**EXPERIMENT 3 LAB REPORT**

**NAME: RAHIL SHARMA**

**PRN: 18070123062**

**BATCH: 2018-2022**

**DIVISION: G2; EA 3**

**AIM:** To connect computers in star topology using a switch.

**APPARATUS:** PCs, Switch, Straight through cables, tester.

**Theory:** The star topology is the most commonly used architecture in Ethernet LANs. A central device (hub) connects hubs and nodes to the network. Each node connects to its own dedicated port on the hub. Hubs broadcast transmitted signals to all connected devices. You can connect multiple hubs to form a hierarchical star topology.

**Software Used:** In this lab we have made use of the Cisco Packet Tracer.

Packet Tracer is a cross-platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using a simulated command line interface.

**Procedure:**

1. Open Cisco Packet Tracer
2. From the lower menu select switch and then select 2850-24 switch.
3. Then from the lower down menu in end devices menu, Select 6 PCs.
4. After adding the PCs, assign a suitable IP address to all the PCs.
5. Then from the connections menu, select copper straight wire and make suitable connections. Right Click on the PC and then Right Click on the switch to make the connections.
6. After making the suitable connections, add a Simple PDU from the top bar menu to PC0, Main Switch (HUB) and PC5.
7. Then Run the simulation and take a screenshot of the simulation.
8. Make a report and record your observations.

**Screenshots of the simulation:**

Diagram

Description automatically generated

**Graphical user interface, application

Description automatically generated**

**Graphical user interface, diagram

Description automatically generated**

**Advantages:**

1. Easy to modify and add new computer to a star network without disturbing the rest of the network
2. Ease of diagnosis of network faults through the central computer
3. Single computer failure do not necessarily bring down the whole star network
4. Use of several cable types in the same network

**Disadvantages:**

1. Requires more cable length than a linear topology.
2. If the hub or concentrator fails, nodes attached are disabled.
3. More expensive than linear bus topologies because of the cost of the concentrators

**Conclusion: From this experiment we have learnt how to design and simulate star topology architecture on CISCO PACKET TRACER.**