

COMPUTER NETWORKING

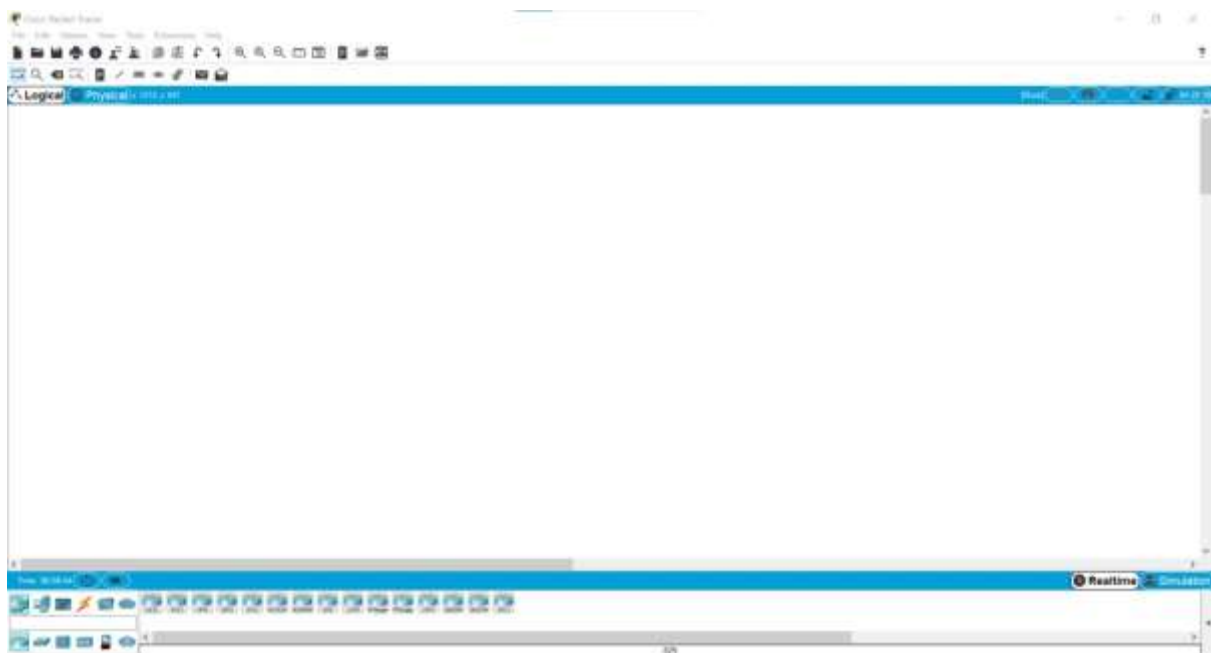
ASSIGNMENT 3

NAME::SOURABH PATEL

ADMISSION NO::U19CS082

1. Creating a network and simulating it in Cisco Packet Manager

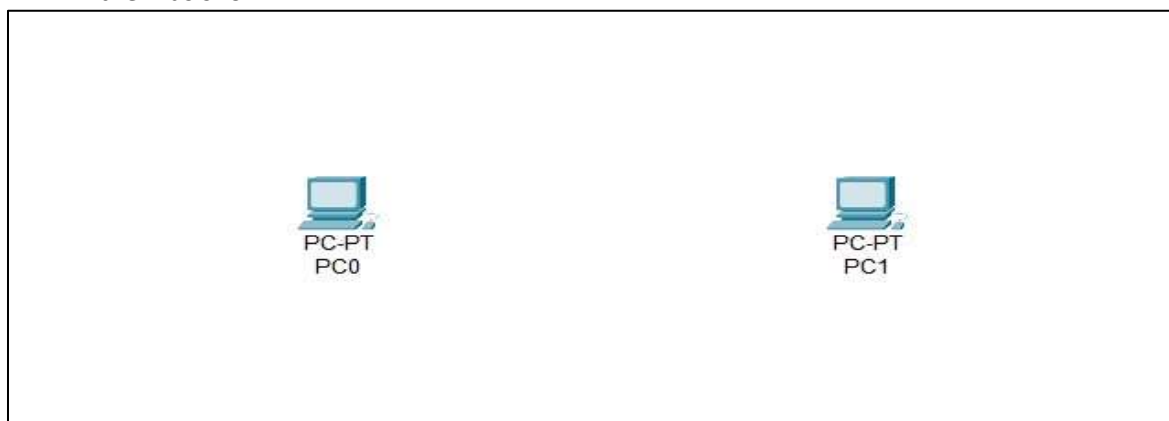
- Open the Cisco Packet Manager and its interface is as shown below:



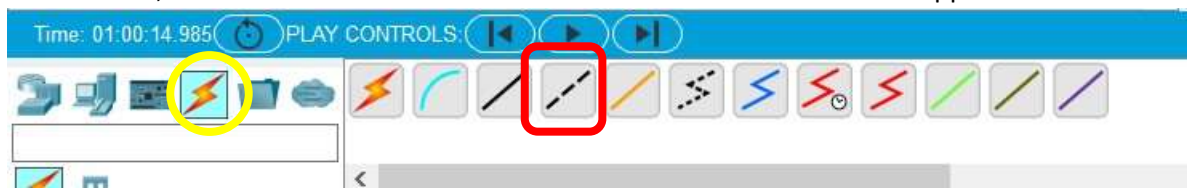
- Now, from the bottom menu select End Devices and in that select PC device.



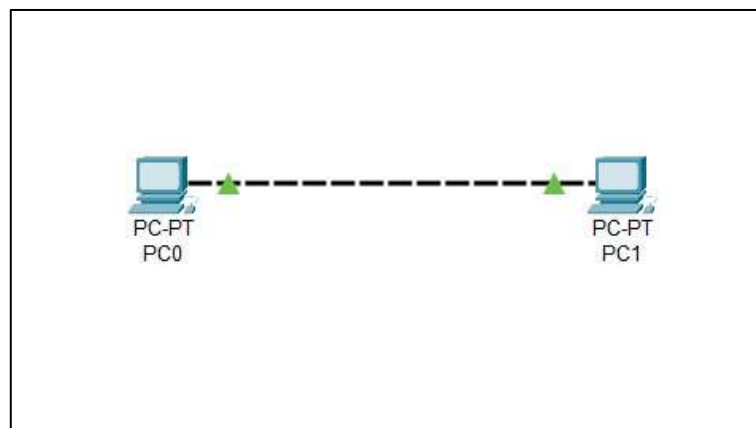
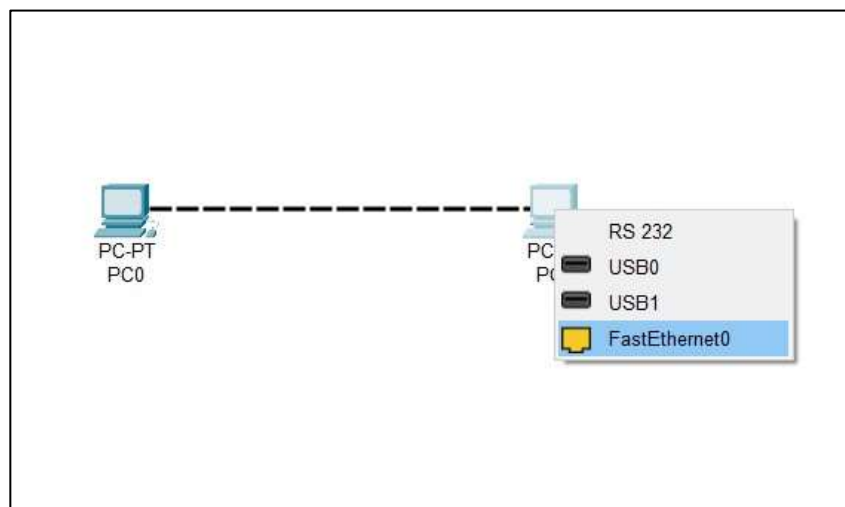
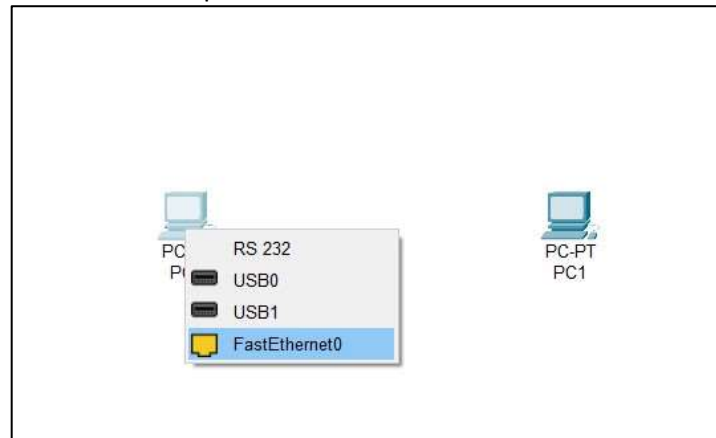
- Drag and drop two PC devices in the blank space provided for simulating network between them as shown.



- Now, from the same menu select connections and from that select Copper cross wire.

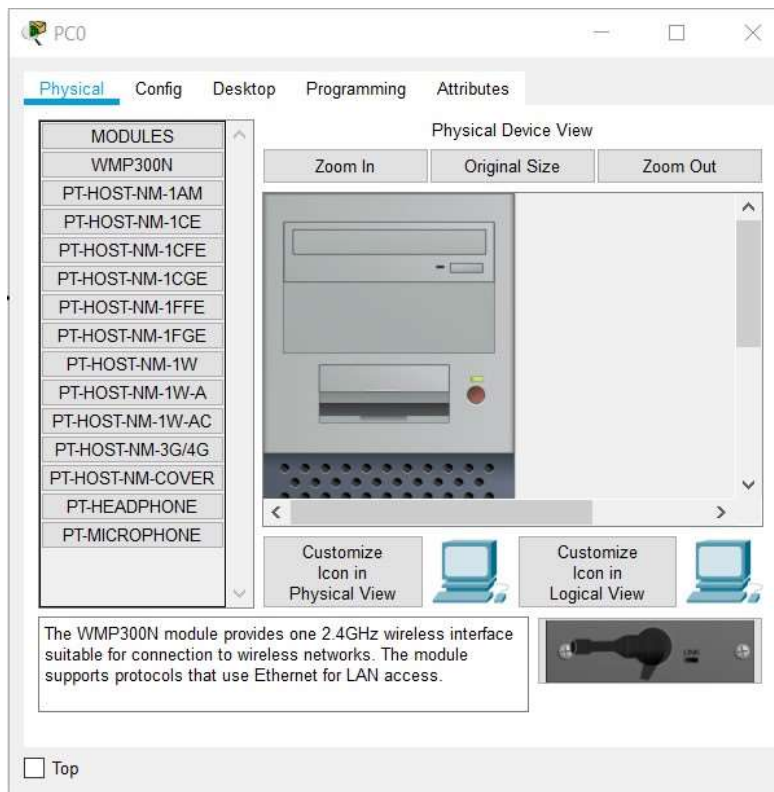


- Add it to PC0 on FastEthernet port and then connect it to PC1 as shown below.

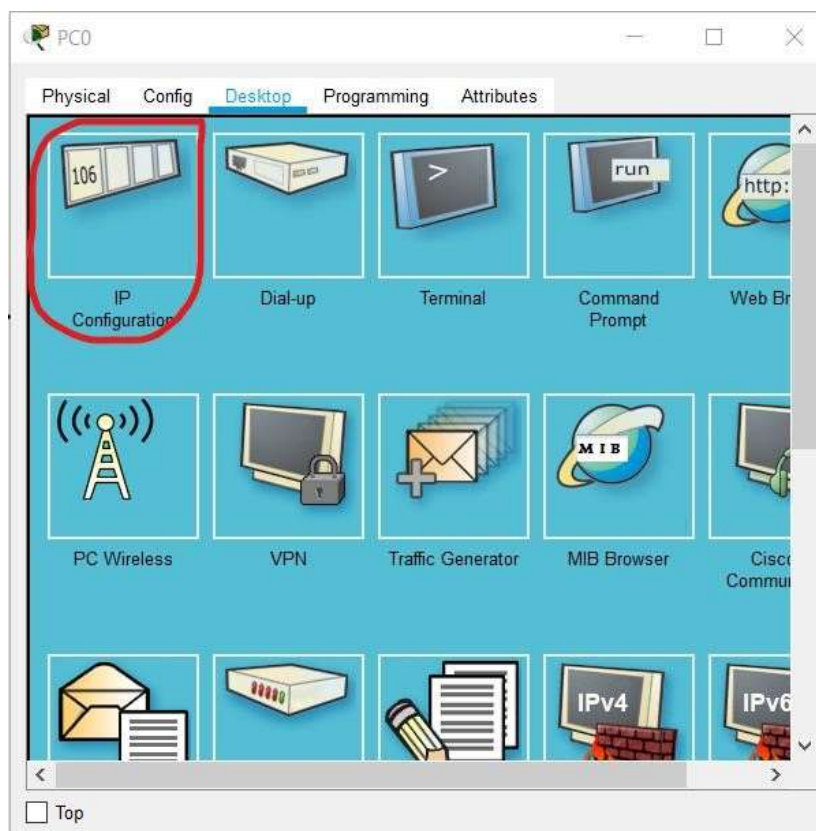


- We need to configure the IP address of the devices.

- Double Click on PC0. That will open the following dialogue box.



- Select Desktop in that and further IP configuration.



In the following dialogue box, enter IP of your choice.

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 15.11.12.1

Subnet Mask 255.0.0.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:8FFF:FEE7:5E3D

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

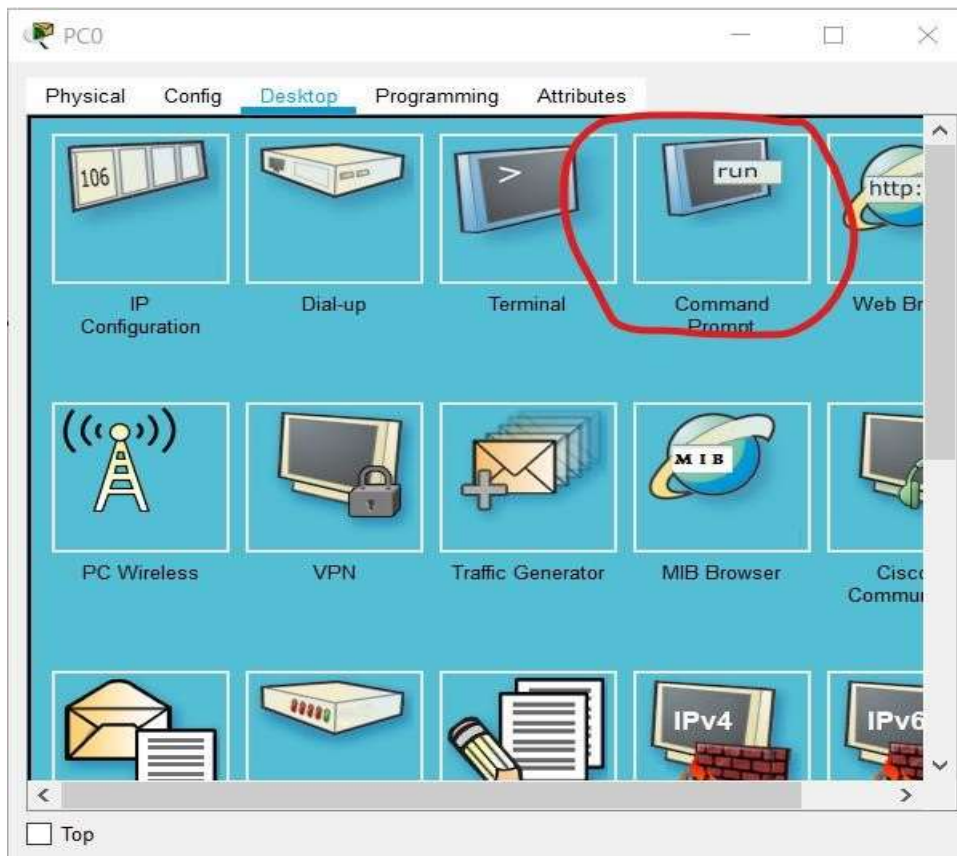
☐ Top

Port	Link	IP Address	IPv6 Address	MAC Address
FastEthernet0	Up	15.11.12.1/8	<not set>	00E0.8FE7.5E3D
Bluetooth	Down	<not set>	<not set>	0060.3E4A.C2E3

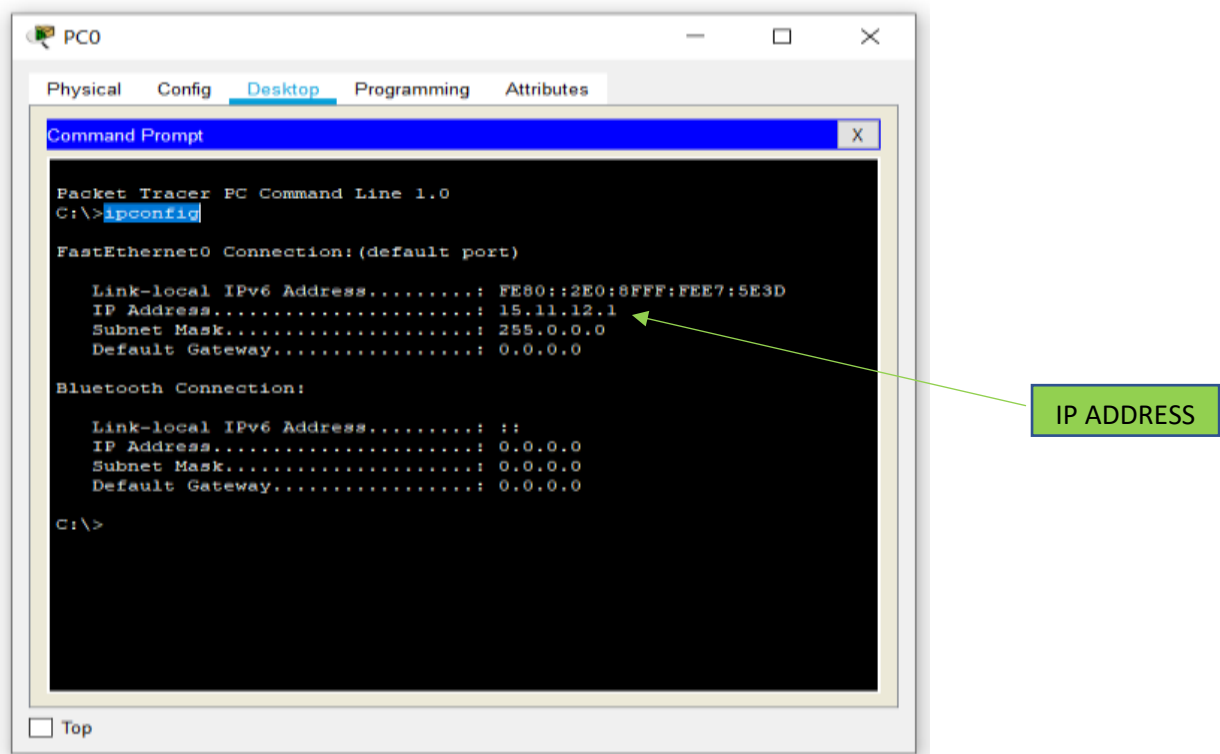
Gateway: <not set>
DNS Server: <not set>
Line Number: <not set>

Physical Location: Intercity, Home City, Corporate Office

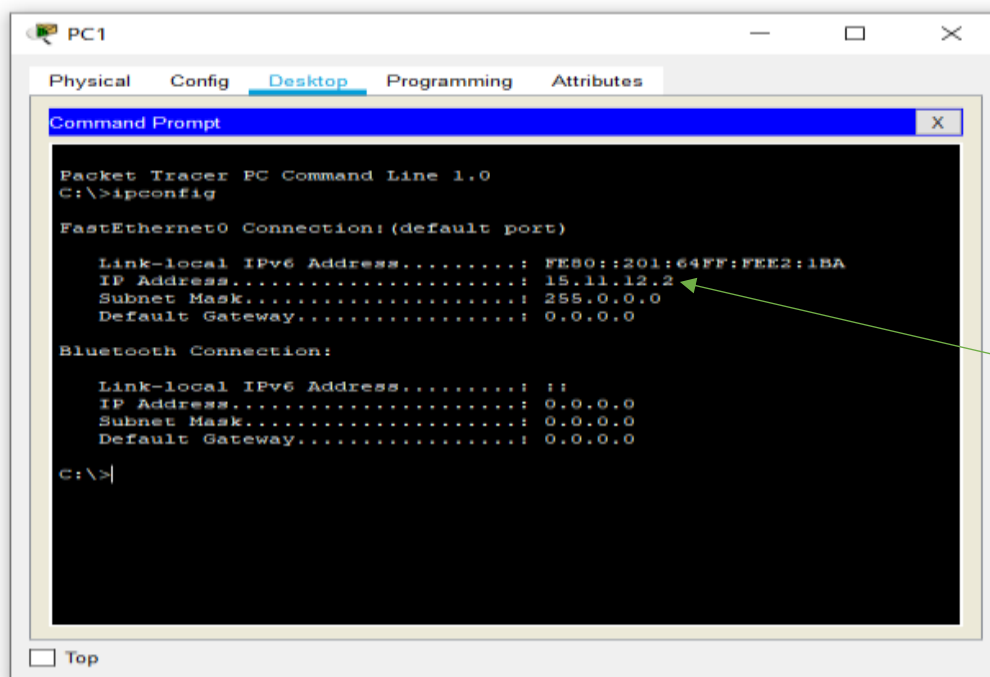
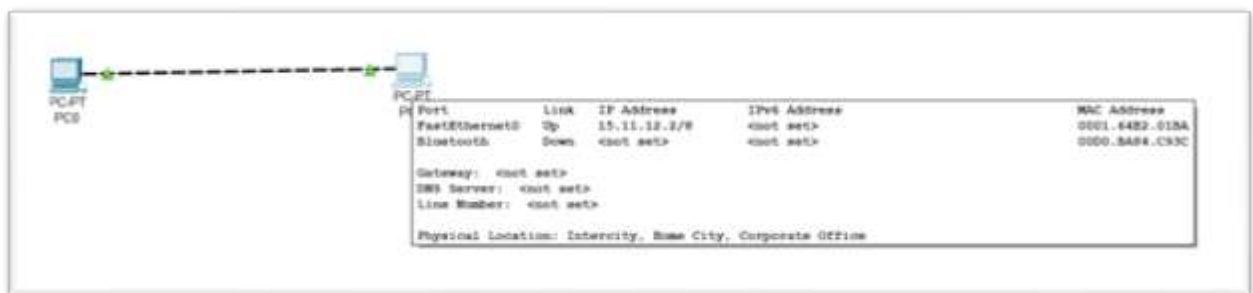
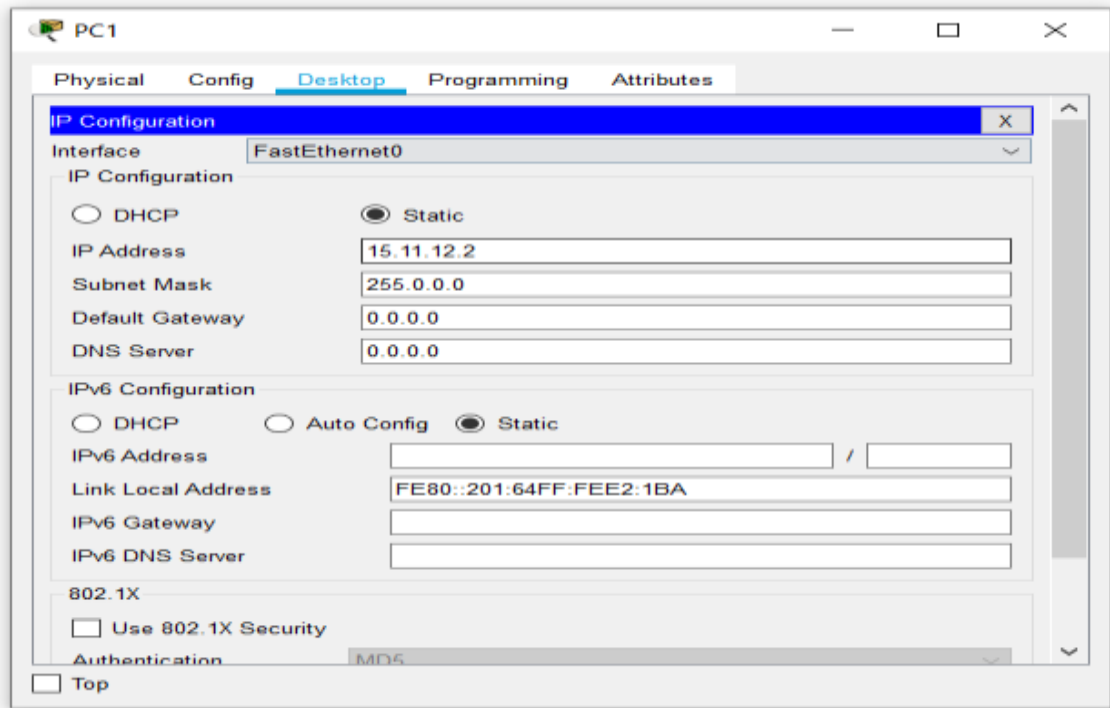
Verify the IP by opening the Command Prompt of PC0 in Desktop tab.



- Use **ipconfig** command to view the IP address.

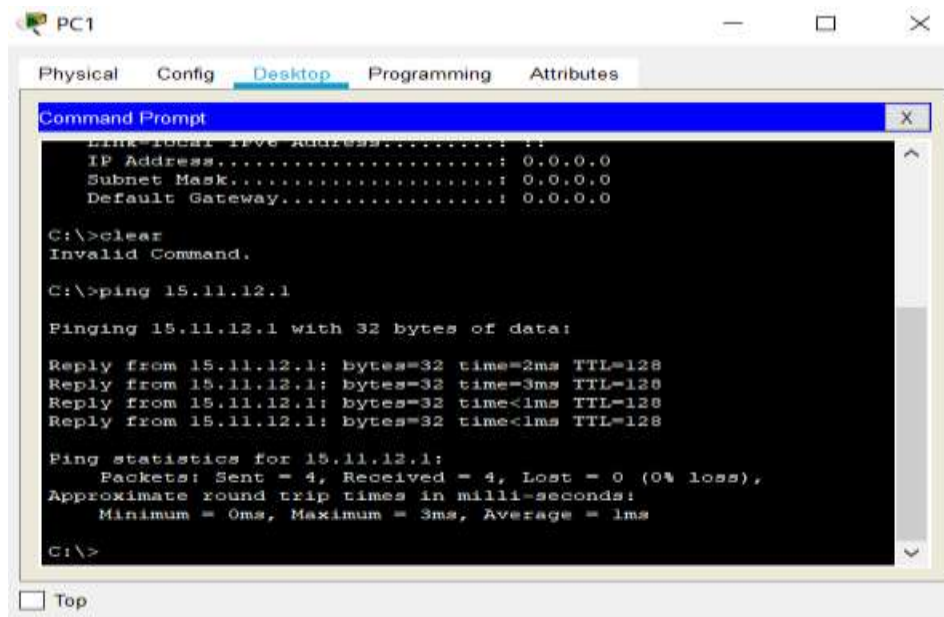


Now, perform the same procedure for PC1 as well to configure it.

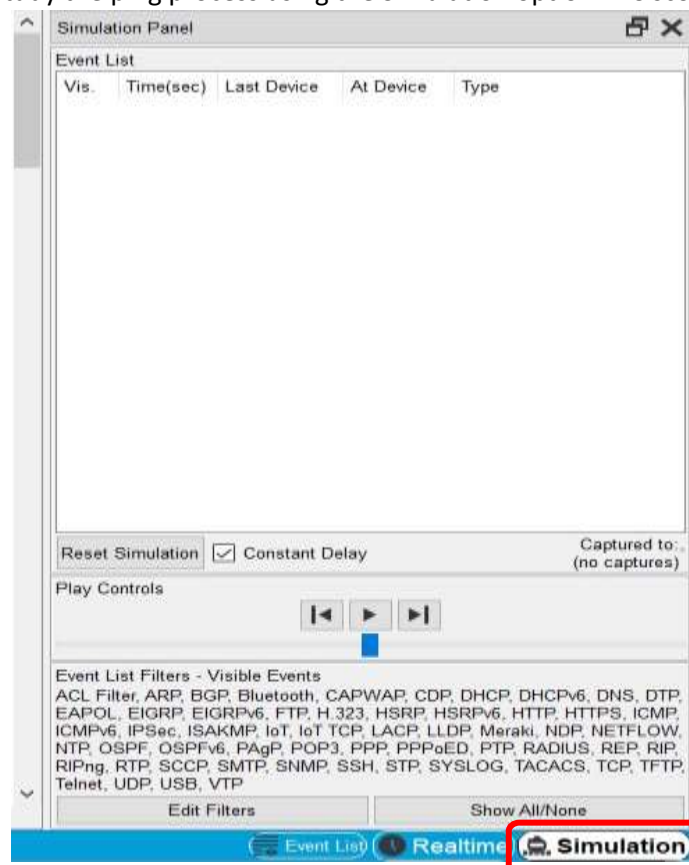


We can simulate a network between these two PCs.

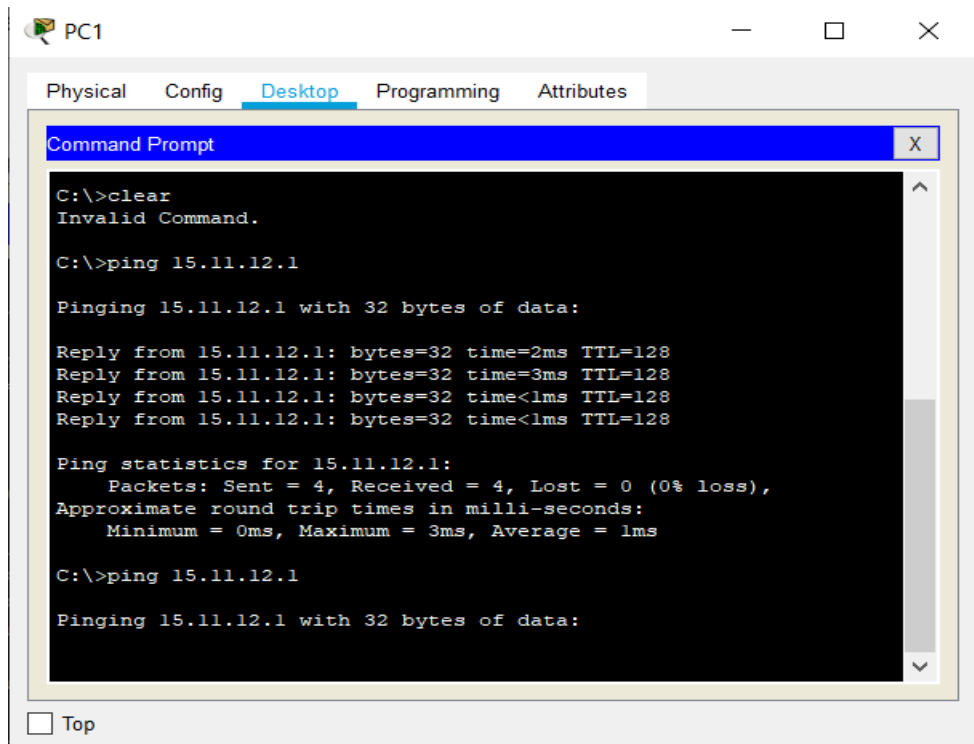
- Let's ping PC0 from PC1. Open the command prompt of PC1 and ping PC0 using **ping** command and its IP address **15.11.12.1**.



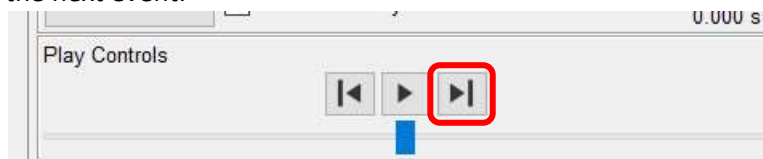
- Since, PC1 got the reply from PC0, its confirmed that they are connected.
- Now, lets study the ping process using the Simulation option in Cisco Packet Manager.



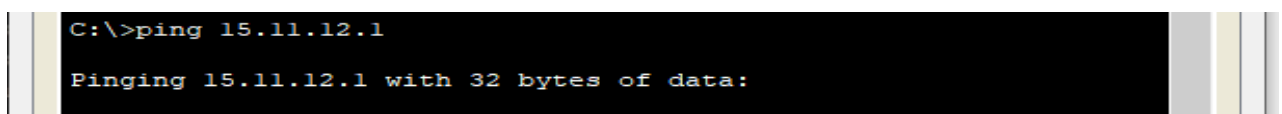
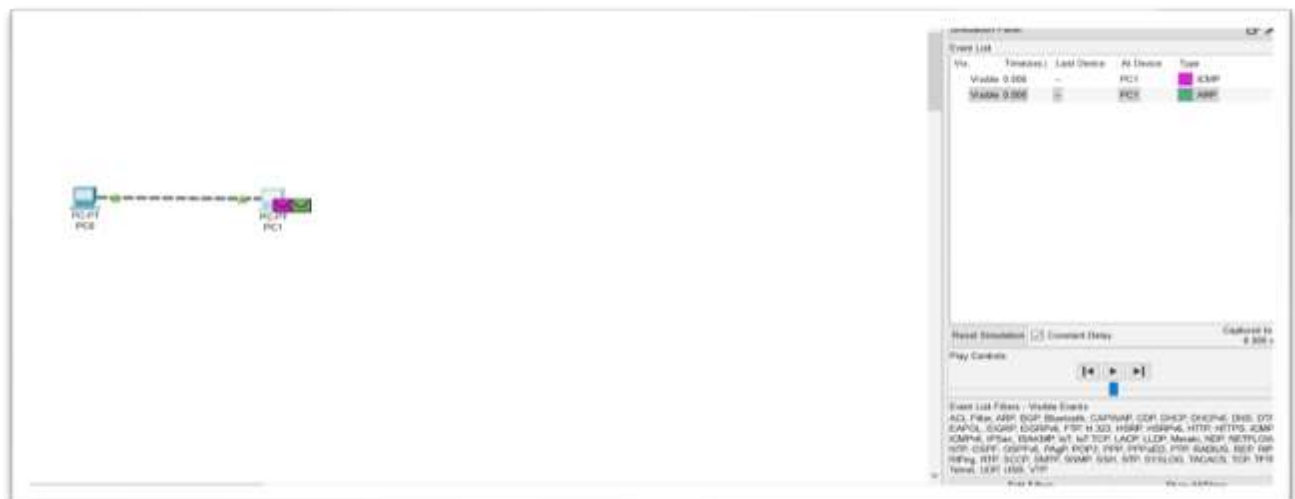
Again, open the command prompt and ping PC0 from PC1.



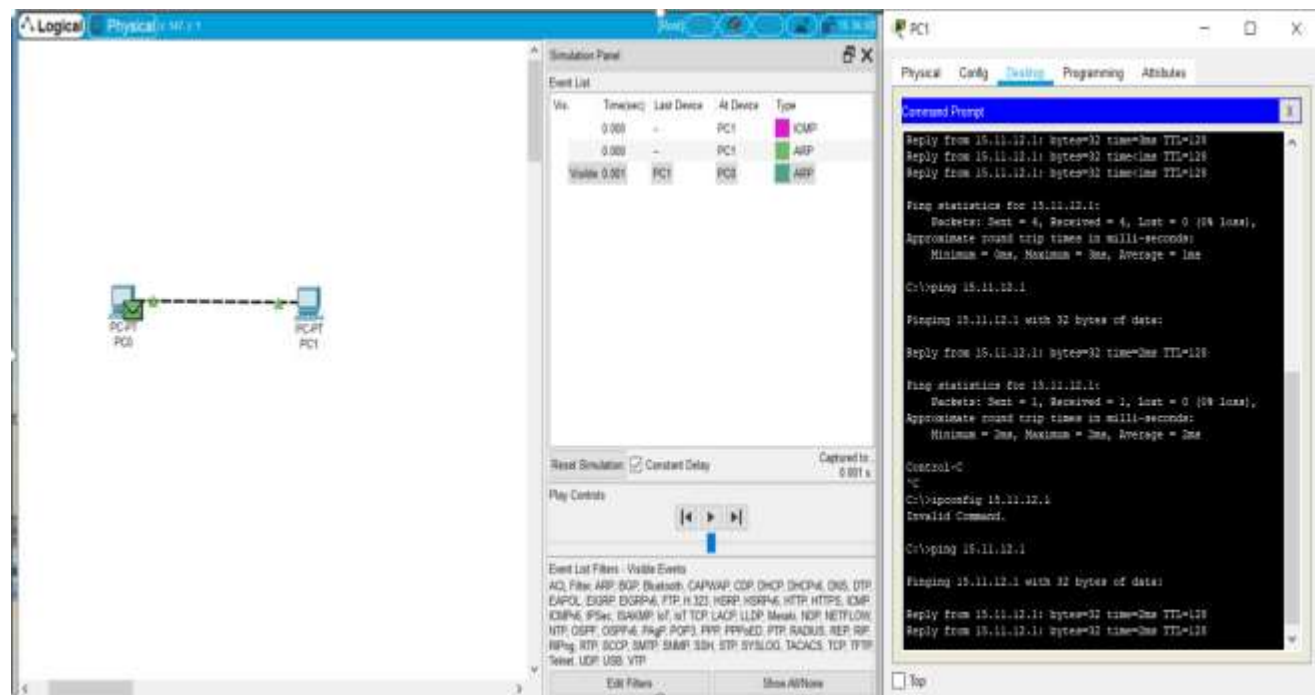
- It is clearly visible that the command doesn't run because in simulation mode, we have to go to the next event.



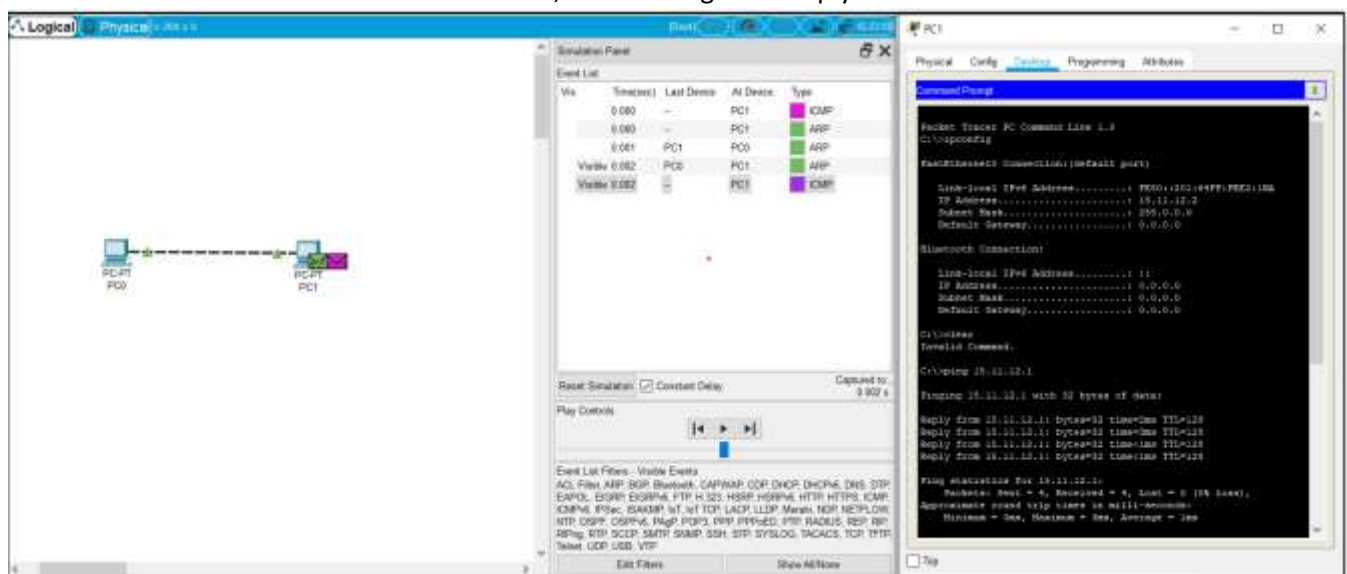
Now, let's observe the ping process.



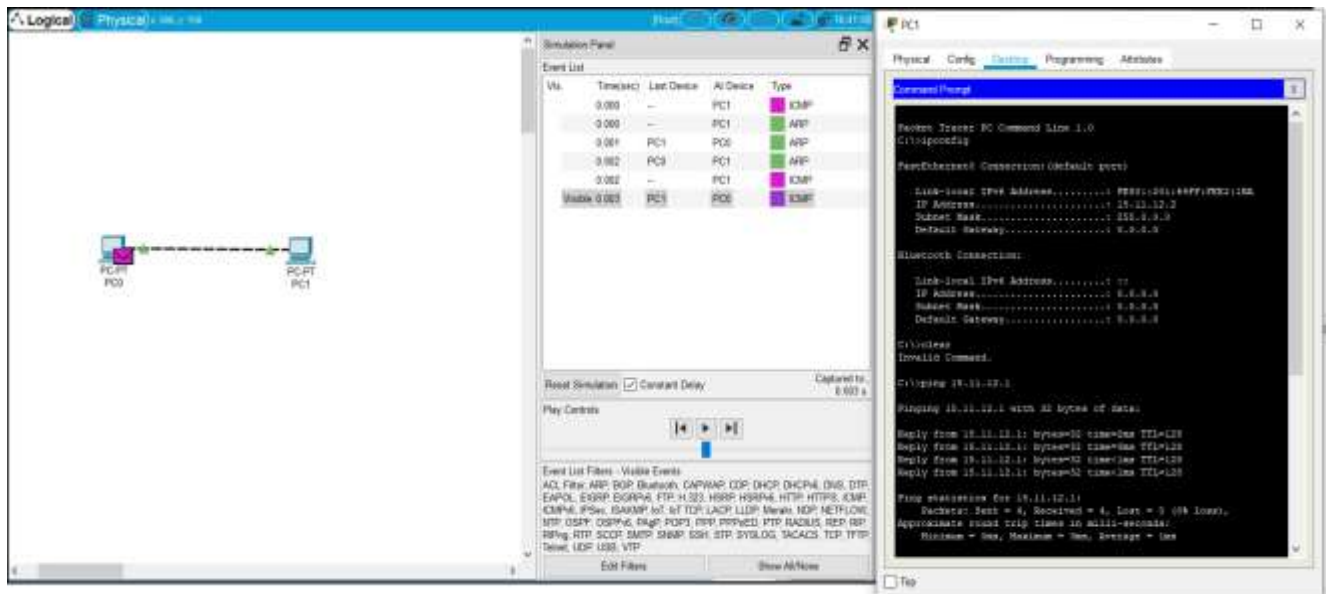
- The **ping** command first sends an echo request packet to an address and waits for a reply as shown.



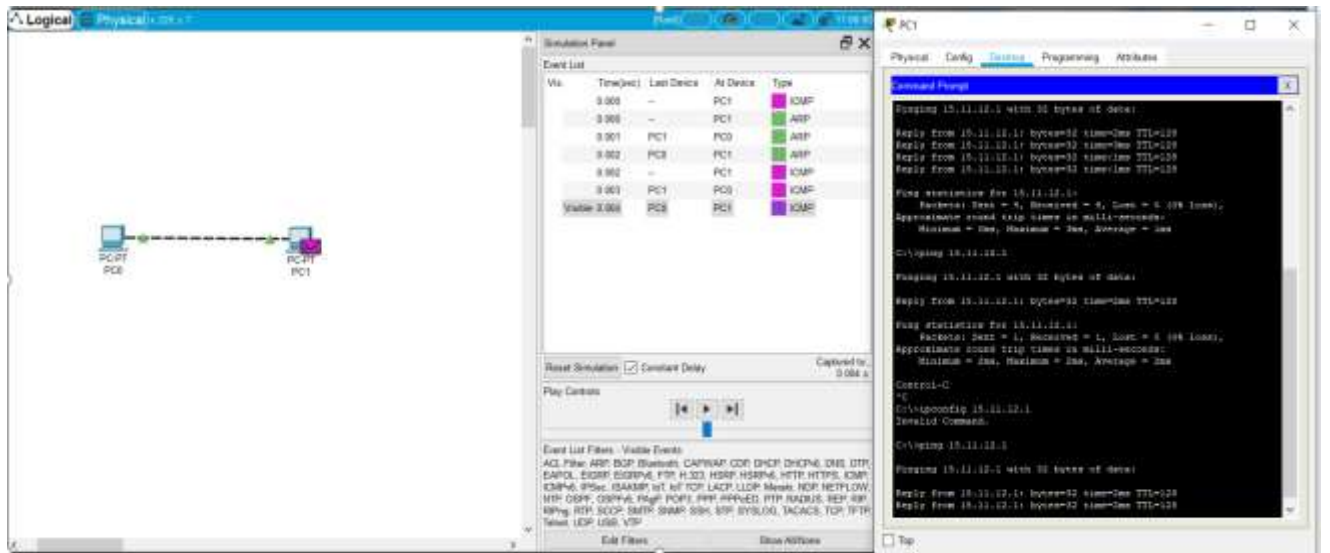
The destination sends an echo reply back to the source within a predetermined time called a timeout. As shown below, the source got the reply from destination.



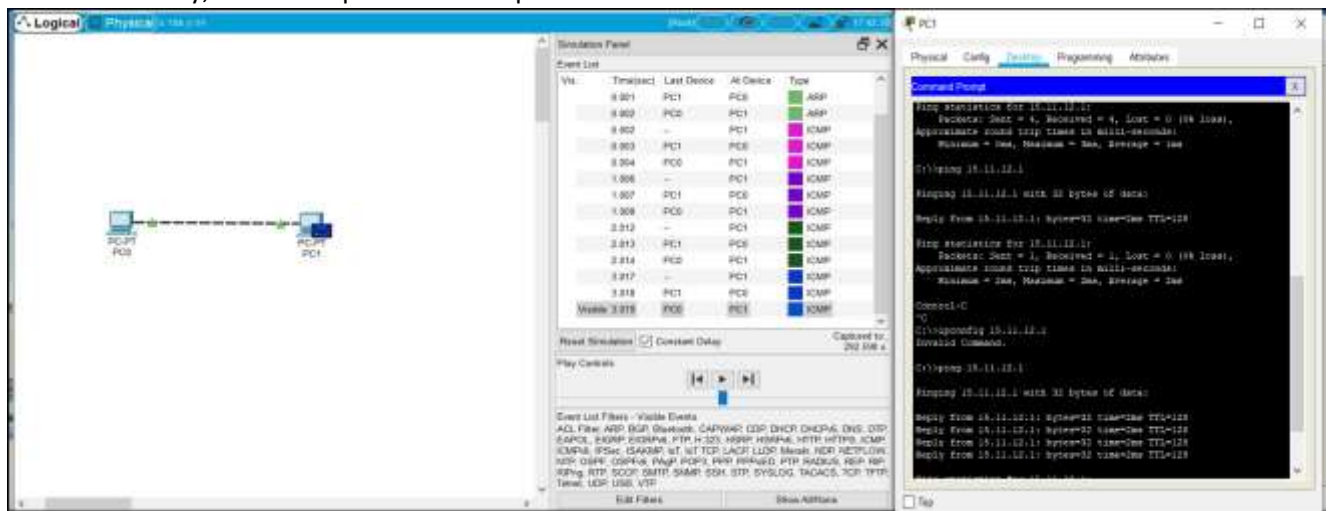
- By default, **ping** commands sends multiple requests (usually 4 to 5) and displays the result. The echo ping results show whether a particular request received a successful response. It also includes the number of bytes received and the time it took to receive a reply.



The first reply from destination is completed.



- Similarly, 3 more requests are completed as shown below.

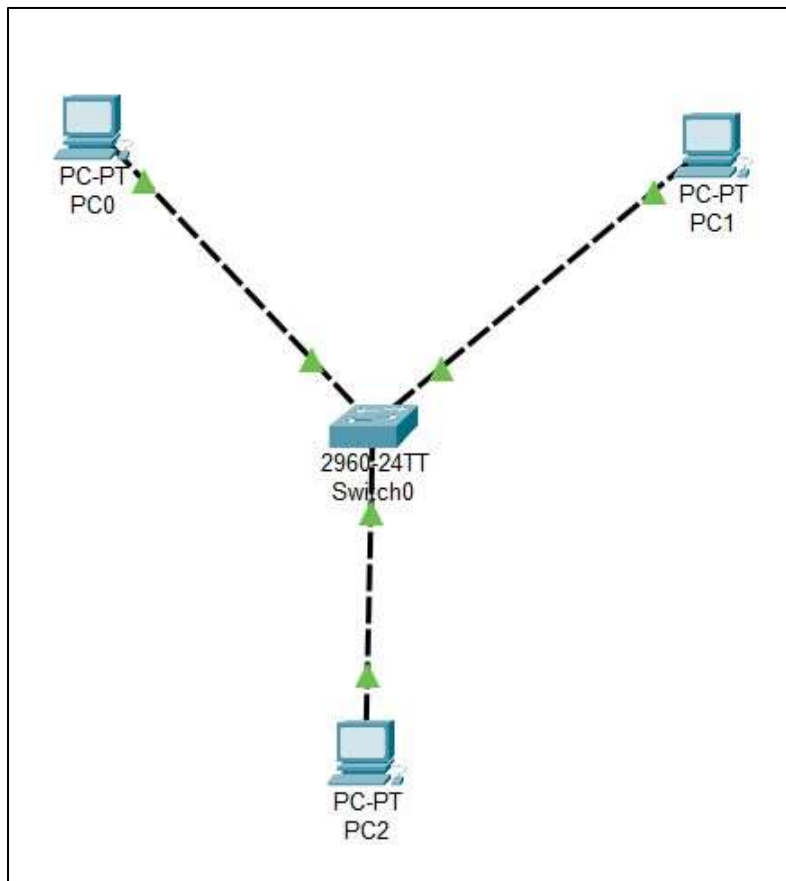


2. Creating a network with more than 2 PCs.

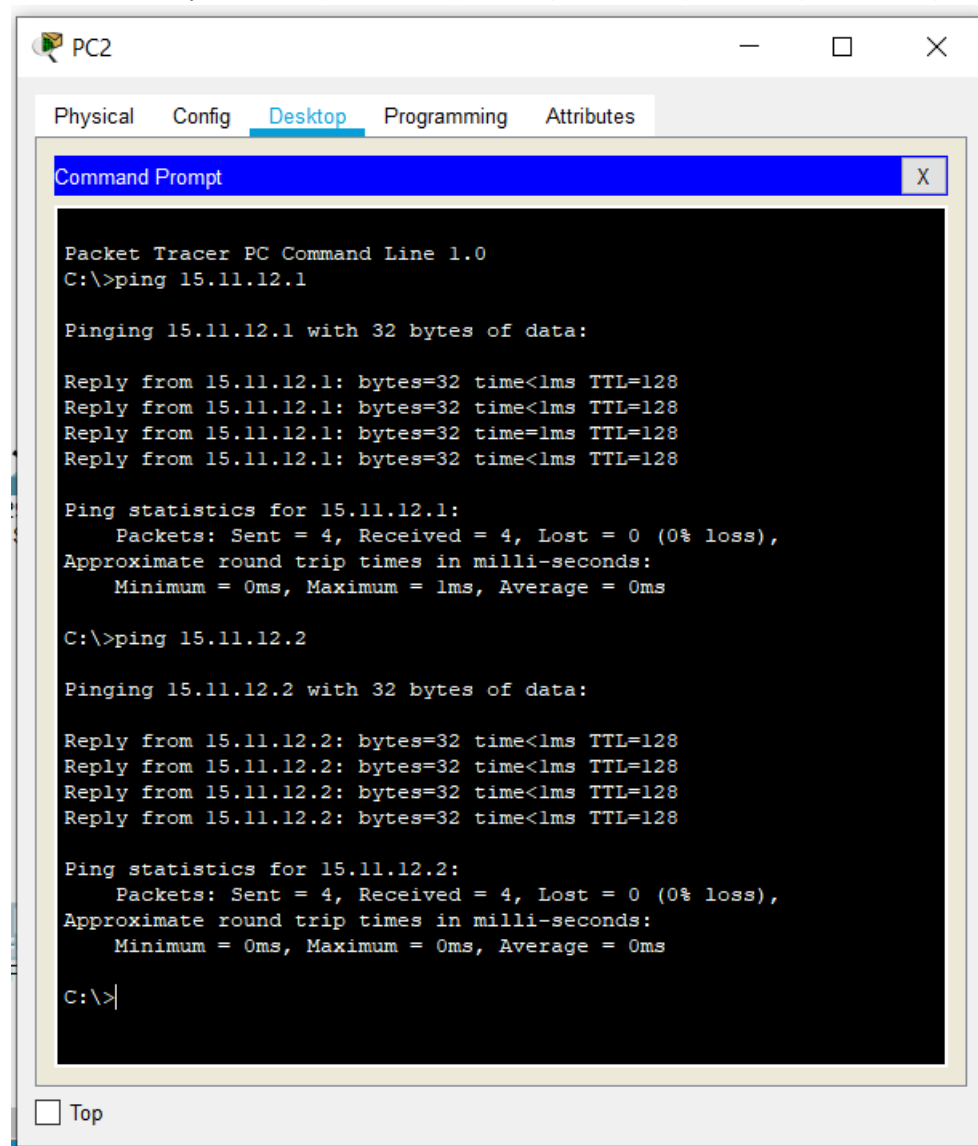
- Since each PC has only one FastEthernet port in our simulator, it is not possible to connect PCs only via copper cross over cable.
- So, we will use a switch for connecting them.
- Drag and drop 3 PCs in the blank area.
- Now, go to network devices and then switches. Drag a 2960 switch from it and add it in the blank area.



- Then using copper cross wire connect all the 3 PCs to the switch.



- This network can be used to ping from any one PC to other. For example, we have pinged successfully from PC2(**15.11.12.3**) to PC0(**15.11.12.1**) and PC1(**15.11.12.2**).



The screenshot shows a Packet Tracer PC Command Prompt window for PC2. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, showing a Command Prompt window. The Command Prompt displays the following text:

```
Packet Tracer PC Command Line 1.0
C:\>ping 15.11.12.1

Pinging 15.11.12.1 with 32 bytes of data:

Reply from 15.11.12.1: bytes=32 time<1ms TTL=128
Reply from 15.11.12.1: bytes=32 time<1ms TTL=128
Reply from 15.11.12.1: bytes=32 time=1ms TTL=128
Reply from 15.11.12.1: bytes=32 time<1ms TTL=128

Ping statistics for 15.11.12.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 15.11.12.2

Pinging 15.11.12.2 with 32 bytes of data:

Reply from 15.11.12.2: bytes=32 time<1ms TTL=128
Reply from 15.11.12.2: bytes=32 time<1ms TTL=128
Reply from 15.11.12.2: bytes=32 time<1ms TTL=128
Reply from 15.11.12.2: bytes=32 time<1ms TTL=128

Ping statistics for 15.11.12.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

At the bottom of the window, there is a checkbox labeled "Top".