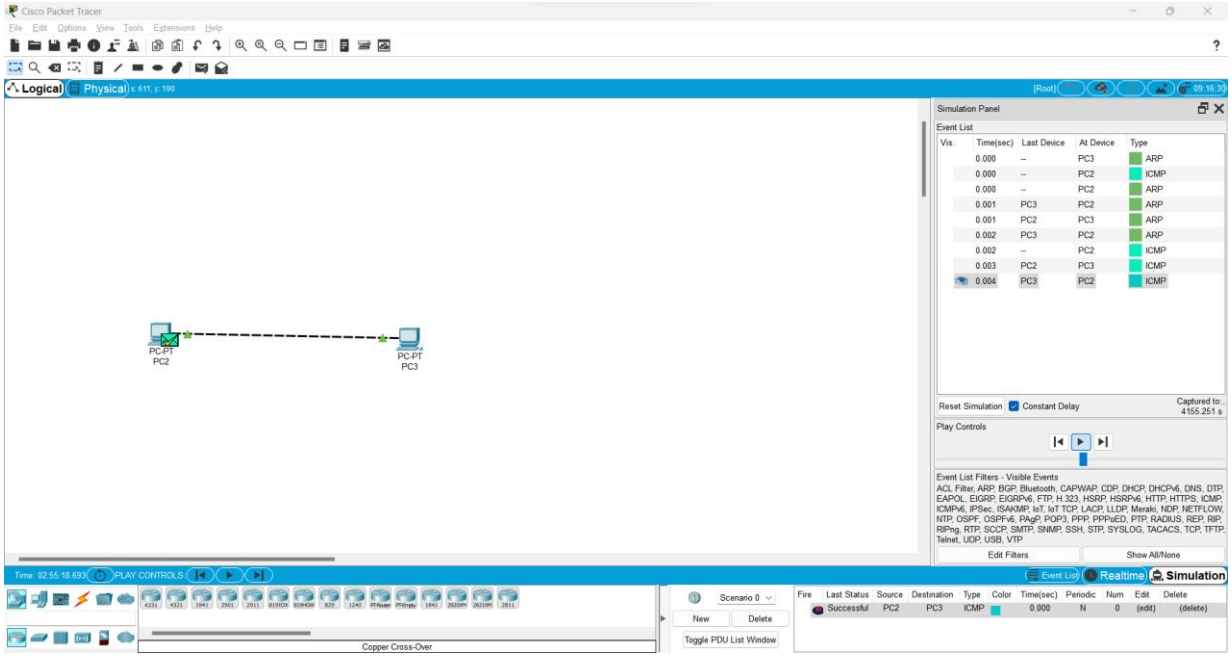
Data Communication and Computer Networks

EXPERIMENT: 3

SAP: 500091008 Name: Aman Gandhi

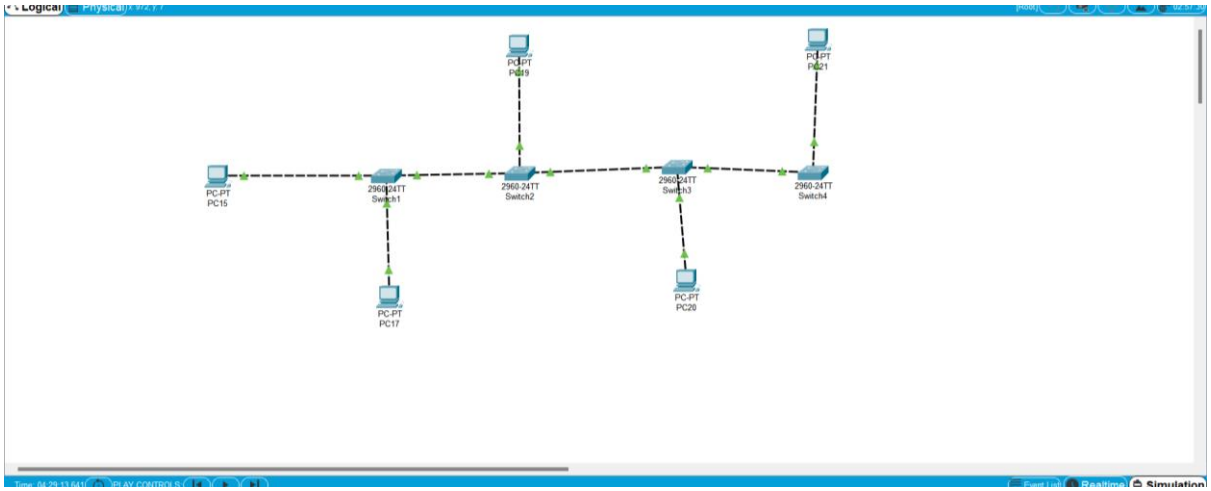
Network Topology: Topology defines the structure of the network of how all the components are interconnected to each other.

Connecting two computers with cross-over cable:



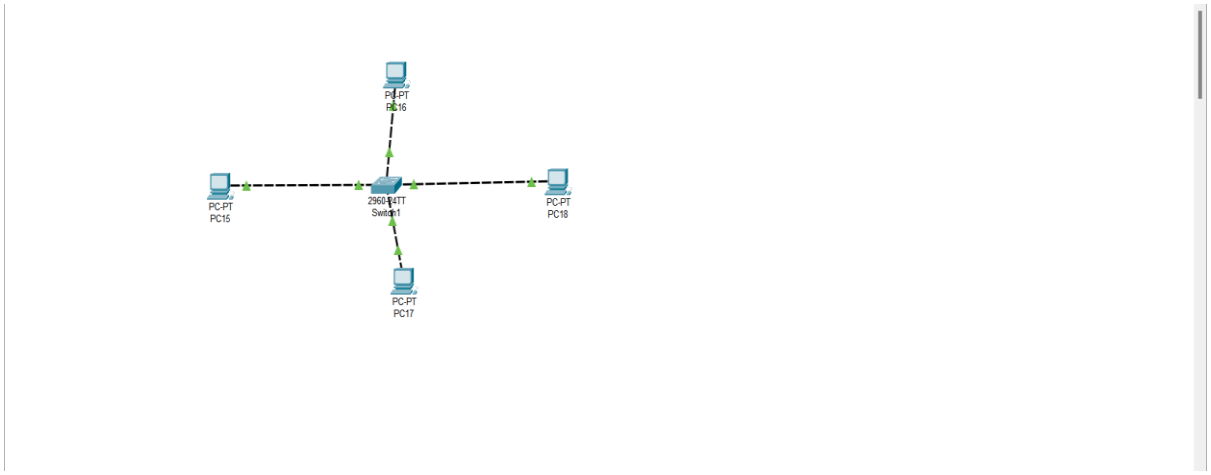
Bus Topology:

In a bus topology, all devices are connected to a single cable, called the bus. Data is transmitted along the bus and is received by all connected devices. A failure in the bus cable can cause the entire network to go down.



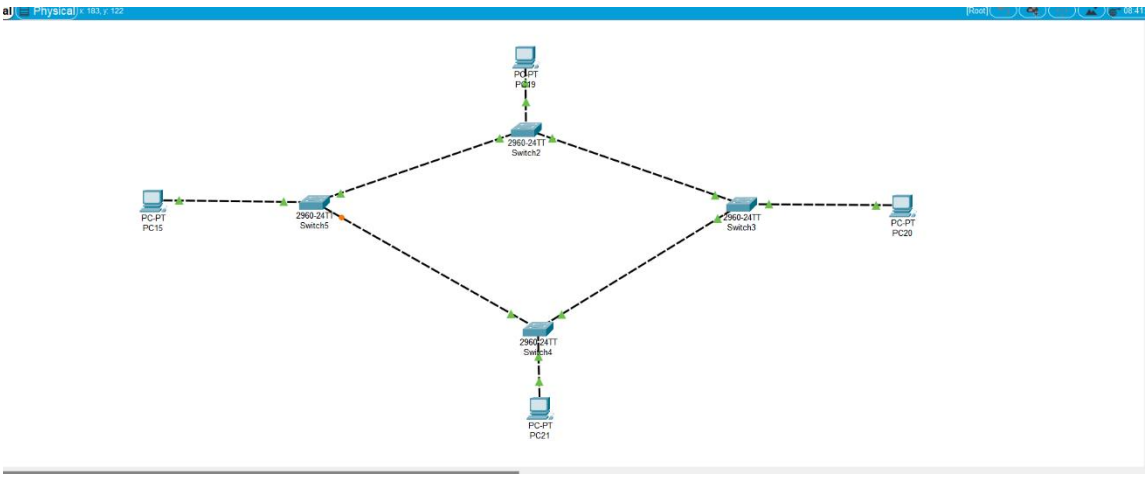
Star Topology:

In a star topology, all devices are connected to a central hub. The hub acts as a central point of connection and controls the flow of data. A failure in the hub can cause the entire network to fail, but a failure in one of the devices will not affect the others.



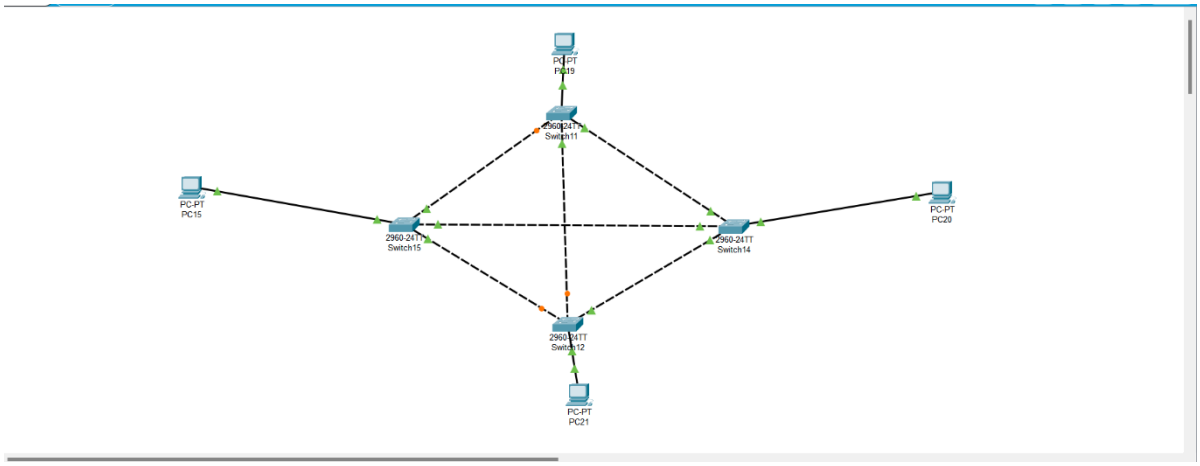
Ring Topology:

In a ring topology, devices are connected in a circular fashion, with data being transmitted in one direction around the ring. Each device acts as a repeater, forwarding the data to the next device in the ring. A failure in any single device can cause the entire network to fail.



Mesh Topology:

In a mesh topology, each device is connected to every other device in the network, creating multiple paths for data to travel. This allows for redundancy and can improve network reliability, but it also increases the complexity and cost of the network.



Hybrid Topology:

The combination of various different topologies is known as **Hybrid topology**. A Hybrid topology is a connection between different links and nodes to transfer the data.