Name: Boddu Venkata Sai Bhuvan UGID: 21WU0102038

LAB 1 REPORT

TASK ASSIGNED: To design bus, mesh, star, ring, and tree topology.

Platform used: Cisco packet tracer.

Required Components:

1. LANs
2. Switches
3. Connection type
4. Copper straight through

Topologies to be performed:

1. Bus topology
2. Mesh topology
3. Star topology
4. Ring topology
5. Tree topology

Explanation:

1. Bus topology: It is a type of topology in which all the connections are connected to a single lane. Here this lane is called a bus. here, the data will be carried out through this bus and this bus here is responsible for every single data transfer. It can also be called line topology.

   To design bus topology, we must select multiple computers, switches, and lightning cables. In this we will connect the computers to switches with lightning cables and connect the switches. So that all the computers will relate to each other. Here, only the switches will be connected not the computers directly. After the connection is successful we need to add a simple PDU to the design to test it.

2. Mesh topology: In this we will have all the computers interconnected with each other in this network. The data in this can be transferred through routing and flooding. In this we can transfer data to any specific device of multiple devices at same time. It will allow huge amounts of traffic.

   To design mesh topology we need multiple computers and switches where all the computers will be connected to one switch each and all the switches will be inter connected. In this we can share data to any computer we want after the connection we will connect it t the PDU to test.

3. Star topology: This is a type of topology where all the computers will be connected to a common switch and can share the data with each other. Here the switch is the server, and the

computers act like client. If there are more computers connected, then the performance will be decreased.

To design the topology, we need multiple computers and one switch to connect them. When we use this topology, we can share information quickly and if the no of computers increases then the performance will decrease eventually.

4. Ring topology: In ring topology we need to connect each computer with two other computers on its right and left. So, each computer will be connected to two other computers. In this the data will be transferred in only one direction. The data will keep forwarding from one device to another until it reaches the destination. In bidirectional ring the data can travel in both the directions.

   To design this topology, we need multiple computers, and each computer will be connected to two other computers. In this each computer will be connected to a switch and the switches will be interconnected. The ring may be uni or bi directional.

5. Tree topology: It is a type of network topology where there can be only one connection between two nodes which are connected. It has the reminiscence of bus topology and star topology.

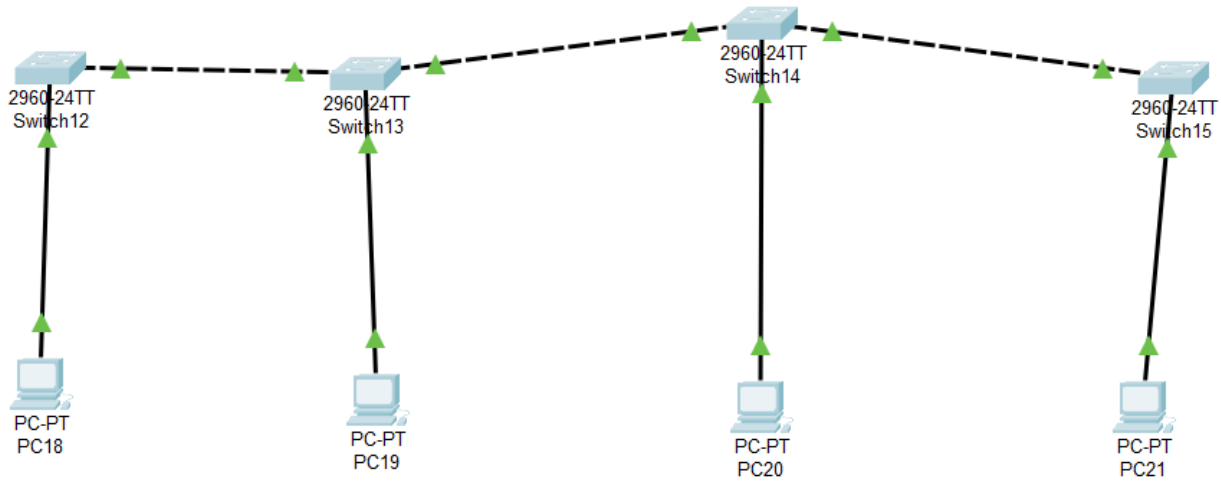
   To design this topology we need multiple switches and computers. every switch which we choose will be connected to each other and it will be connected to computer. Finally we will add a PDU to test.

Name: Boddu Venkata Sai Bhuvan UGID: 21WU0102038

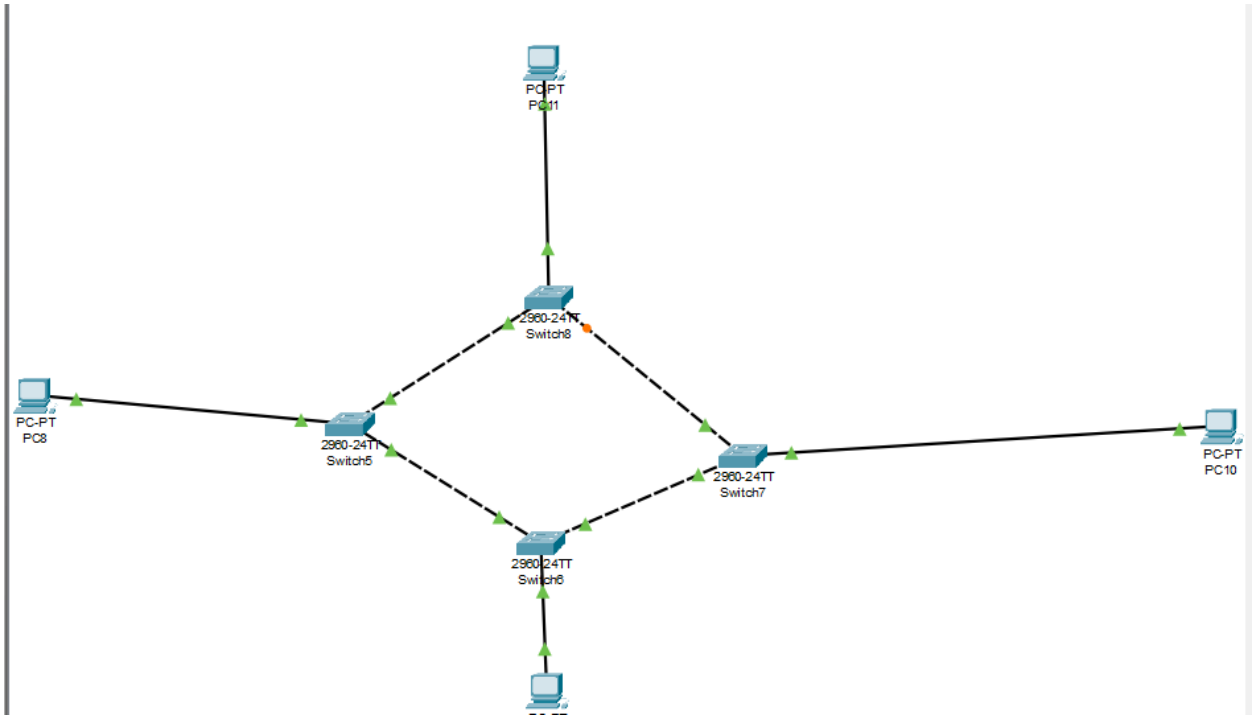
LAB 1 REPORT

Simulation results:

1. Bus topology:



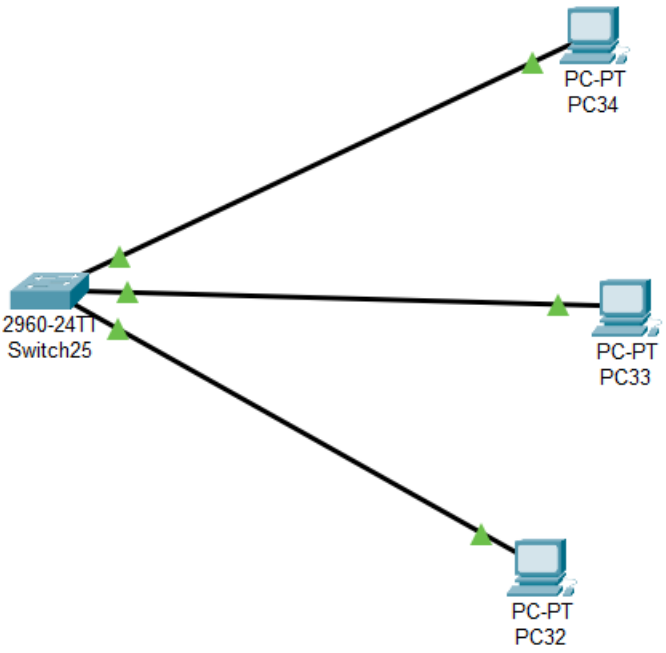
2. Mesh topology:



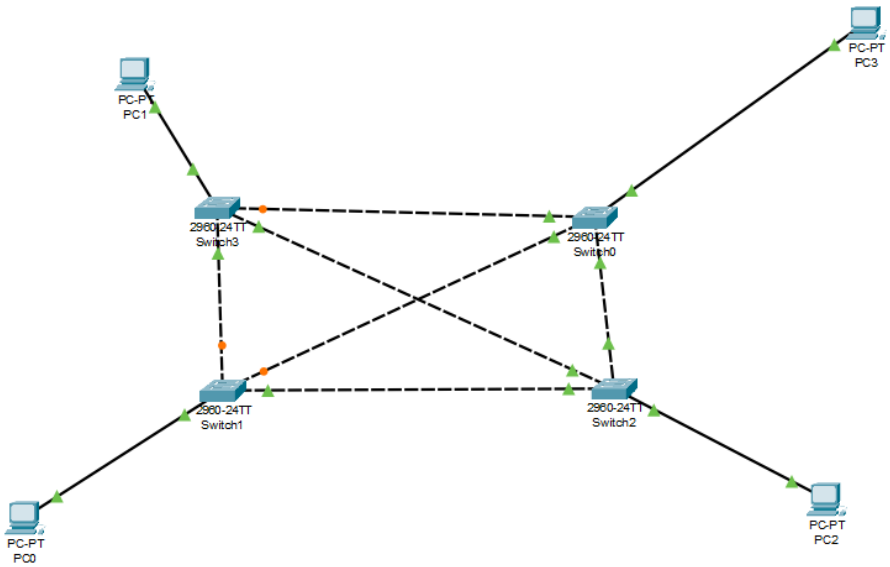
Name: Boddu Venkata Sai Bhuvan UGID: 21WU0102038

LAB 1 REPORT

3. Star topology:



4. Ring topology:



Name: Boddu Venkata Sai Bhuvan UGID: 21WU0102038

LAB 1 REPORT

5. Tree topology: