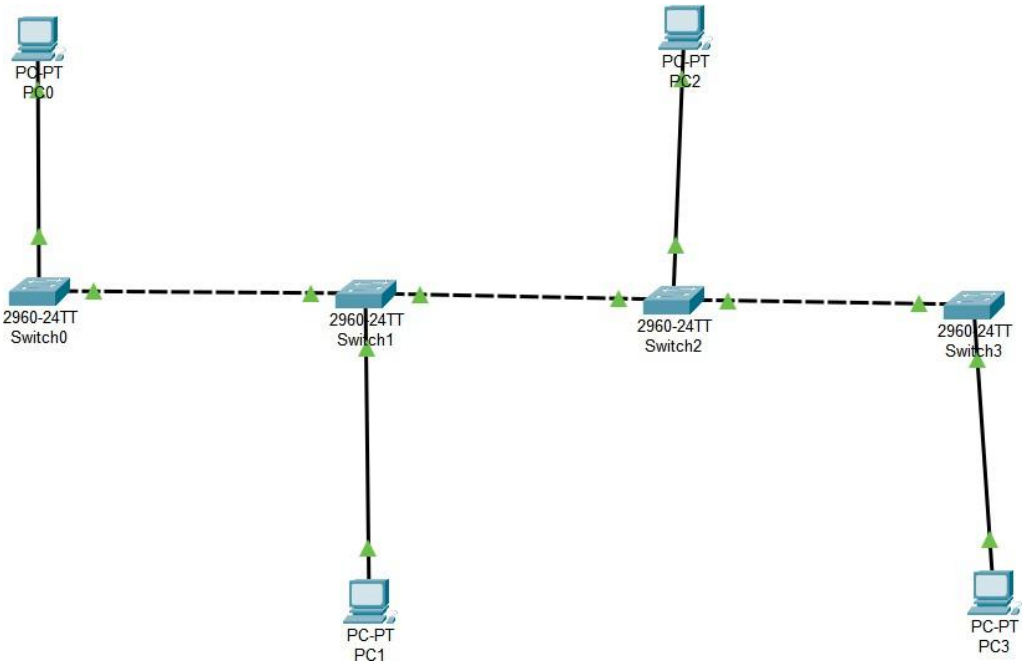
NAME – ABHISHEK AHER

ROLL NO. – AM.EN.U4ECE22013

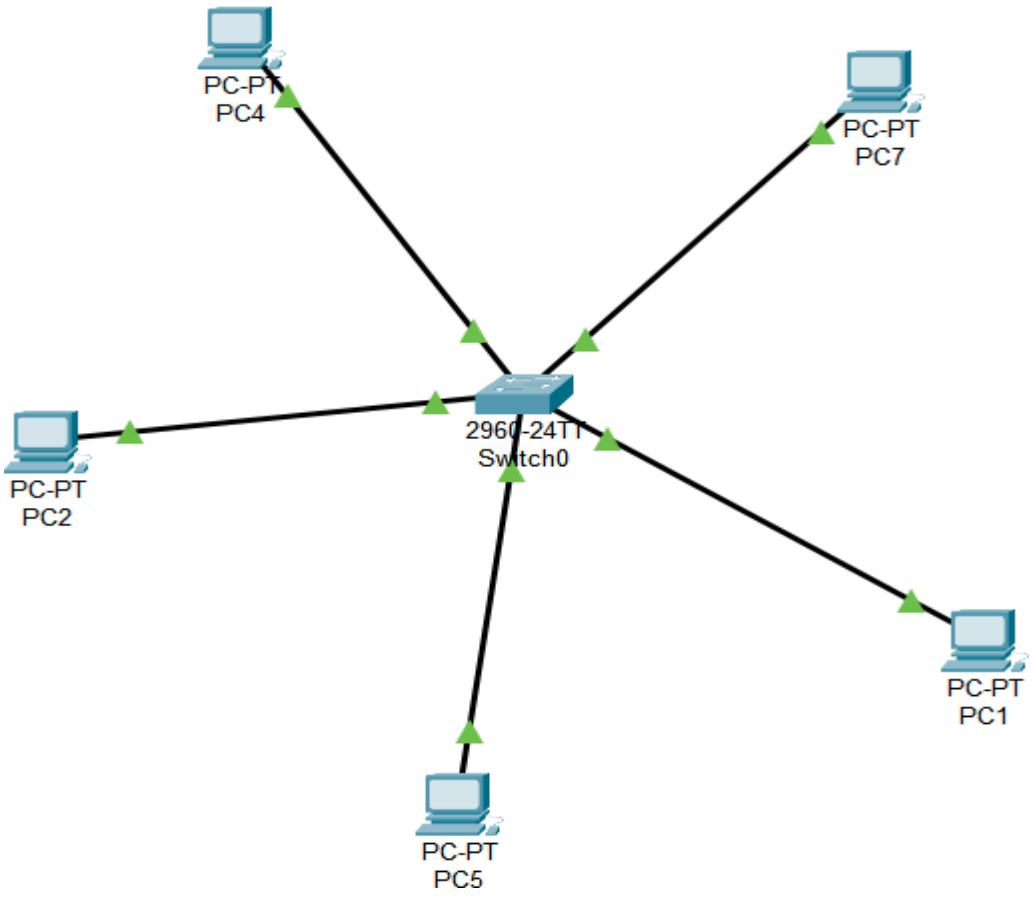
# ASSIGNMENT 1

TYPES OF TOPOLOGY:

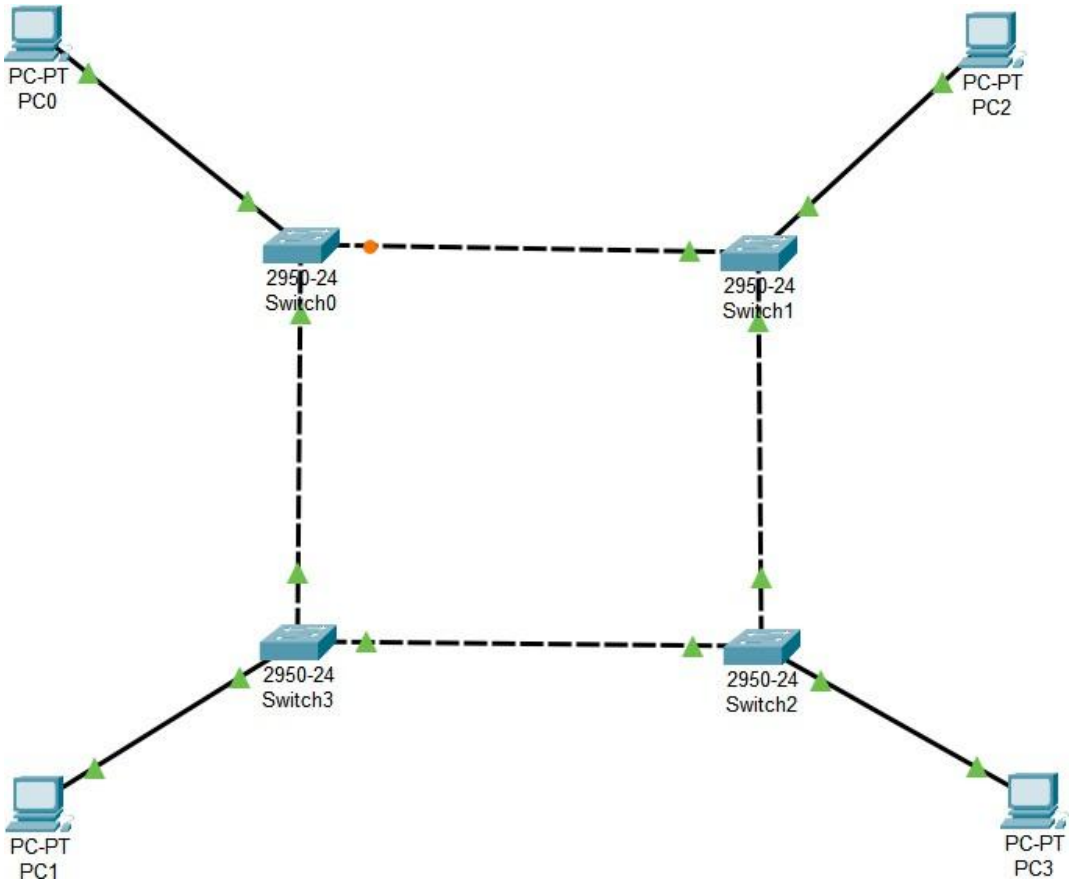
1. BUS TOPOLOGY



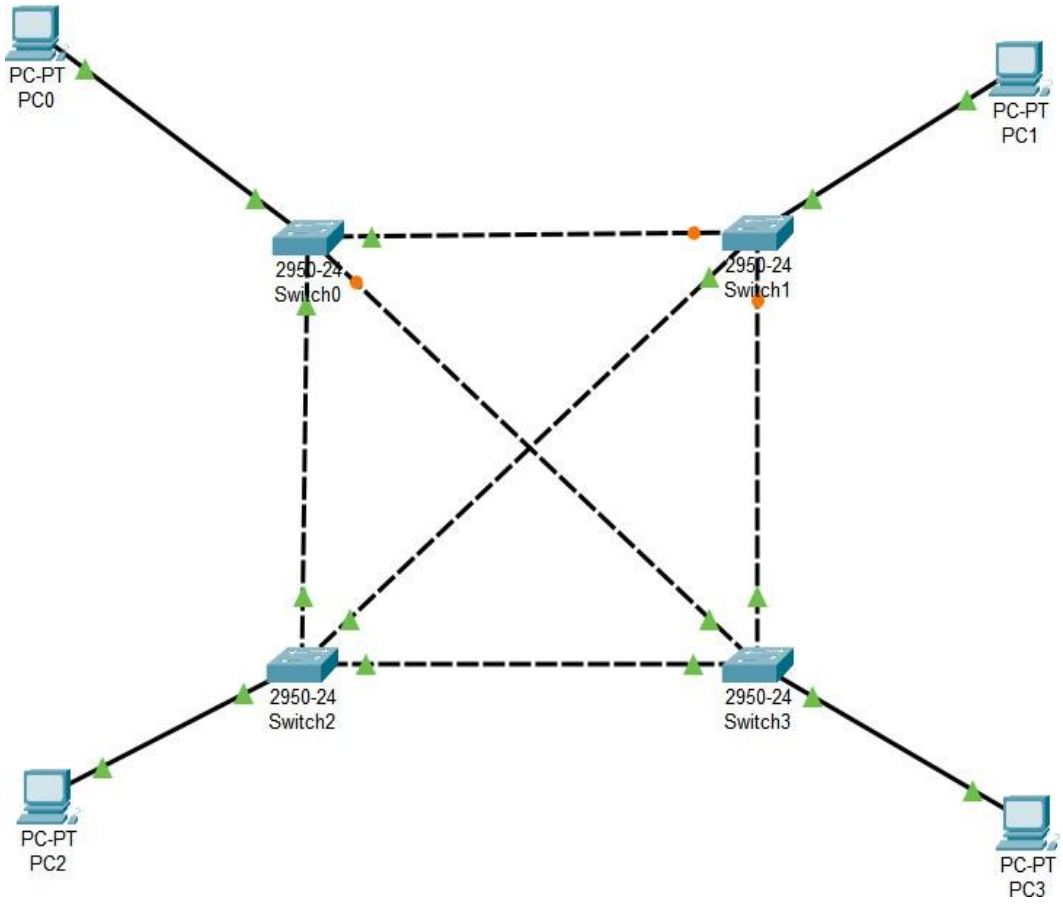
2. STAR TOPOLOGY



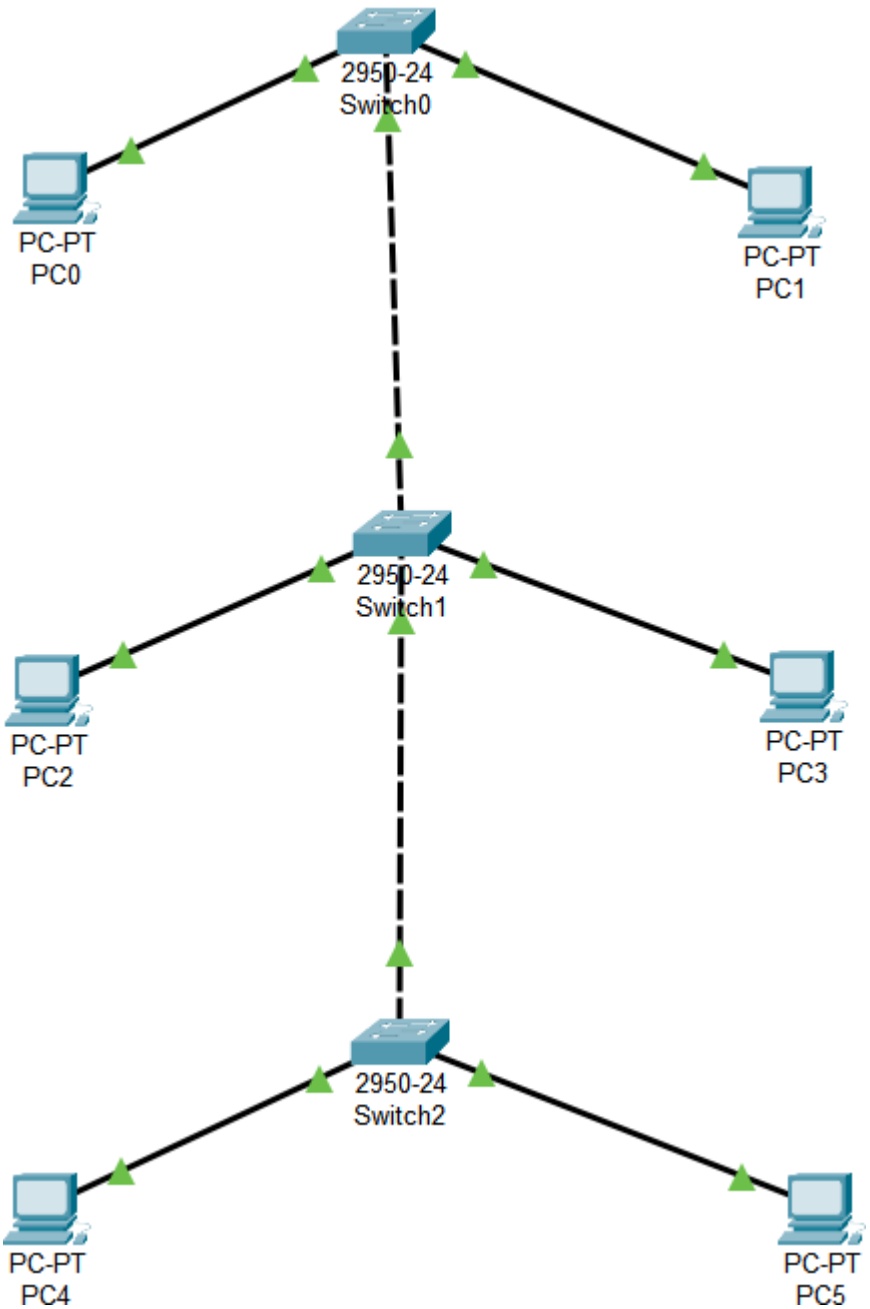
3. RING TOPOLOGY



4. MESH TOPOLOGY



5. TREE TOPOLOGY



**OBSERVATIONS:**

1. Different network topologies (Tree, Star, Ring) were designed in Cisco Packet Tracer.
2. Proper IP addressing and default gateway settings were essential for ensuring end-to-end connectivity.
3. The **Tree topology** used hierarchical switches.
   The **Star topology** used a central switch;
   The **Ring topology** simulated a looped structure with PCs directly interconnected.
4. Each PC was given a different IP address.

**RESULTS:**

1. All devices within the same LAN were able to communicate successfully
2. Tree topology showed a structured, hierarchical communication flow.
3. Star topology exhibited centralized control through a single switch.
4. Ring topology simulation showed successful communication with direct links
5. No packet loss or connectivity errors were encountered after the correct IP and cable setup.

**INFERENCE:**

1. **Proper IP addressing and routing** are crucial for network devices to communicate across different LANs
2. TREE Topology allows easy scalability.
3. Star topology is easy to manage, but relies heavily on the center switch
4. Ring topology can ensure equal access.
5. CPT is useful for visualization and testing different configurations.