Experiment-1

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Sem: 6th **Date:** 17/02/2022
Subject: NOS Lab **Code:** CSP-396

1. **Aim/Overview of the practical :**
   a. To know the basics of Packet Tracer functionality.

2. **Task to be done :**
   a. You will write the difference between the Cat5e and Cat6 cables based on their costing in points.
   b. You will mention the advantages and disadvantages of both cables in different scenarios.

3. **Apparatus :**
   a. **Cisco-Packet-Tracer**

4. **Algorithm/Flowchart :**

   N/A

5. Theme/Interests definition:

a. Difference between the Cat5e and Cat6 cables:-

The primary difference between Cat5e and Cat6 cables is transmission performance, and by extension the total bandwidth available on the cable. Cat5 and Cat5e are limited to 100 MHz speed while Cat6 can go up to 250 MHz. In practical terms, this means that a Cat5e cable is only capable of adhering to the 1000BASET/TX standard while Cat6 can adhere to the much faster 10GBASE-T (10-Gigabit Ethernet). Cat6 is capable of 10x the speeds of Cat5e. Physical improvements in the hardware of the cable make this possible. A Cat6 network is fully backwards compatible with Cat5e devices.

b. Give differences in Cat5e and Cat6 cables based on their costing:-

Cat5e	Cat6
Cat5e cables are made for operating frequencies nearly upto 100mhz	Cat6 are made for operating frequencies upto 250mhz
provides higher interface	provides lower interface compared to the c
less flexible	more flexible
cat5e cables are thinner	cat6 cables are thicker than cat5e
process less data at a time	process more data at a time

c. Advantages and Disadvantages of both cables [Cat5e & Cat6]:-

i. Cat5e advantages And Disadvantages:-

Advantages	Disadvantages
It is one of the cheapest networking cables.	This cable is limited in terms of data transfer.
This cable is good at carrying nearly 1 gigabyte per second.	Effectiveness of the cable decreases gradually by handling several devices.
improved signal carrying capacity.	This cable can only handle upto 100 mbps so it is not useful for setting networks in corporative offices.

ii. **Cat6 Advantages And Disadvantages:-**

Advantages	Disadvantages
This cable can handle the speed nearly upto 250mhz.	In this cable components are not in gigabyte than the speed will decrease
It provides great bandwidth.	The cost of this cable is high.
Reduced near end cross talk.	

6. Steps for experiment/practical:-

a. Design Phase :

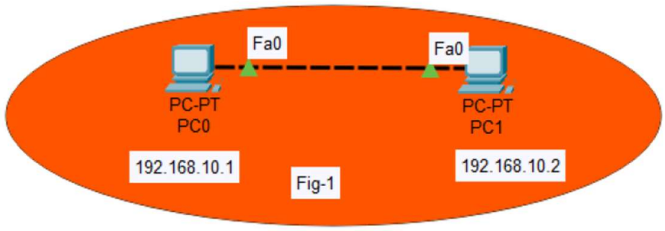
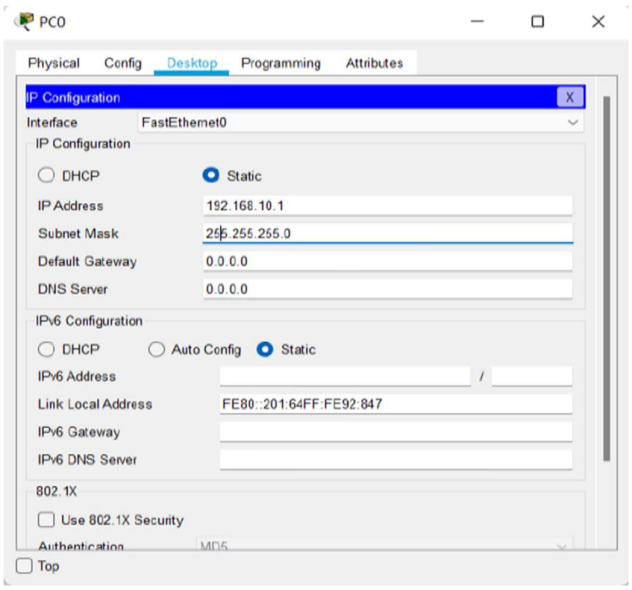
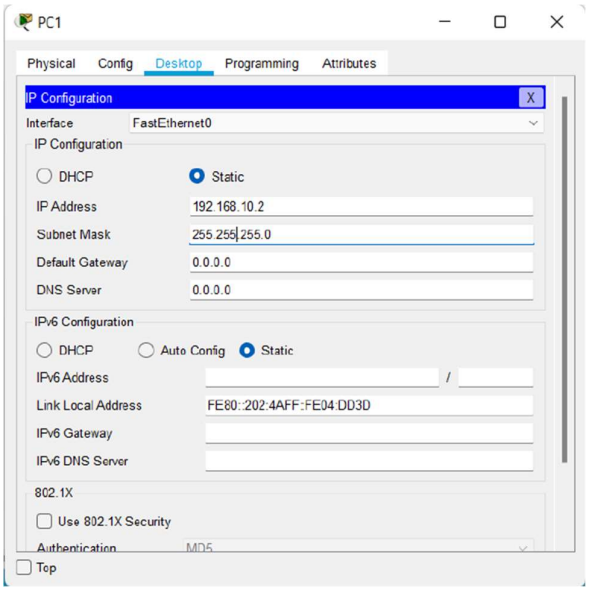


Fig-1
Step1- Designing Phase
Step2- Assign to ip address to pc
Step-3 Checking Output

b. Assign IP to PC0 and PC1 :





c. Design Phase II :

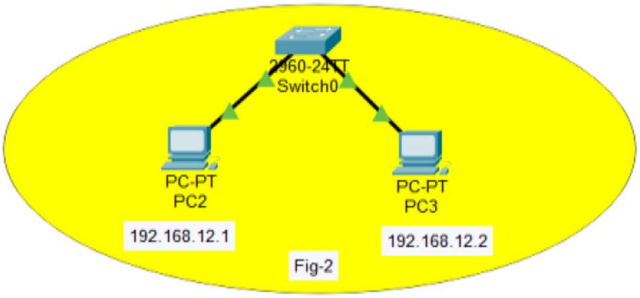
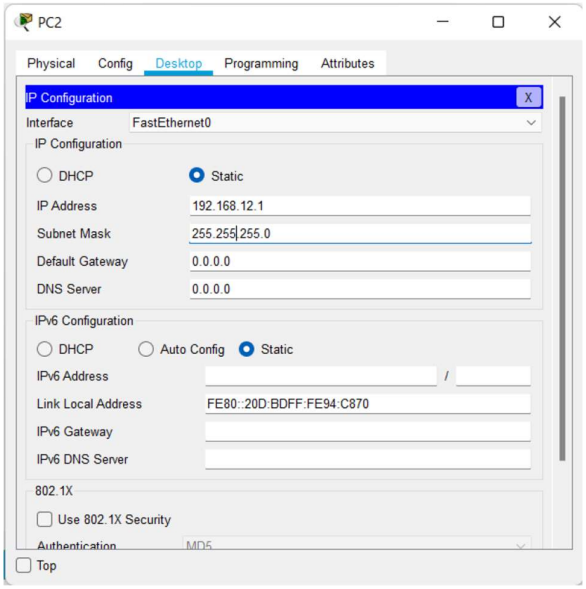
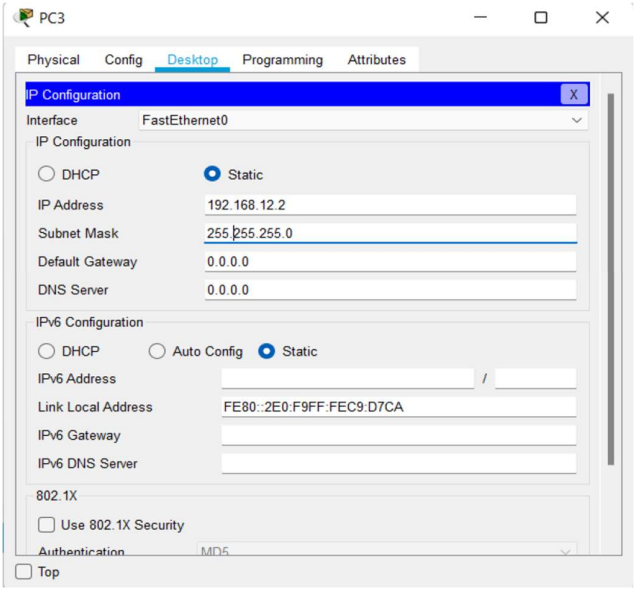


Fig-2
Step1- Designing phase
Step2- Assign ip address to pc
Step3- Checking Output

d. Assigning IP to PC2 and PC3 :





e. Design Phase III :

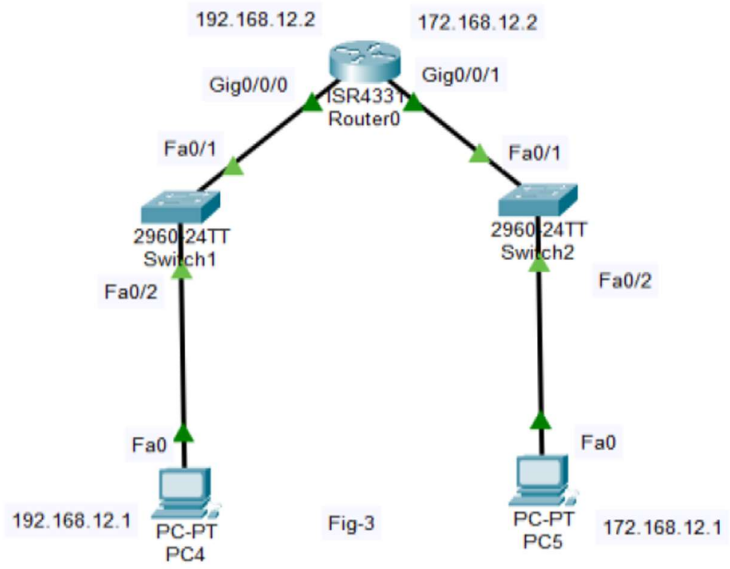
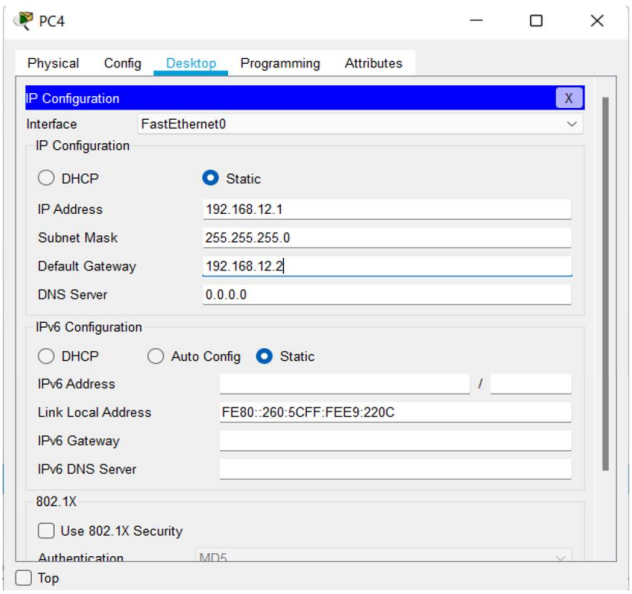
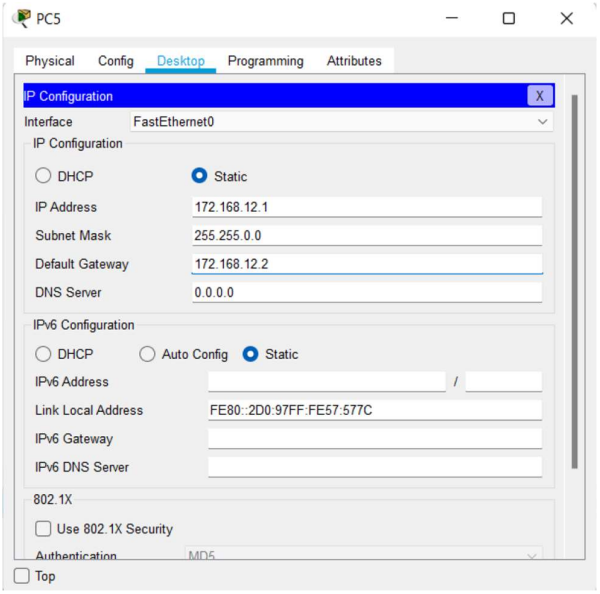


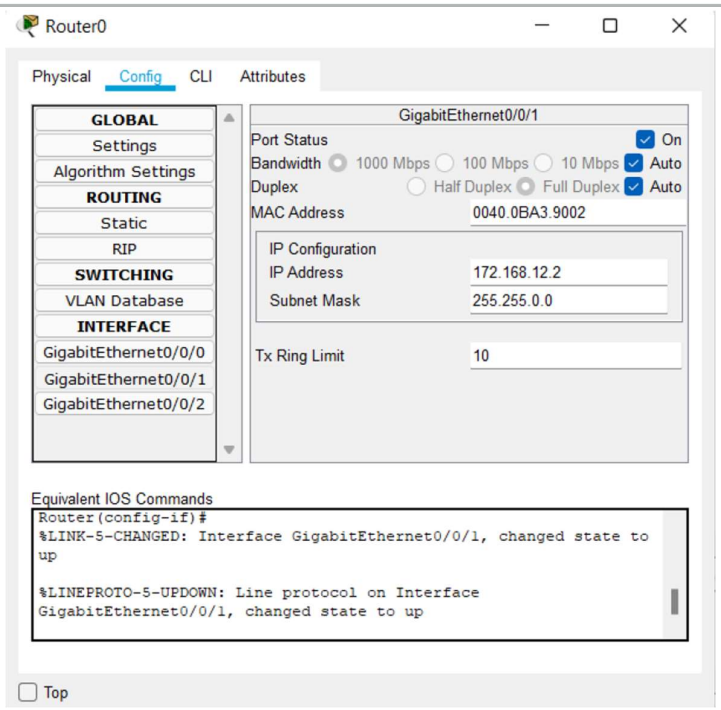
Fig-3

Fig-3
Step1- Designing Phase
Step2- Assign ip address to pc
Step3- Assign ip address to Router
Step4- Checking Output

f. Assign IP to PC4, PC5 and Router0 :







7. **Observations/Discussions(**`For applied/experimental sciences/materials based labs`**):**

   N/A

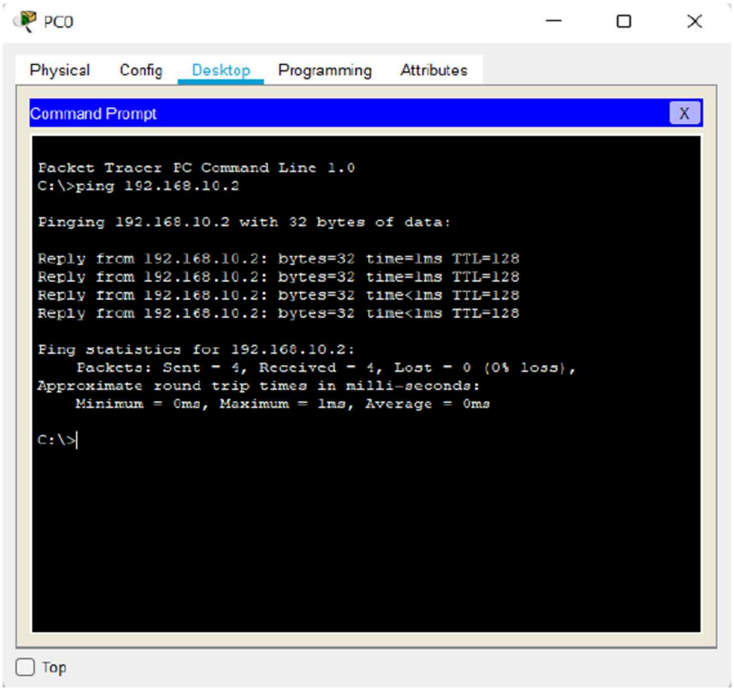
8. **Percentage error (if any or applicable):**

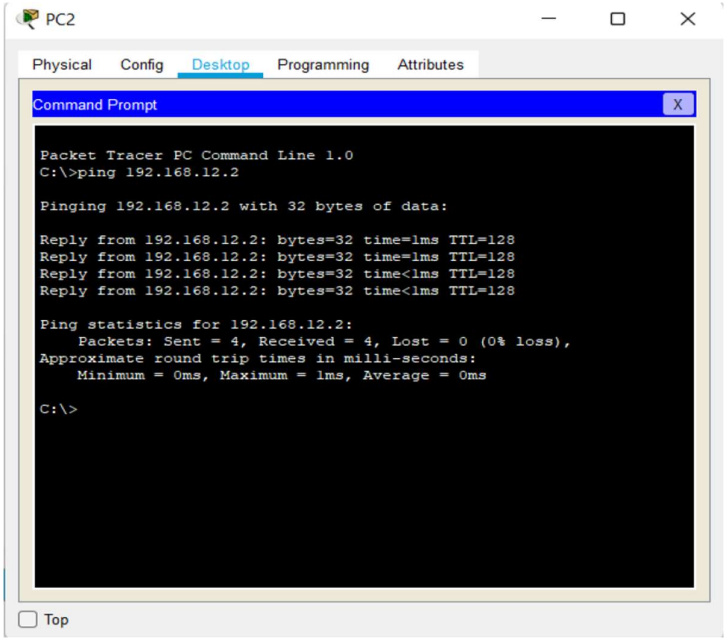
   N/A

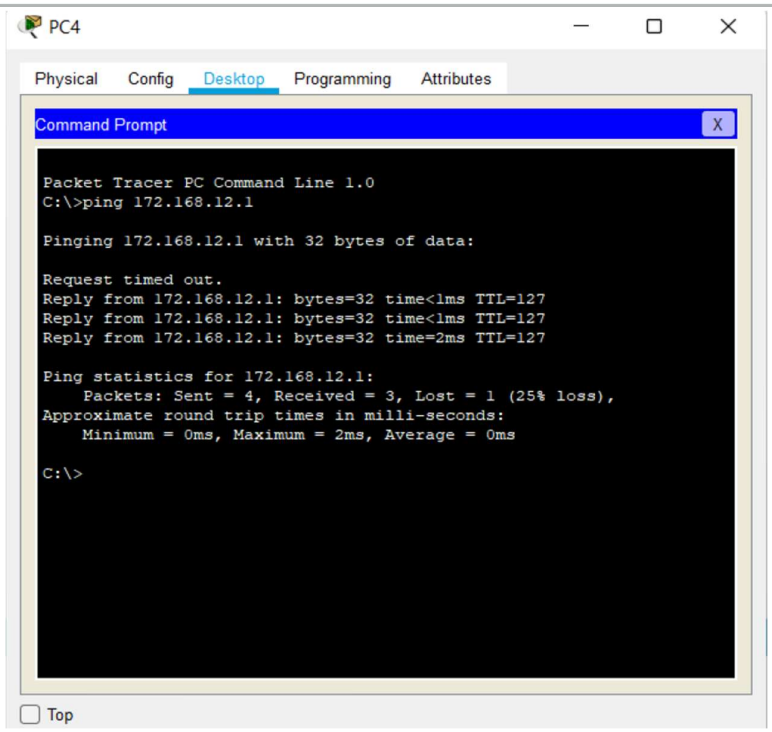
9. **Calculations/ Chemical Reactions / Theorems /Formulas used etc :**

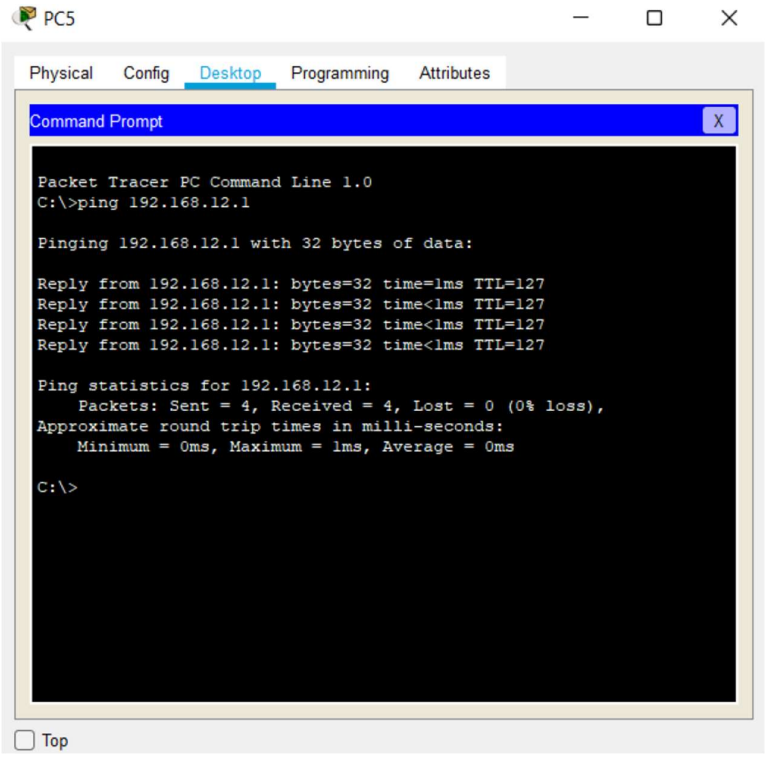
   N/A

10. Result/Output/Writing Summary:






PC4
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 172.168.12.1
Pinging 172.168.12.1 with 32 bytes of data:
Request timed out.
Reply from 172.168.12.1: bytes=32 time<1ms TTL=127
Reply from 172.168.12.1: bytes=32 time<1ms TTL=127
Reply from 172.168.12.1: bytes=32 time=2ms TTL=127
Ping statistics for 172.168.12.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
C:\>
Top


PC5
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.12.1
Pinging 192.168.12.1 with 32 bytes of data:
Reply from 192.168.12.1: bytes=32 time=1ms TTL=127
Reply from 192.168.12.1: bytes=32 time<1ms TTL=127
Reply from 192.168.12.1: bytes=32 time<1ms TTL=127
Reply from 192.168.12.1: bytes=32 time<1ms TTL=127
Ping statistics for 192.168.12.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top

11. Graphs (If Any): Image /Soft copy of graph paper to be attached here :

N/A

Learning outcomes (What I have learnt):

1. I have learnt about Cisco packet tracer.
2. I have learnt about how assign address to pc.
3. I have learnt about ping Command.
4. I have learnt about Switch.
5. I have learnt about router.