

Practical 1

BASICS OF COMMUNICATION SYSTEM

PRACTICAL-1

AIM: TO LEARN SWITCH AND HUB NETWORK

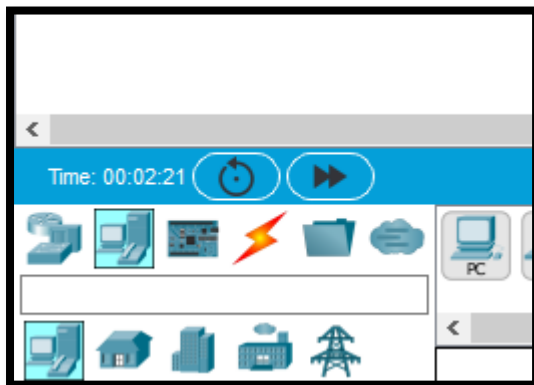
- 1 What is cisco packet tracer?
- 2 Why do we use simulator?
- 3 Then what is cisco packet simulator?
- 4 How does it work?
- 5 Why do we need to use it?
- 6 What is a ping command and what is use of it?
- 7 What is the main differences between switch and hub?

STEPS TO BE FOLLOWED :

1 START TO ESTABLISH LAN CONNECTION

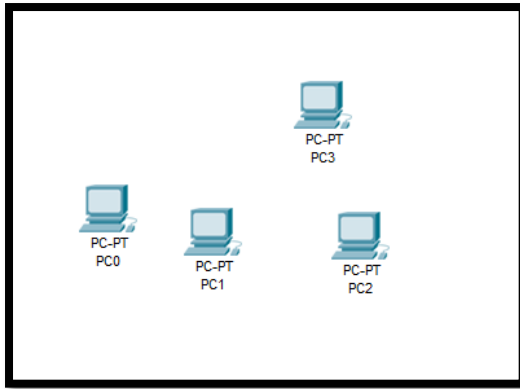
Step: 1 Establish a connection through LAN

Open cisco packet tracer click on pc through end user

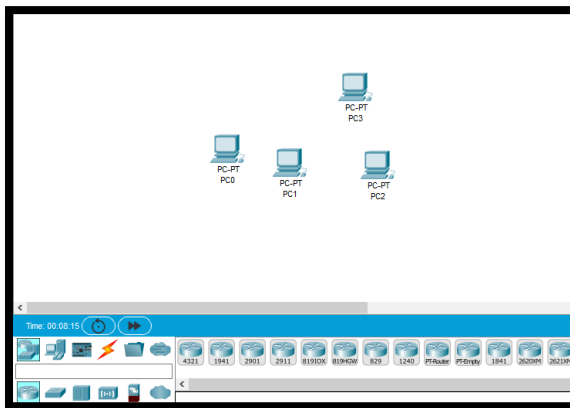


Step: 2 Drag and drop it on canvas

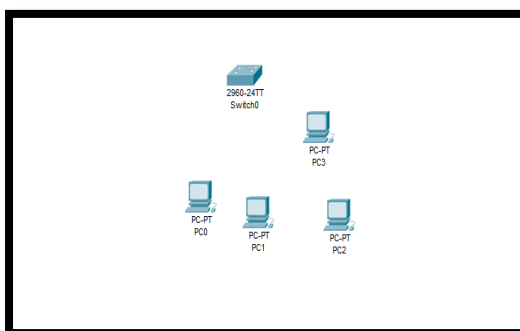
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Step 3: select a switch to connect all pcs

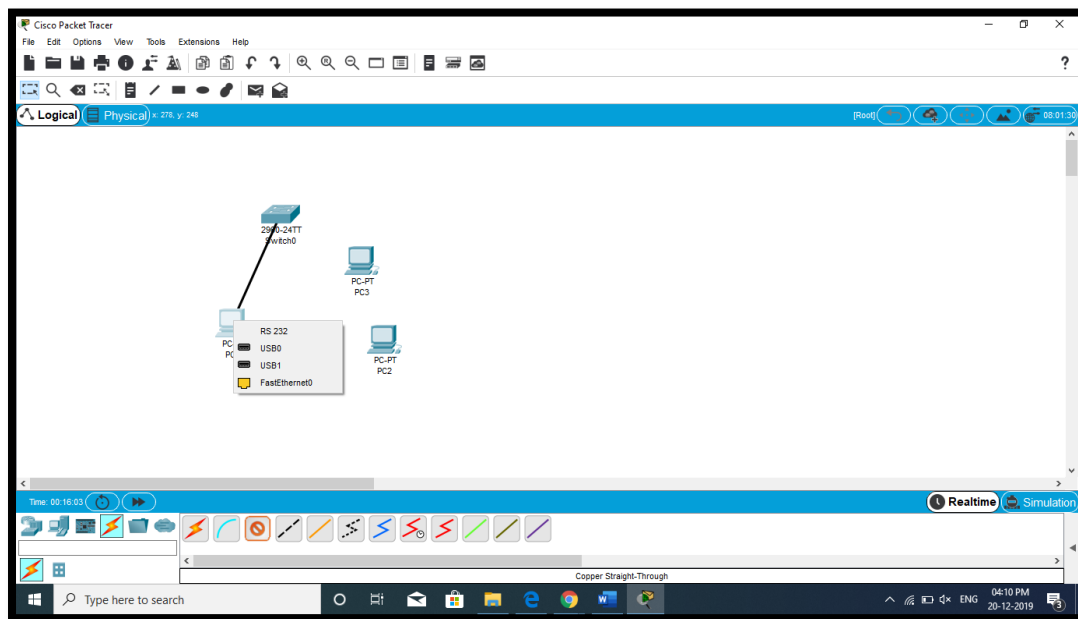


Step 4: after that peak switch and put on canvas



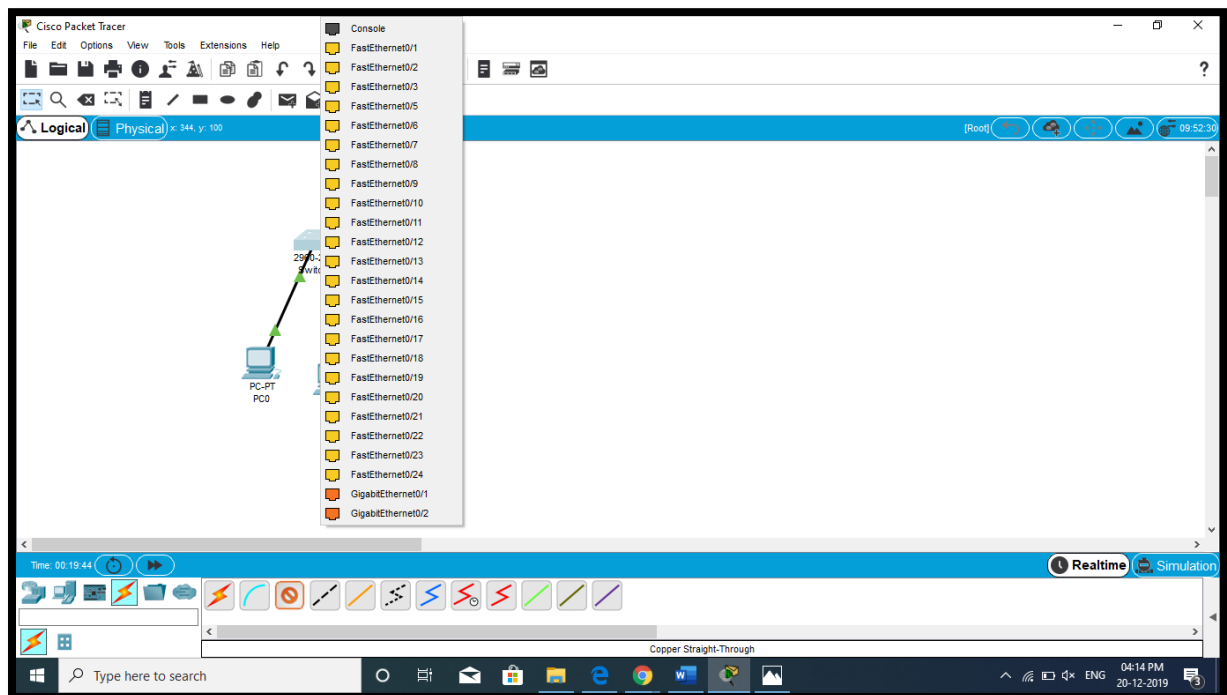
Step 5: connect switch and pc through wires

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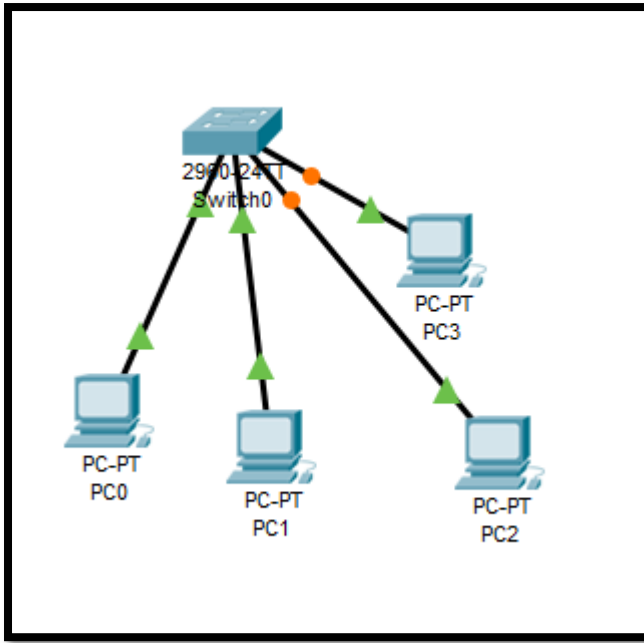
At times of connecting consider all connection are proper for that protocols like select internet port if u want to switch to be connected with internet

Step 6: number of ports are higher in switch :



Step 7: connect all of them by wires through single line connection

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Step 8: give ip address to all

The screenshot shows the configuration window for PC2, specifically the "Desktop" tab. The "Static" radio button is selected under the "DHCP" section. The IP Address is set to 192.168.1.1, Subnet Mask to 255.255.255.0, Default Gateway to 0.0.0.0, and DNS Server to 0.0.0.0. Under the "IPv6 Configuration" section, the "Static" radio button is also selected. The IPv6 Address is empty, Link Local Address is FE80::201:63FF:FE58:4674, IPv6 Gateway is empty, and IPv6 DNS Server is empty. The "802.1X" section is collapsed, showing "Use 802.1X Security" as unchecked, "Authentication" as MDS, and empty fields for Username and Password. A "Top" button is at the bottom left.

Step: 9 ping command to check connectivity

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```
Command Prompt

Bluetooth Connection:

Link-local IPv6 Address.....: ::
IP Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: 0.0.0.0

C:\>ping
Packet Tracer PC Ping

Usage: ping [-n count | -v TOS | -t ] target

C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

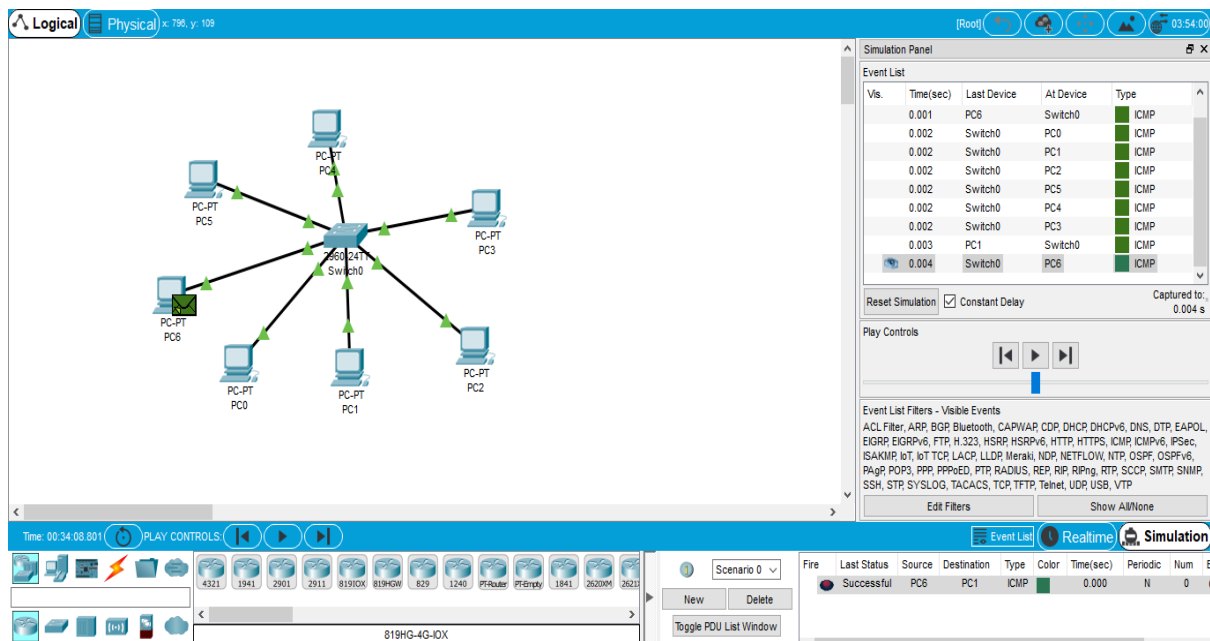
Reply from 192.168.1.4: bytes=32 time=6ms TTL=128
Reply from 192.168.1.4: bytes=32 time=3ms TTL=128
Reply from 192.168.1.4: bytes=32 time=4ms TTL=128
Reply from 192.168.1.4: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 6ms, Average = 3ms

C:\>
```

Step: 10 ipconfig to check ip address

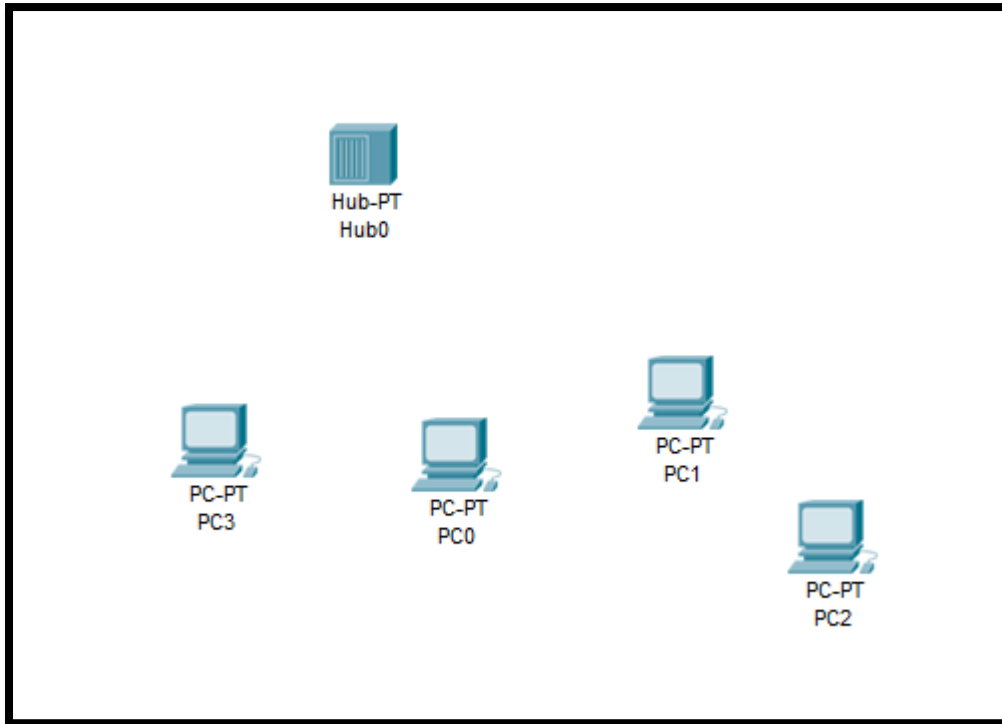
Step: 11 check simulation



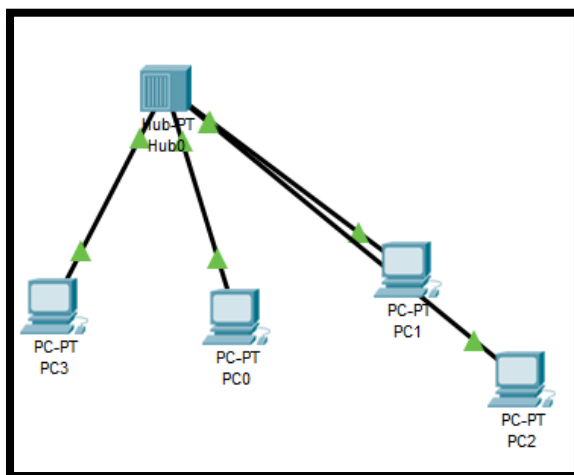
Steps in hub connection

Step 1: connect all pcs from previous stage and establish a LAN connection

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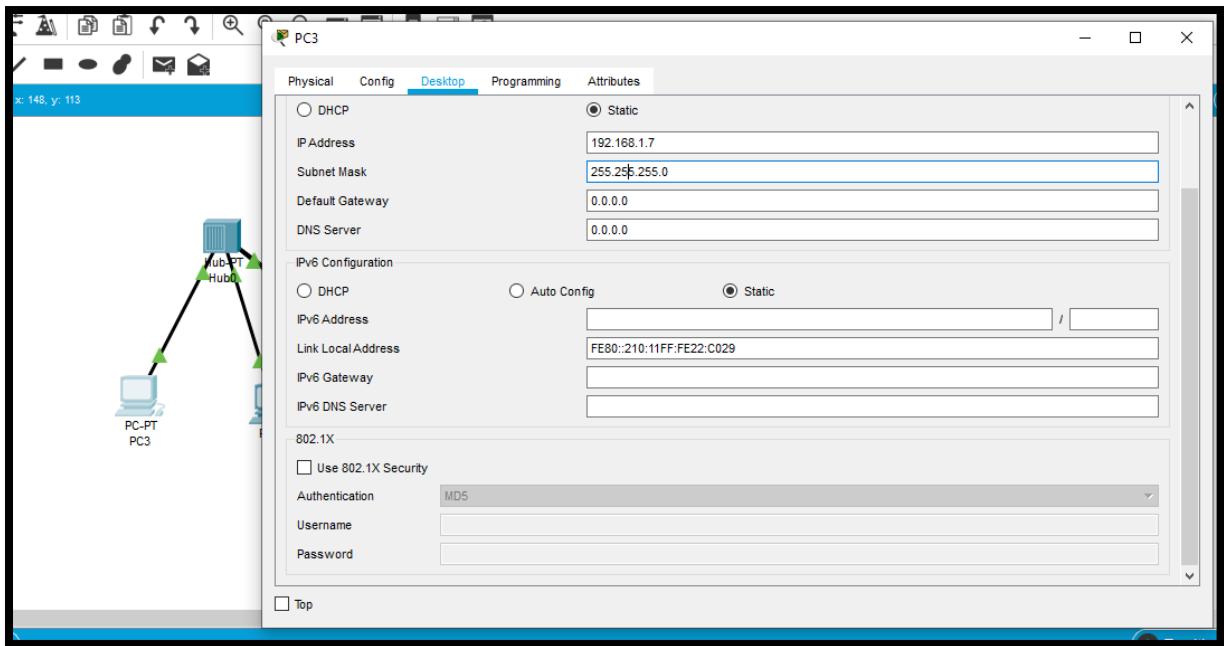


Step 2 connect wires to hub and check the connectivity through ping

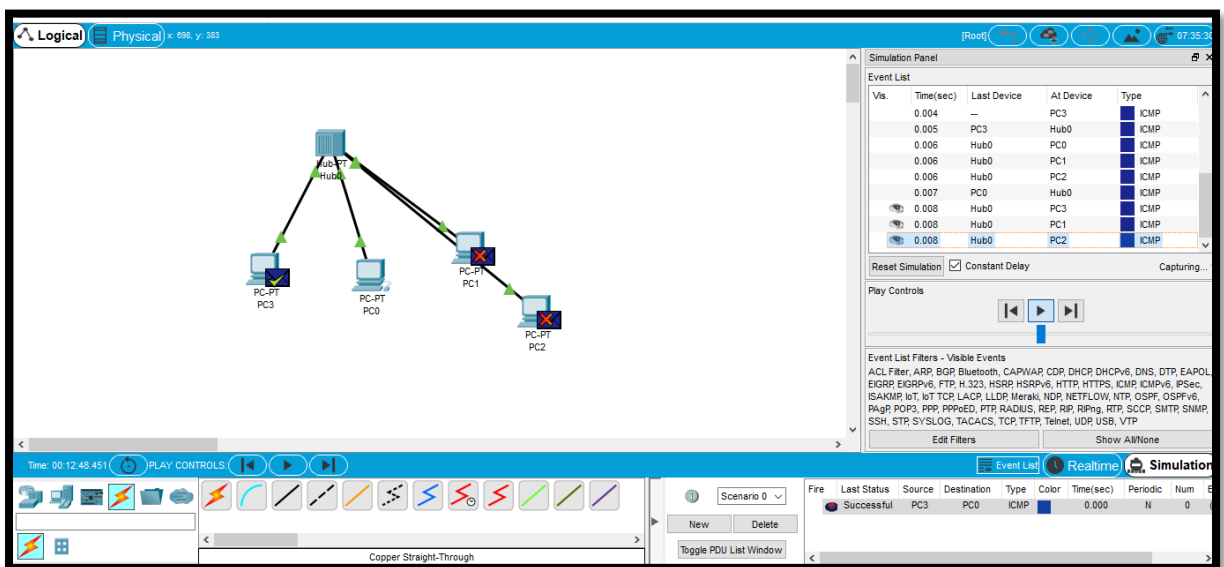


Step 3: Give ip address to all pcs and check their connectivity through ping command

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step 4 :run on simulation to get output



Step last : check ping command is working or not

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```
Command Prompt

Link-local IPv6 Address.....: FE80::290:21FF:FESB:62E
IP Address.....: 192.168.1.9
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 0.0.0.0

Bluetooth Connection:

Link-local IPv6 Address.....: ::
IP Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: 0.0.0.0

C:\>ping 192.168.1.9

Pinging 192.168.1.9 with 32 bytes of data:

Reply from 192.168.1.9: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.1.9:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 2ms, Average = 2ms

Control-C
^C
C:\>ping 192.168.1.9
```

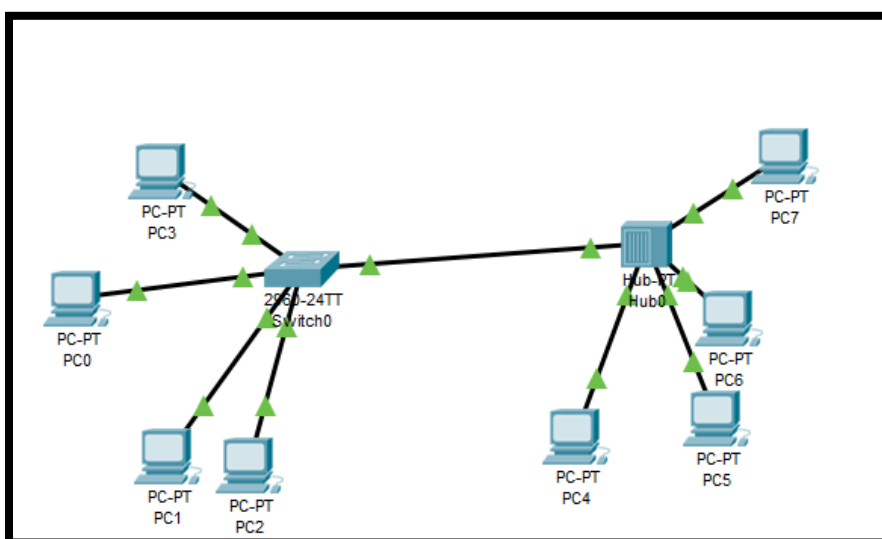
Here no packetlost so its working and rechability is also ok

Steps for hub and switch (hybrid connection)

The keynote is hub is not as secure as switch as switch is smarter than the hub

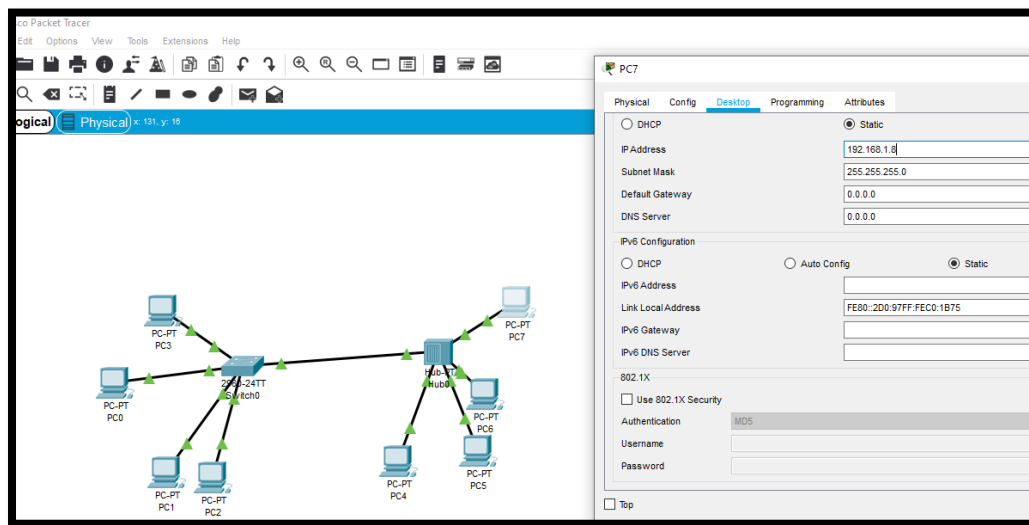
Step 1: connect group of pcs to hub and another group of pcs to switch through single wire connection as mentioned above

Connect switch and hub

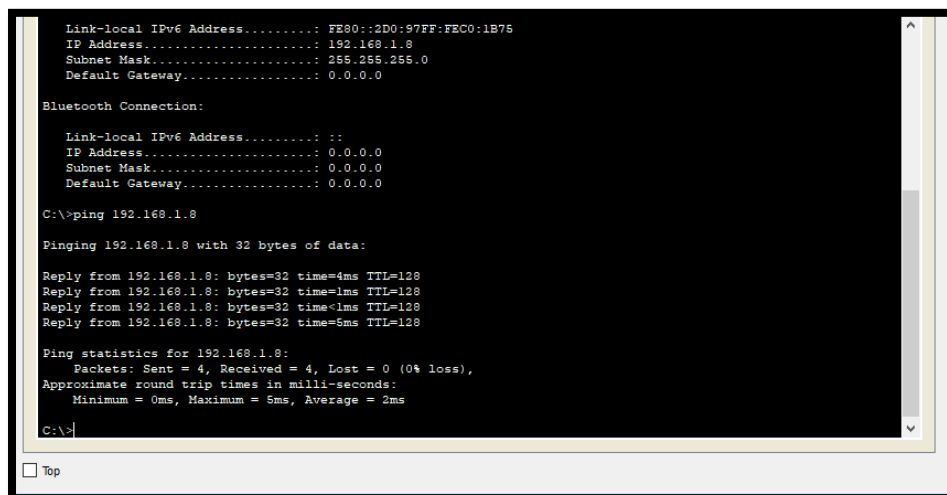


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Step 2 give them ip address and check ping command



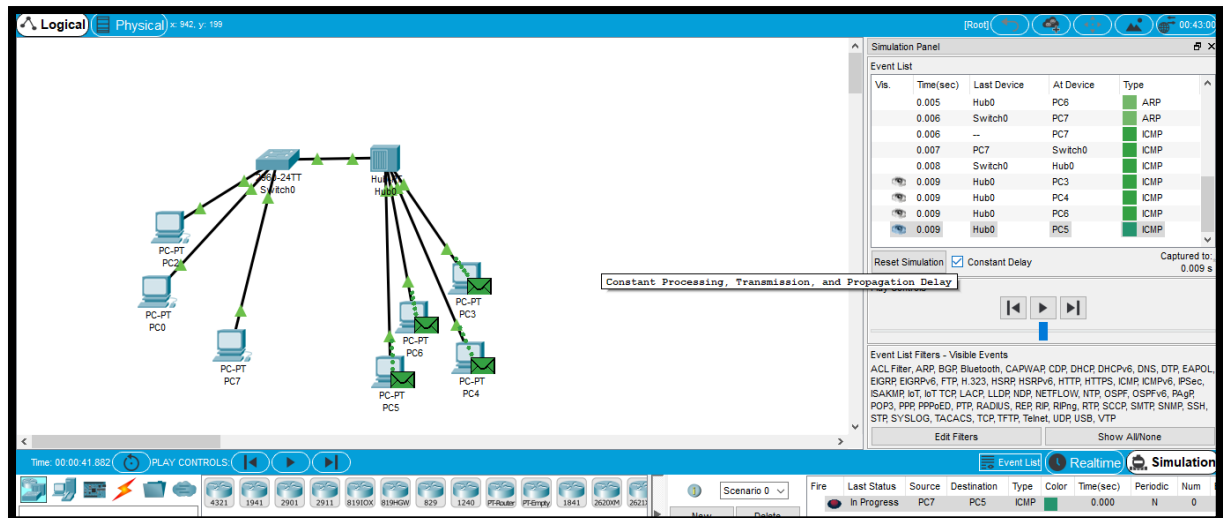
Step 3 ping command



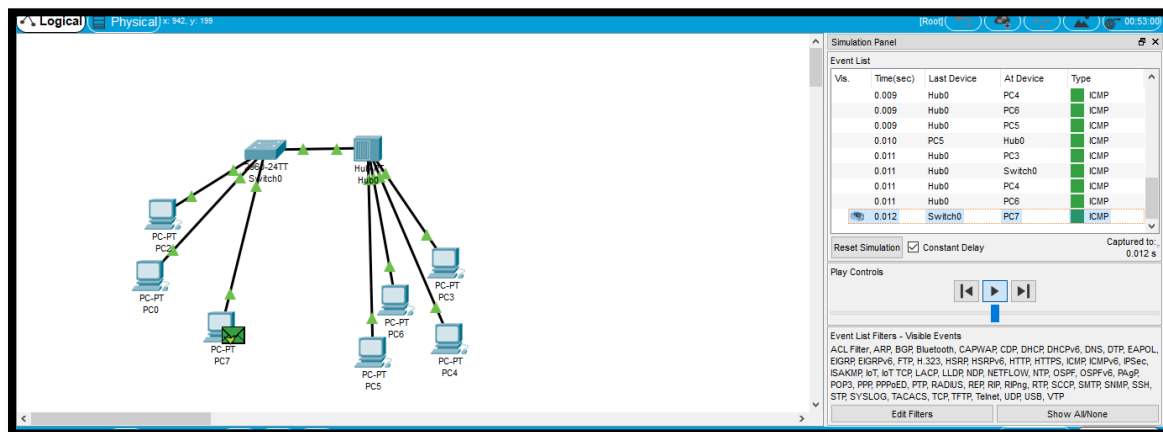
Step last : run on simulation to get desired output in success form

Here hub is supplying or broadcasting message to all

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Whereas switch broadcast it to only one



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The screenshot displays the Simulation Panel interface, which is divided into several sections:

- Event List:** A table showing simulation events. The columns are Vis., Time(sec), Last Device, At Device, and Type. The events listed are STP messages at 0.984s and 0.985s, and ICMP messages at 0.986s.
- Reset Simulation:** A button to reset the simulation.
- Constant Delay:** A checkbox that is currently checked.
- Captured to:** A text field showing the capture time as 0.986 s.
- Play Controls:** A section containing play, pause, and stop buttons, along with a progress bar.
- Event List Filters - Visible Events:** A list of protocols and services that are visible in the event list, including ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDR, USB, and VTP.
- Edit Filters:** A button to edit the event list filters.
- Show All/None:** A button to show all or none of the events.
- Simulation Panel:** A section at the bottom containing the Event List, Realtime, and Simulation tabs.

Vis.	Time(sec)	Last Device	At Device	Type
	0.984	--	Switch0	STP
	0.985	Switch0	PC2	STP
	0.985	Switch0	Hub0	STP
	0.985	Switch0	PC0	STP
	0.985	Switch0	PC7	STP
	0.986	Hub0	PC3	STP
	0.986	Hub0	PC4	STP
	0.986	Hub0	PC6	STP
	0.986	Hub0	PC5	STP

Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	E
Successful	PC7	PC5	ICMP		0.000	N	0	