NPS LAB EXPERIMENT-7

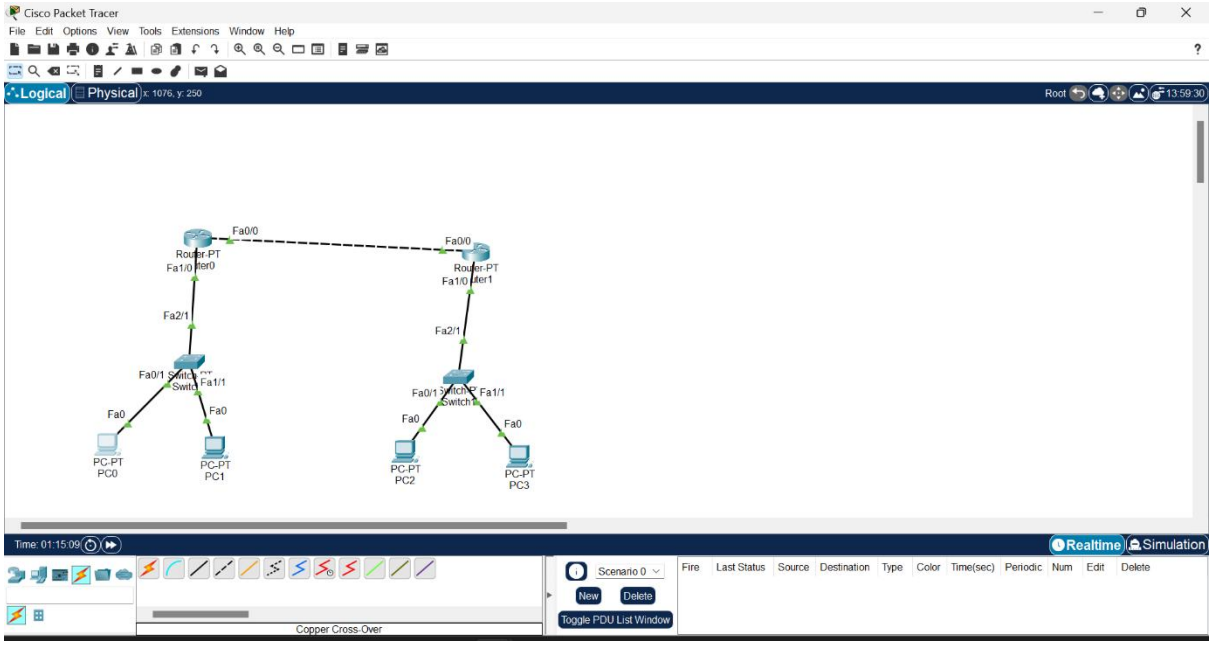
Configuration of ARP and Static Routing using Cisco network switch and verify the connectivity.

Step 1: First, open the cisco packet tracer desktop and select the devices given below:

S.NO	Device	Model Name	Qty.
1.	PC	PC	4
2.	Switch	PT-Switch	2
3.	Router	PT-Router	2

S.NO	Device	IPv4 Address	Subnet Mask	Default Gateway
1.	pc0	192.168.1.2	255.255.255.0	192.168.1.1
2.	pc1	192.168.1.3	255.255.255.0	192.168.1.1
3.	pc2	192.168.2.2	255.255.255.0	192.168.2.1
4.	pc3	192.168.2.3	255.255.255.0	192.168.2.1

- Then, create a network topology as shown below the image.
- Use an Automatic connecting cable to connect the devices with others.



Step 2: Configure the PCs (hosts) with IPv4 address and Subnet Mask according to the IP addressing table given above.

- To assign an IP address in PC0, click on PC0.
- Then, go to desktop and then IP configuration and there you will IPv4 configuration.
- Fill IPv4 address and subnet mask.

Step 3: Assigning IP address using the ipconfig command.

- We can also assign an IP address with the help of a command.
- Go to the command terminal of the PC.

- Then, type ipconfig <IPv4 address><subnet mask><default gateway>(if needed)
- Repeat the same procedure with other PCs to configure them thoroughly.

Step 4: Configure router with IP address and subnet mask.

S.NO	Device	Interface	IPv4 Addressing	Subnet Mask
1.	router0	FastEthernet 0/1	192.168.1.1	255.255.255.0
		FastEthernet 0/0	10.0.0.1	255.0.0.0
2.	router1	FastEthernet 0/1	192.168.2.1	255.255.255.0
		FastEthernet 0/0	10.0.0.2	255.0.0.0

- To assign an IP address in router0, click on router0.
- Then, go to config and then Interfaces.
- Then, configure the IP address in FastEthernet ports according to IP addressing Table.

- Fill IPv4 address and subnet mask.
- **Repeat the same procedure with Router 1 to configure them thoroughly.**

  Step 5: After configuring all of the devices we need to assign the routes to the routers.

  To assign static routes to the particular router:

- First, click on router0 then Go to CLI.
- Then type the commands and IP information given below.

  CLI command : ip route <network id> <subnet mask><next hop>

  Static Routes for Router0 are given below:

  Router(config)#ip route 192.168.2.0 255.255.255.0 10.0.0.2

  Static Routes for Router1 are given below:

  Router(config)#ip route 192.168.1.0 255.255.255.0 10.0.0.1

  Step 6: Verifying the network by pinging the IP address of any PC. We will use the ping command to do so.

- First, click on PC1 then Go to the command prompt
- Then type ping <IP address of targeted node>
- As we can see in the below image we are getting replies which means the connection is working very fine and save the file.

- It is pinging from PC2 to Router0.