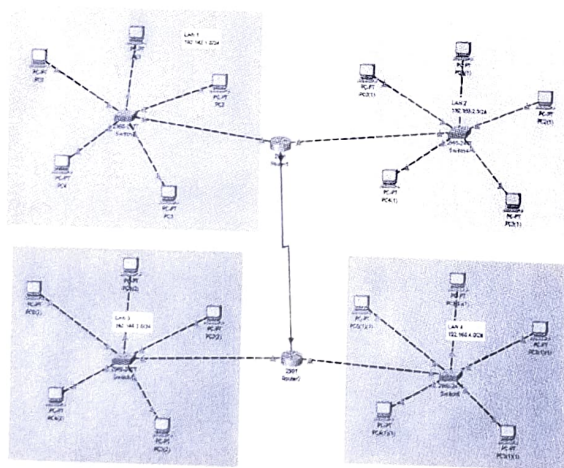
The first step in implementing classless IP subnetting is to create a network topology in Packet tracer.

ADDING THE DEVICE:-

Once we have created our network topology we can add devices to it. Here, we will be adding routers, switches & PCs.

## SUBNETTING:-

To subnet the network addresses 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  $127$  subnet mask. This will give us 8 subnets with 30 host addresses each.



## STUDENT OBSERVATION:-

(a) Write down your understanding of subnetting.  
It is the process of dividing a large network into smaller, more manageable parts called subnets. It helps in organizing the network by allocating IP addresses efficiently.

(b) What is the advantage of implementing subnetting within a network?

- Efficient use of IP addresses.
- Improved network performance.
- Better security.
- Simple management.
- Easier troubleshooting.

(c) Find out whether subnetting is implemented in your college. If yes, draw a list down the subnets used with IP addresses.

subnet 1 : Computer Science Dept

Network : 192.168.10.0/24

Range : 192.168.10.1 - 192.168.10.254

Default Gateway : 192.168.10.1

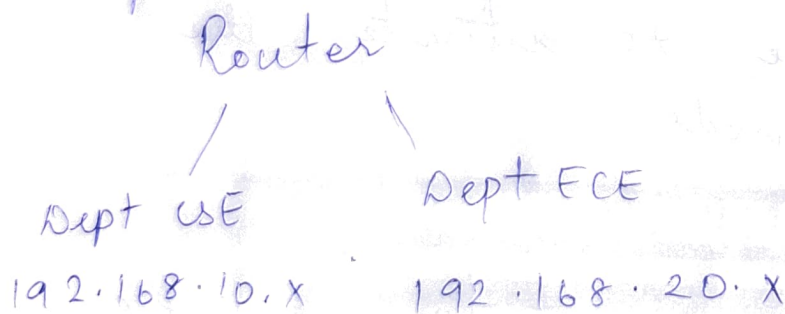
subnet 2 : Electronics Dept

Network : 192.168.20.0/24

Range : 192.168.20.1 - 192.168.20.254

Default Gateway : 192.168.20.1

Diagram :-



RESULT:-

Thus the above experiment is executed successfully.

*Done*