Experiment-9

AIM:-Implementation of 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 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.

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, witches, and PCs. To add a device, select the device from the bottom left corner and drag 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 at least 5 addresses for end devices, the switch, and the router, we can use a /27 subnet mask. This will give us 8 subnets with 30 host addresses each.

TESTING THE NETWORK:

Now that our network topology is configured, we can test the network. Open a commandprompt on each PC and try to ping the other PC. If the ping is successful, then the network isfunctioning properly. We can also use the"ping" command to test connectivity between the router and the PCs.
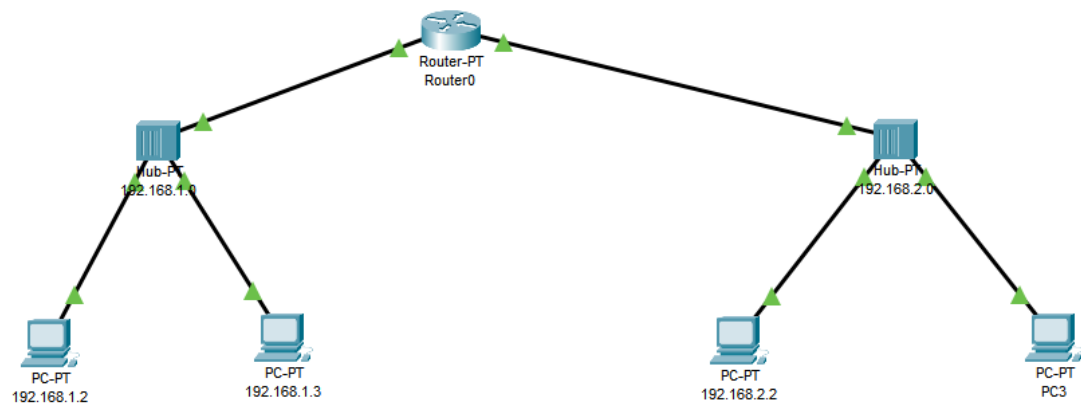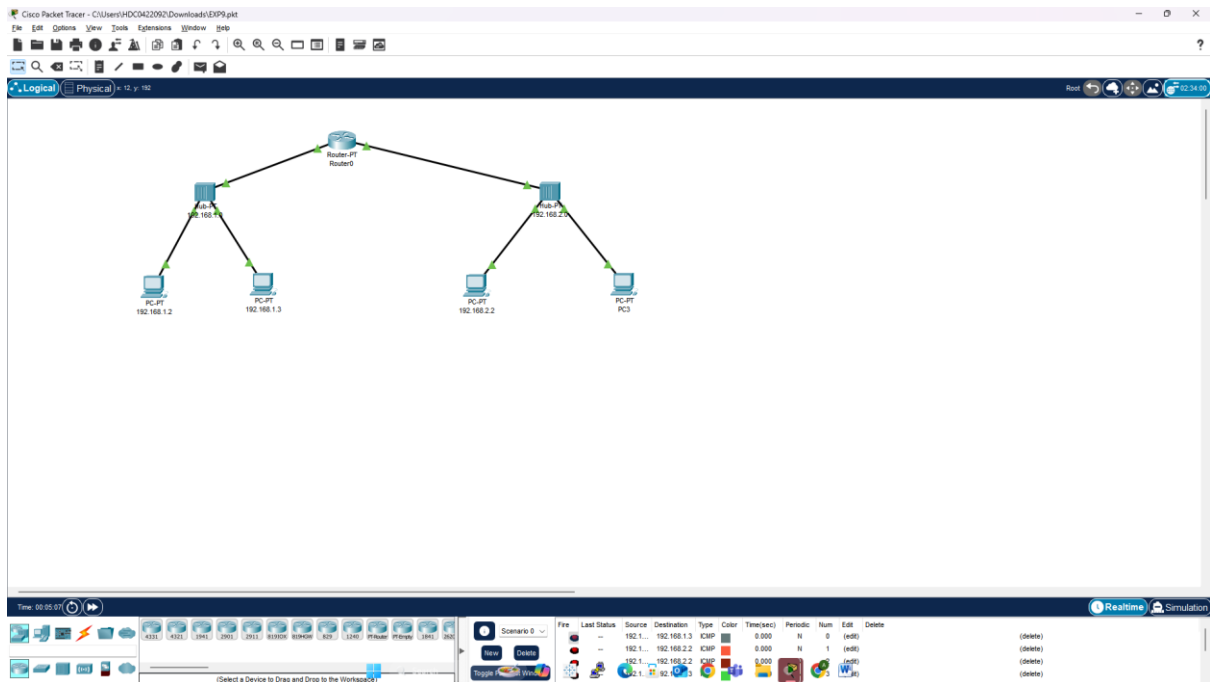
Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	0.003	--
	0.003	192.168.1.2
	0.004	Router0
	0.004	192.168.1.0
	0.004	192.168.1.0
	0.004	192.168.1.0
	0.005	192.168.2.0
	0.005	192.168.2.0
	0.006	--
	0.006	192.168.2.2
	0.006	--
	0.007	192.168.1.2
	0.007	192.168.1.3
	0.007	--
	0.007	192.168.2.0
	0.007	192.168.2.0
	0.007	192.168.1.2
Visible	0.008	192.168.1.0
Visible	0.008	192.168.1.0
Visible	0.008	192.168.1.0
Visible	0.008	Router0

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	192.168.1.2	192.168.2.2	ICMP		0.000	N	5	(edit)	

RESULT:

The Implementation of SUBNETTING in CISCO PACKET TRACER is been successfully executed.