

NAME -  
UID -  
SEM - 4<sup>TH</sup>  
BRANCH - BTECH CSE  
SUBJECT - CN LAB  
DATE - 22 MARCH 2022

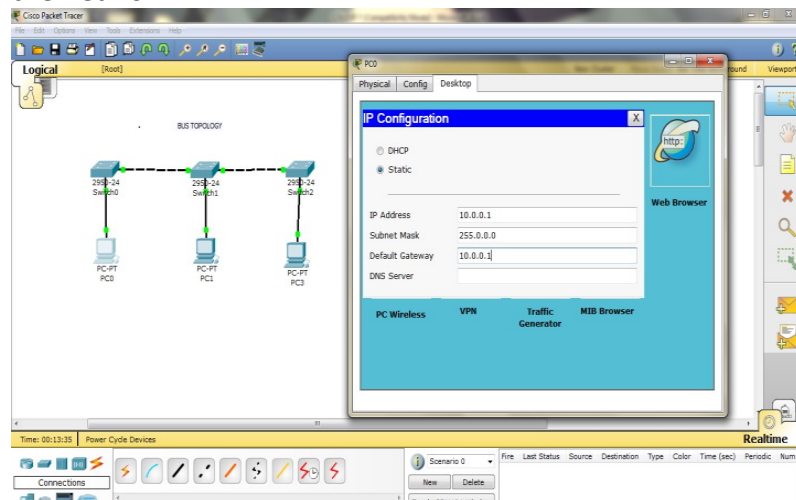
Q- Implement different network topologies like Star, Bus, and Ring Topology with the help of packet tracer or NS2 software.

Network topology is the geometric representation of relationship of all the links connecting the devices or nodes. Network topology represent in two ways one is physical topology that define the way in which a network is physically laid out and other one is logical topology that defines how data actually flow through the network. In this paper we have discuss how to design bus, star and mesh topology network and provide interfacing and simulation between end points using packet tracer software.

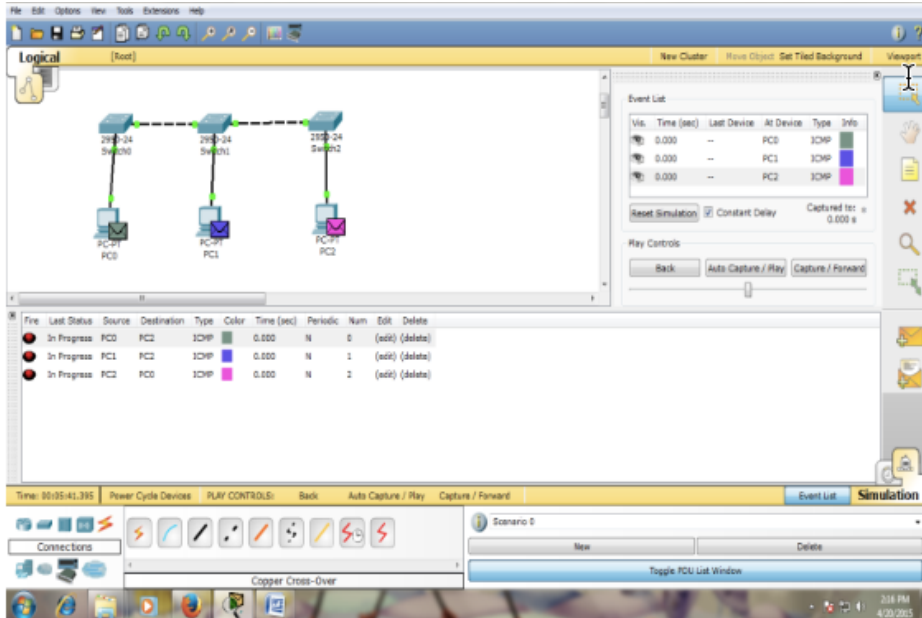
## DESIGNING OF TOPOLOGY

- **Bus Topology**

In local area network, it is a single network cable runs in the building or campus and all nodes are connected along with this communication line with two endpoints called the bus or backbone. In other words, it is a multipoint data communication circuit that is easily control data flow between the computers because this configuration allows all stations to receive every transmission over the network

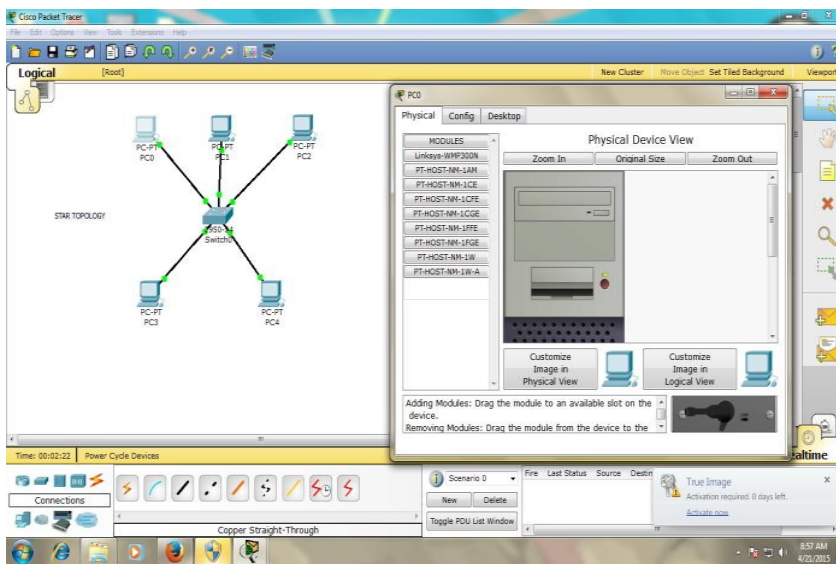


- SIMULATION OF BUS TOPOLOGY-

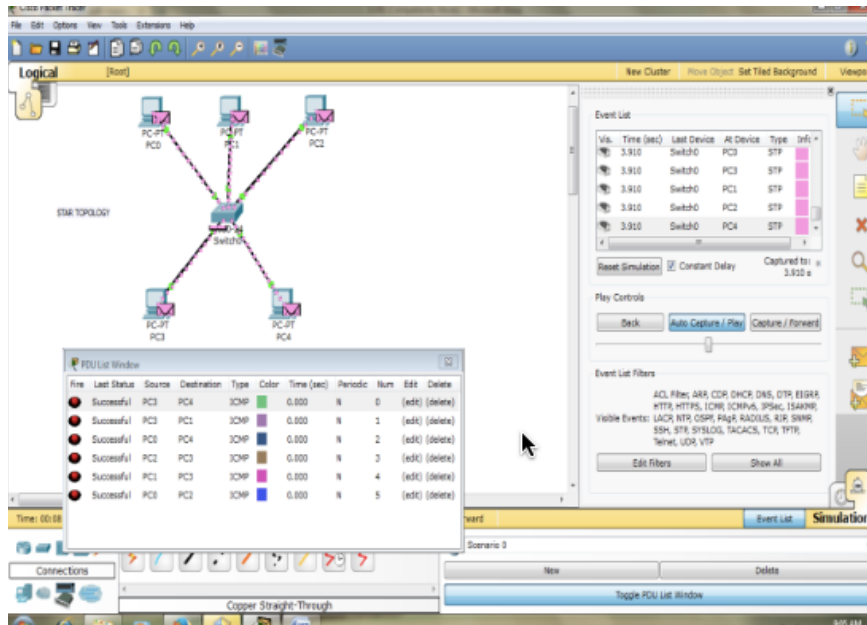


- Star Topology

In star topology, all the cables run from the computers to a central location where they are all connected by a device called a hub. It is a concentrated network, where the end points are directly reachable from a central location when network is expanded.



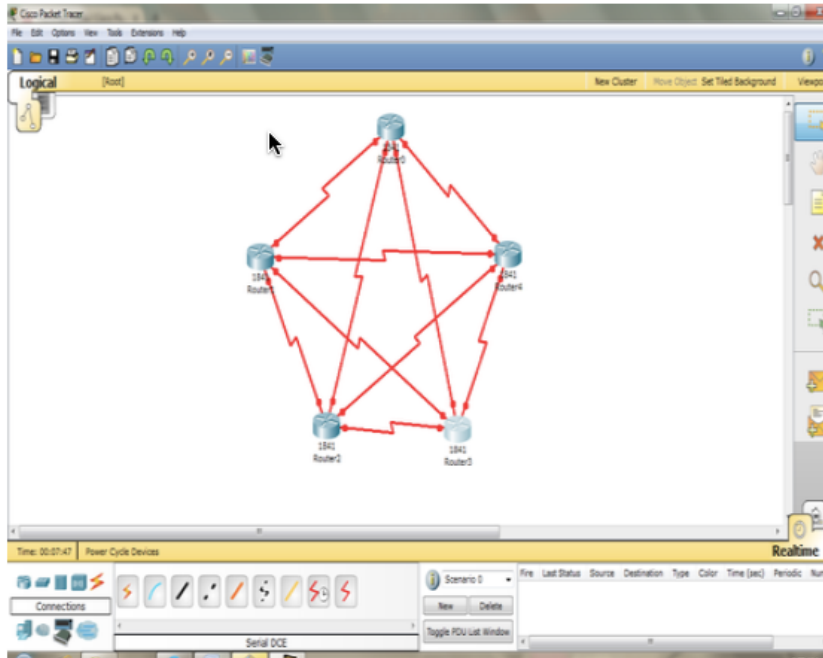
- SIMULATION OF STAR TOPOLOGY-



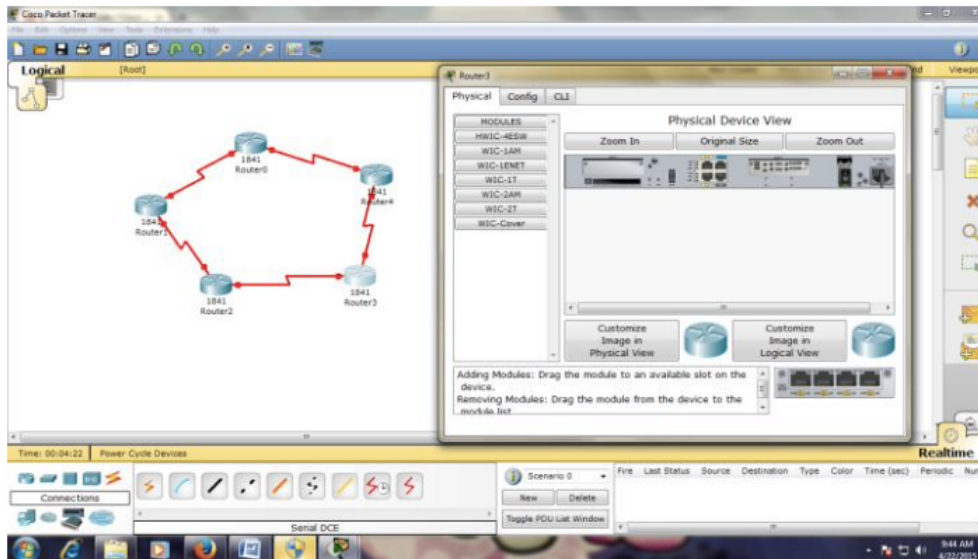
- Mesh Topology

In mesh topology every device has a dedicated point to point link to every other device. The term dedicated stand for link carries traffic only between two devices it connects. It is a well-connected topology; in this every node has a connection to every other node in the network. The cable requirements are high and it can include multiple topologies. Failure in one of the computers does not cause the network to break down, as they have alternative paths to other computers star topology, all the cables run from the computers to a central location.

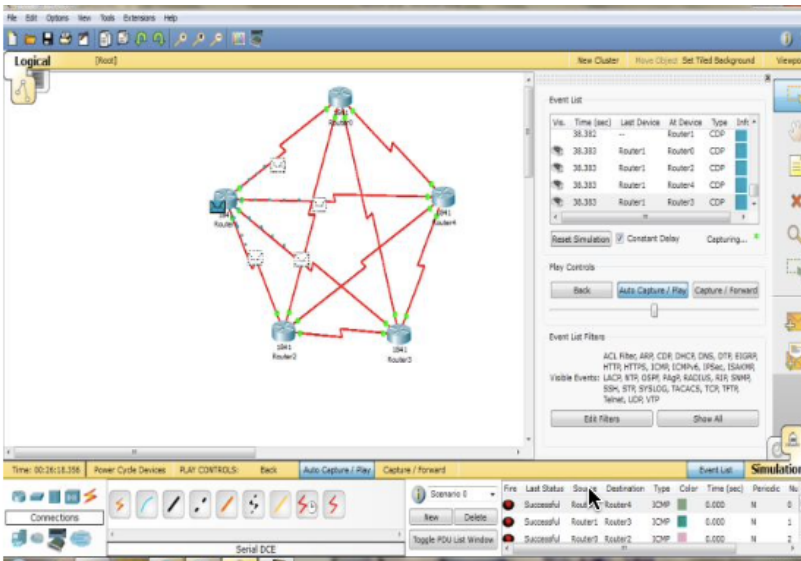
- DESIGNING MESH TOPOLOGY



- CONNECTION OF MESH TOPOLOGY.



- **SIMULATION OF MESH TOPOLOGY-**



- **Ring Topology Implementation.**

A ring network is a network topology in which each node connects to exactly two other nodes, forming a single continuous pathway for signals through each node – a ring. Data travels from node to node, with each node along the way handling every packet.

