Data Communication and Computer Network
Lab6: Setup Network Topology using two routers

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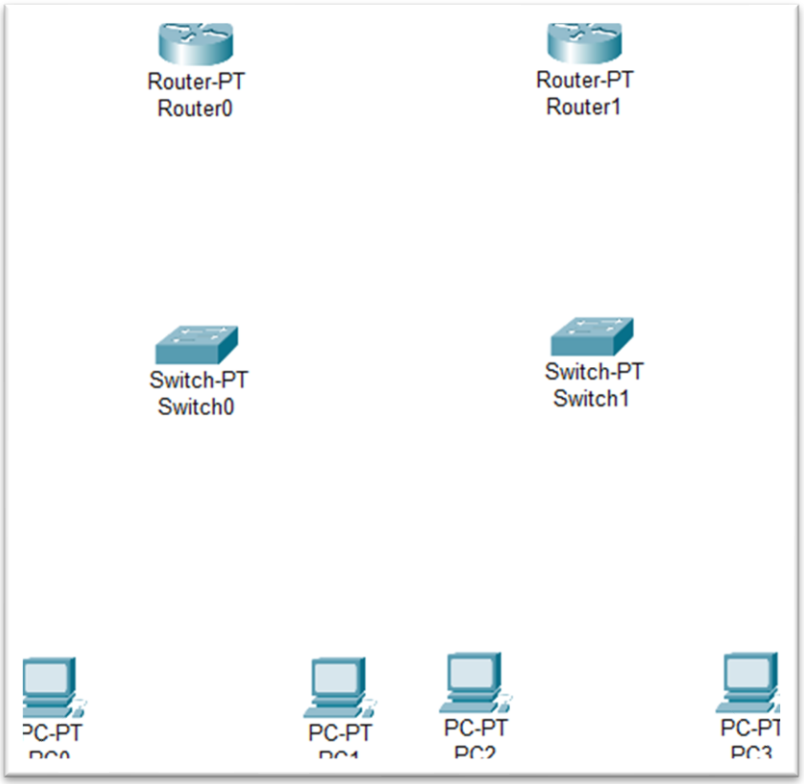
Aim: Configure a Network topology using two routers on packet tracer software.

Apparatus (Software): Packet tracer Software

Procedure:

Step 1: First, open the Cisco packet tracer desktop and select thedevices mentioned below:

S.NO	Device	Model Name	Qty.
1.	pc	pc	4
2.	switch	PT-Switch	2
3.	router	PT-Router	2



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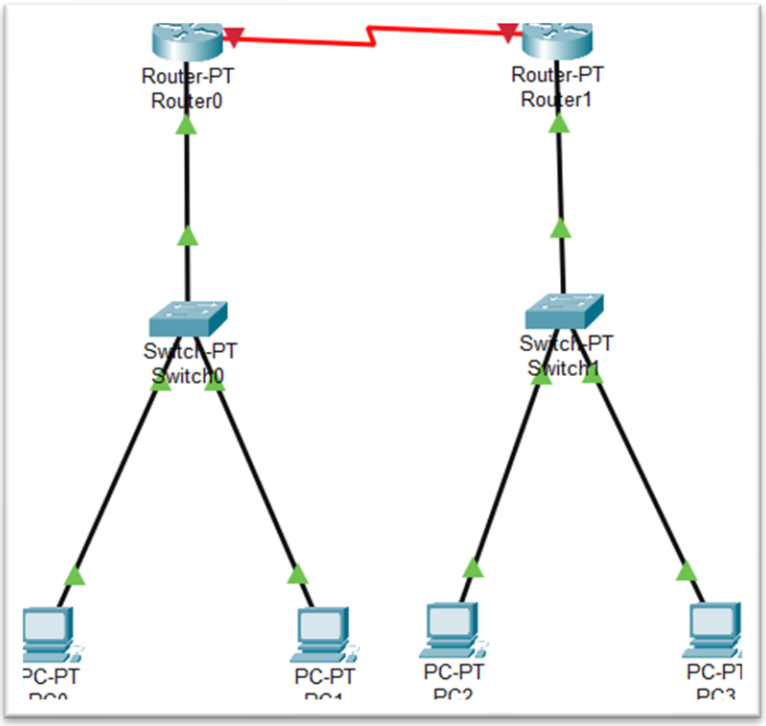
Step 2: Then, create a network topology as shown below the imageby using an cable to connect the devices with others.

- Connect Router0 to Switch 1 using Copper straight throughwire (FA 0/0 =>FA 1/1)
- Similarly Connect Switch to PC0 and PC1 using Copperstraight through wire
- Follow the same procedure for connecting Router 1 to Switch 1and PC2 and PC3.



Step 3: Configure the PCs (hosts) with IPv4 address and SubnetMask 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 youwill IPv4 configuration.
- Fill IPv4 address, subnet mask and Default gateway.

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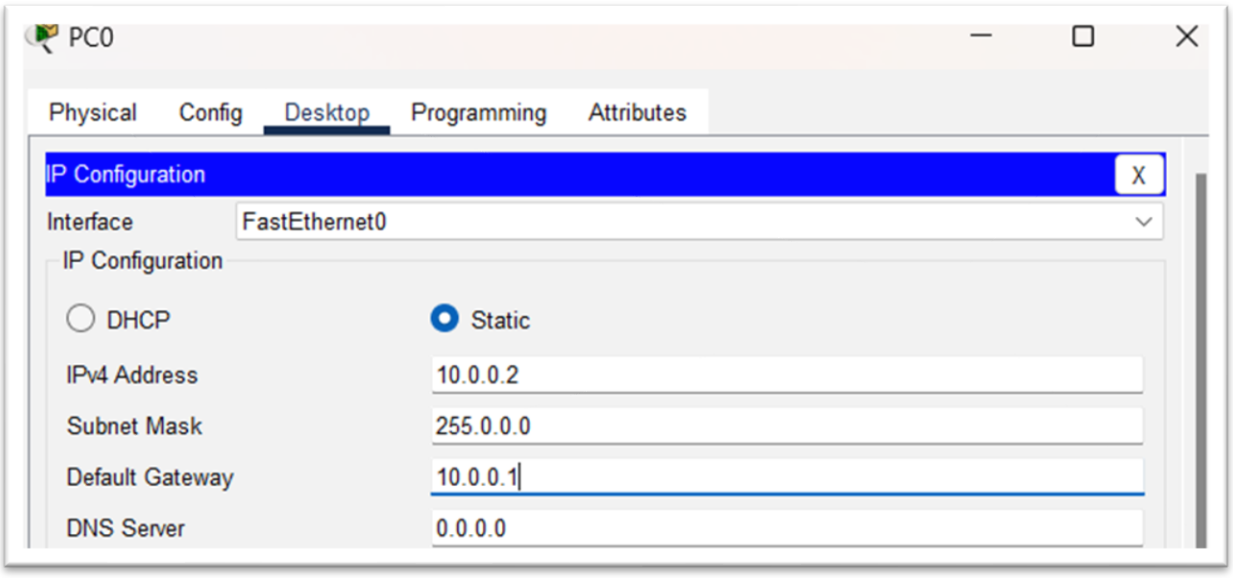

Repeat the same procedure with other PCs to configure themthoroughly.

S.NO	Device	IPv4 Address	Subnet-Mask	Default-Gateway
1.	PC0	10.0.0.2	255.0.0.0	10.0.0.1
2.	PC1	10.0.0.3	255.0.0.0	10.0.0.1
3.	PC2	30.0.0.2	255.0.0.0	30.0.0.1
4.	PC3	30.0.0.3	255.0.0.0	30.0.0.1

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

- To assign an IP address in router0, click on router0.
- Then, go to config and then Interfaces.
- Make sure to turn on the ports
- Then, configure the IP address in FastEthernet and serial ports according to IP addressing Table.
- Fill IPv4 address and subnet mask.

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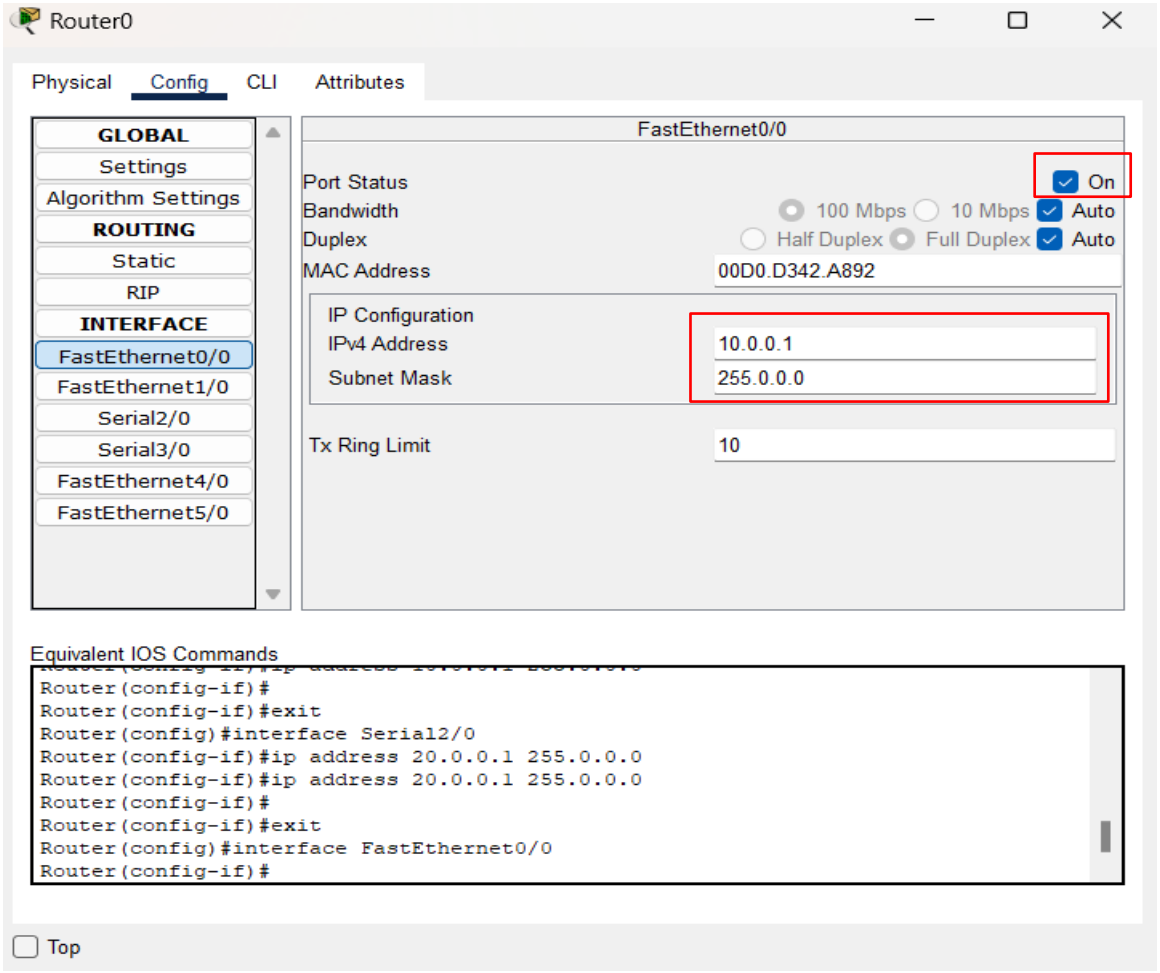

Repeat the same procedure with Router 1 to configure it thoroughly.

IP Addressing Table Router

S.NO	Device	Interface	IPv4 Address	Subnet Mask
1.	router0	FastEthernet0/0	10.0.0.1	255.0.0.0
		Serial 2/0	20.0.0.1	255.0.0.0
2.	router1	FastEthernet0/0	30.0.0.1	255.0.0.0
		Serial 2/0	20.0.0.2	255.0.0.0

Step 4: After configuring all of the devices we need to assign theroutes to the routers.

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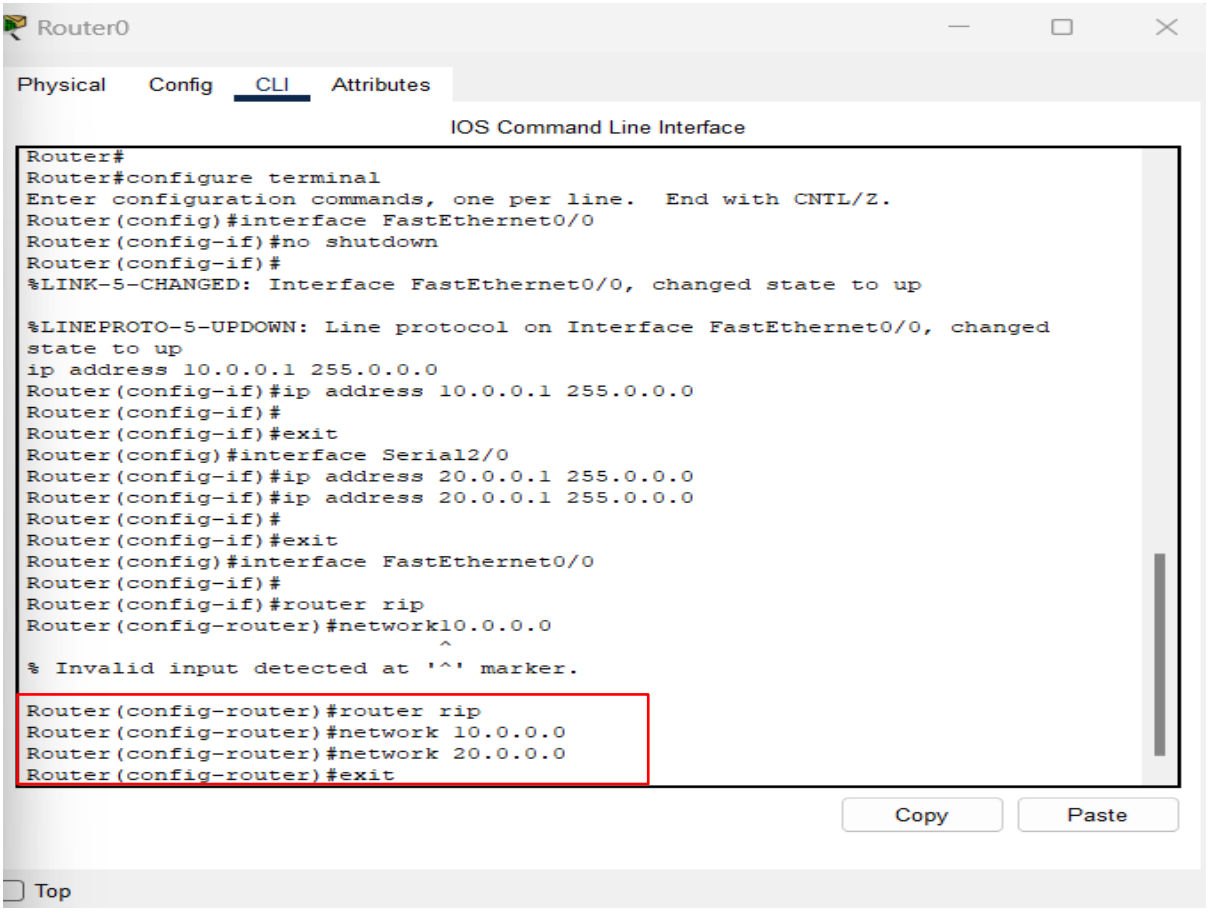
To assign RIP routes to the particular router:

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

CLI command: network <network id>

RIP Routes for Router0 are given below: *Router (config)#network10.0.0.0*

RIP Routes for Router1 are given below: *Router (config)#network10.0.0.0*



Step 5: Verifying the network by pinging the IP address of any PC.We'll use the ping command to do so.

- First, click on PC0 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 whichmeans the connection is working very fine.

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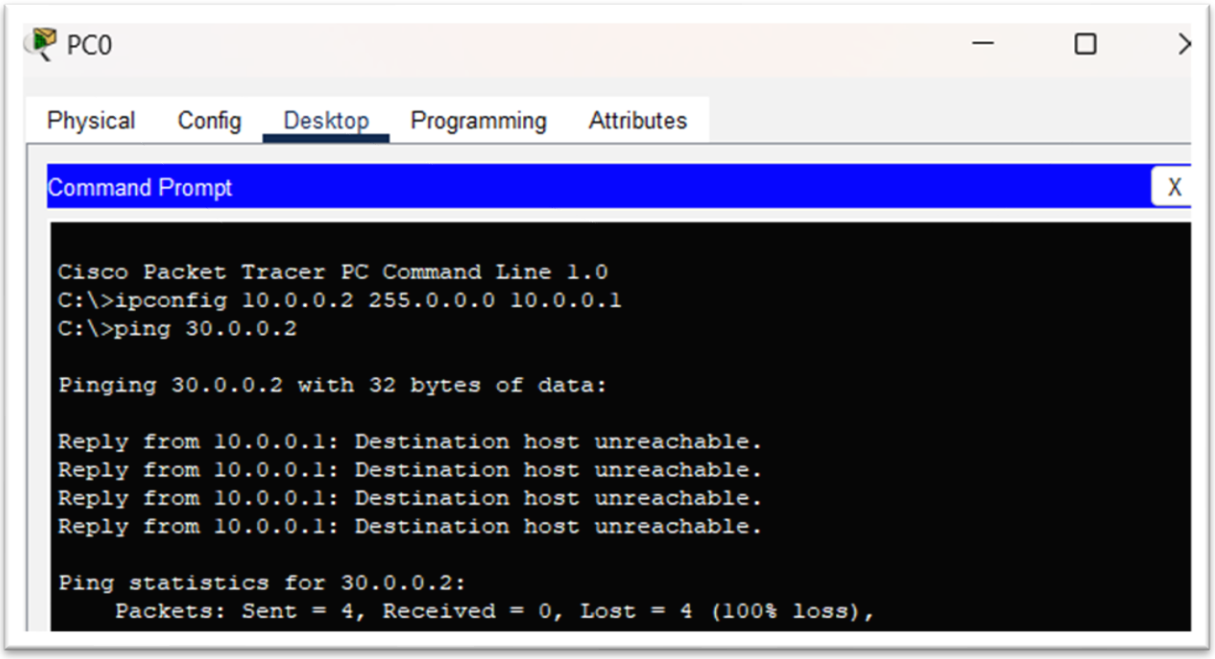

Step 6: A simulation of the experiment is given below we aresending PDU from PC0 to PC2 andPC1 to PC3:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Successful	PC2	PC0	ICMP		0.000	N	0	(edit)
	Failed	PC1	PC3	ICMP		0.000	N	1	(edit)
	Successful	PC3	PC1	ICMP		0.000	N	2	(edit)