**Experiment No. - 1.1**

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**Semester:**  **5th Date of Performance: 13/08/2022**

**Subject Name: COMPUTER NETWORKS LAB**

**Subject Code: 20CSP-342**

1. **Aim:**

Build and configure the basic computer network on Cisco Packet Tracer.

1. **Task to be done:**

To build and configure the basic computer network on Cisco Packet Tracer.

**3. Applications:**

# An IP address is a 32-bit number that uniquely identifies a host (computer or other device, such as a printer or router) on a TCP/IP network.

# A layer 2 switch is a type of network switch or device that works on the data link layer to connect and transmit data in a local area network.

# The Cisco IOS is a package of routing, switching, internetworking and telecommunications functions integrated into a multitasking operating system.

# Requirements:

# PC.

# Cisco Packet Tracer Software.

# 4. Steps for the practical:

# a) Basic network

# Open Cisco Packet Tracer on your pc.

# In the bottom left corner select “End Devices”. Drag and drop the PC(s) on your workspace.

# Click on a PC Select → Desktop → IP Configuration → write a valid IP address address bar→ Click on Subnet mask area to get your subnet mask.

# Repeat for each PC. Keep the host id same for all, just change the network id.

# Now, Select “Network devices” from bottom left corner→ Select “switches” in it →drag and drop the switch to your workspace.

# Now select “Connections”. If you know the right cable connection then select it and establish a connection between devices. If you are not aware about the right connection then you can select the ‘automatically choose connection type option.

# Wait for the arrows to turn green.

# From the Secondary toolbar “Add a simple PDU” and set the end users. The task result will be shown in bottom right corner as either failed or successful. Forsimulation, change to simulation and click play.

# b) Basic network with a switch

# In real-time environment, select three end devices(PCs/Laptops).

# Connect the PCs using a network device(switch- 2960) in between.

# Establish a connection using the automatic wire selection otherwise using suitable straight through or cross over links(Fast Ethernet).

# For data flow it is necessary to provide the PCs with appropriate IP address.

# Click on an end device. Select desktop option and then click on IP configuration icon and enter appropriate IP address. The subnet mask will automatically get generated. Rename the PCs with same IP addresses for more understanding.

# Now select the message option and drop on sender and receiver end devices one by one. One along the PCs and one along PC to Laptop.

# Messages are sent successfully. Verify the same by running it on the simulation environment and check whether message sending is successful.

# Delete the messages by clicking on the left arrow button on the bottom right corner and click delete to delete the messages selected for transmission.

# 5. Result/Output

# a)Basic network

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# b) Basic network with a switch

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# Learning outcomes (What I have learnt):

# 1. Basic concepts of computer networks

# 2. Hands-on on Cisco Packet Tracer

# 3. About IP address

# 4. About Cable connections