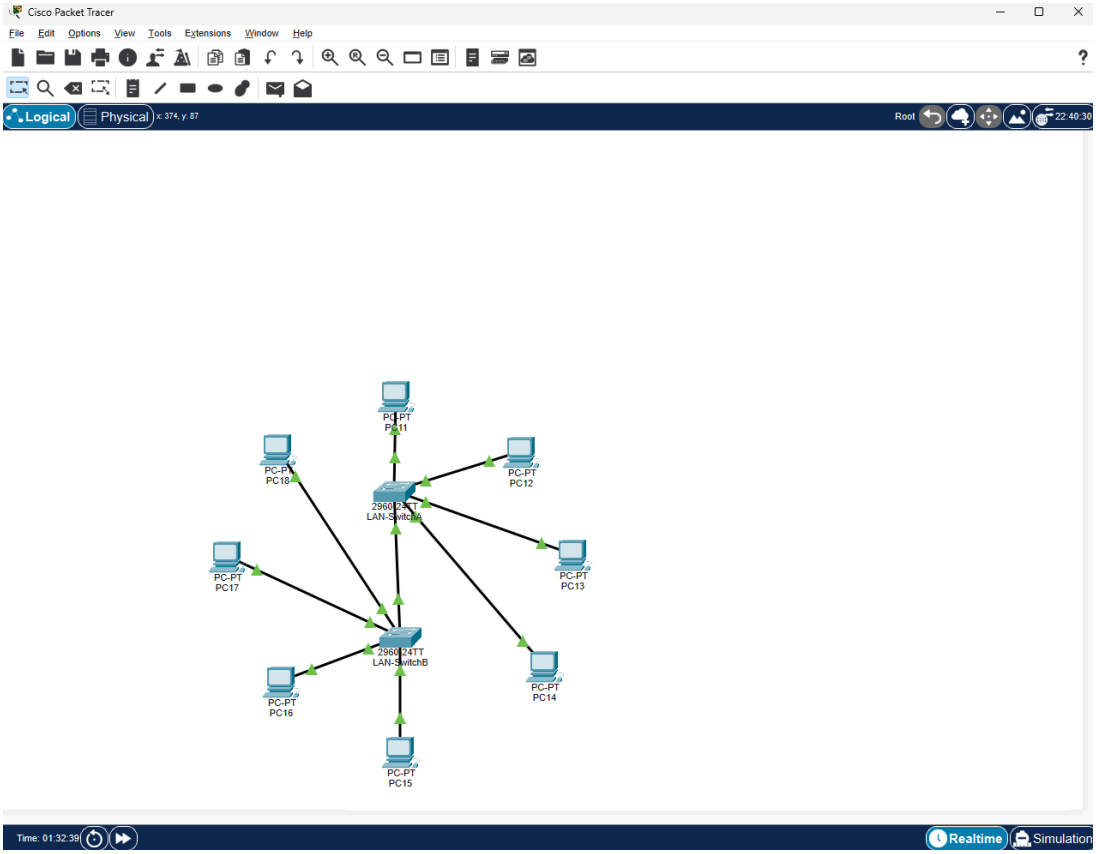
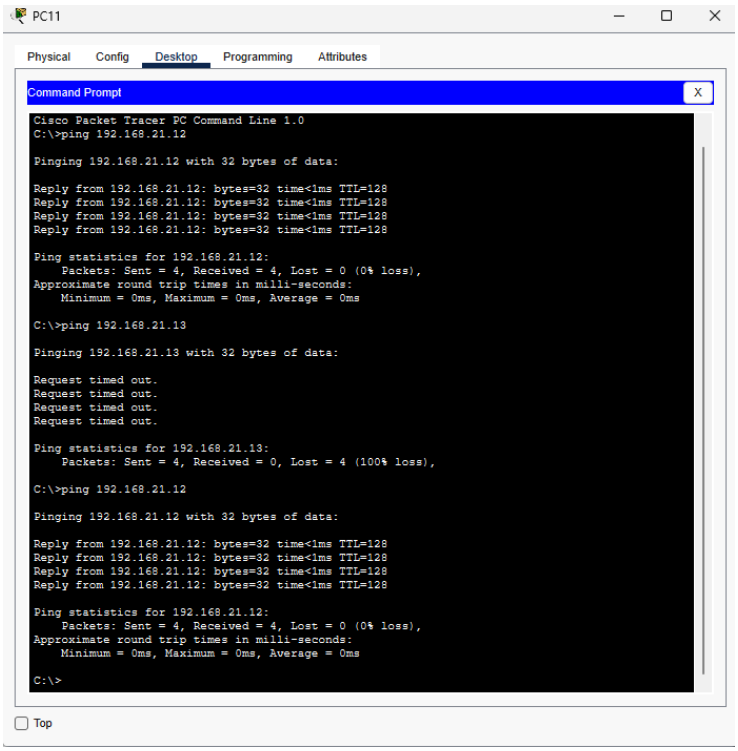
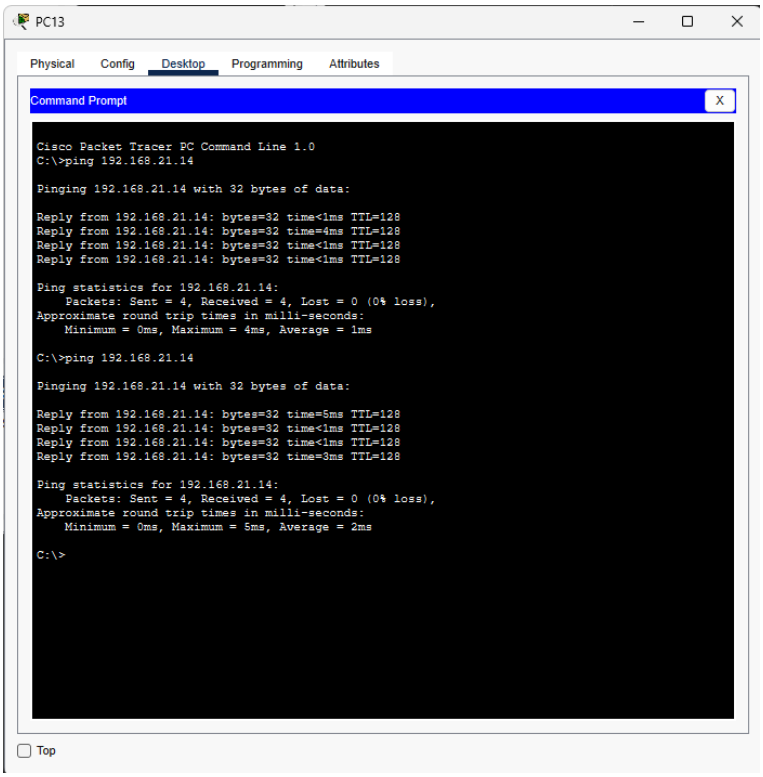
LAB COMPLETED REMOTELY **Network Topology**:

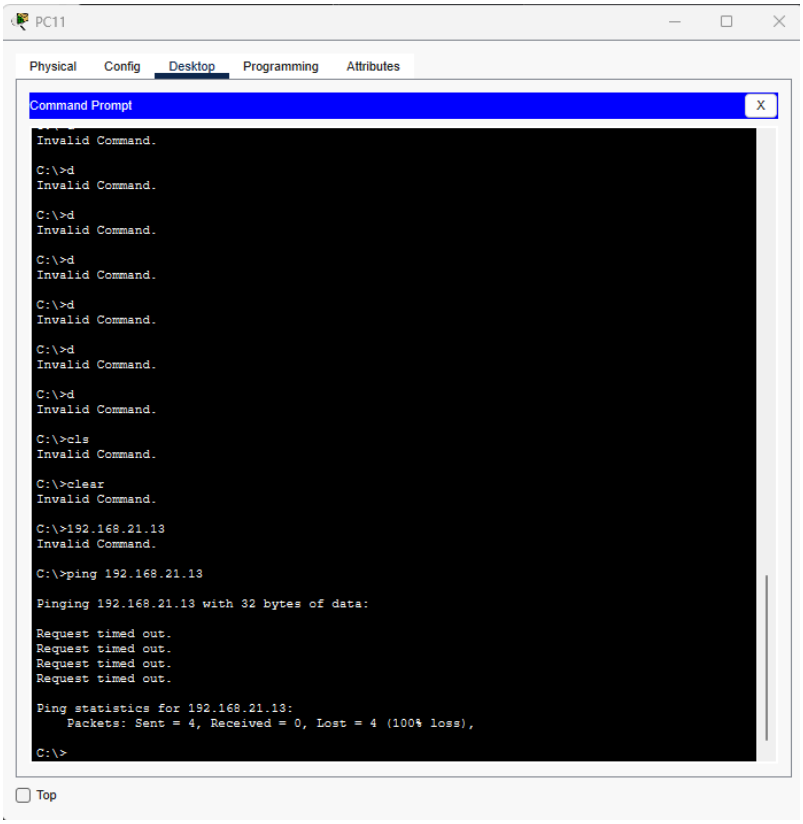


Successful Pings pc – pc same vlan

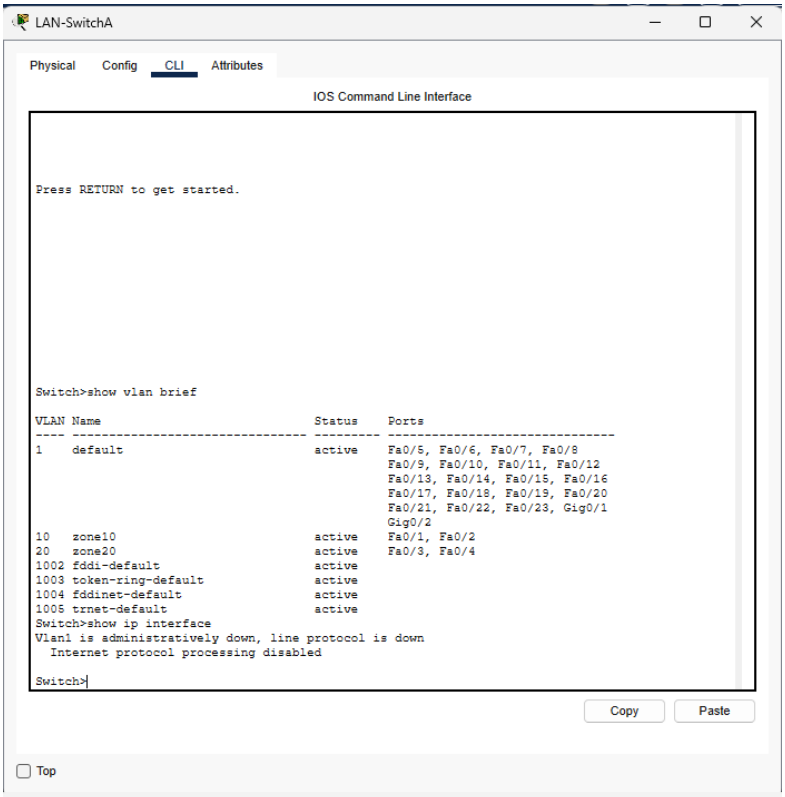


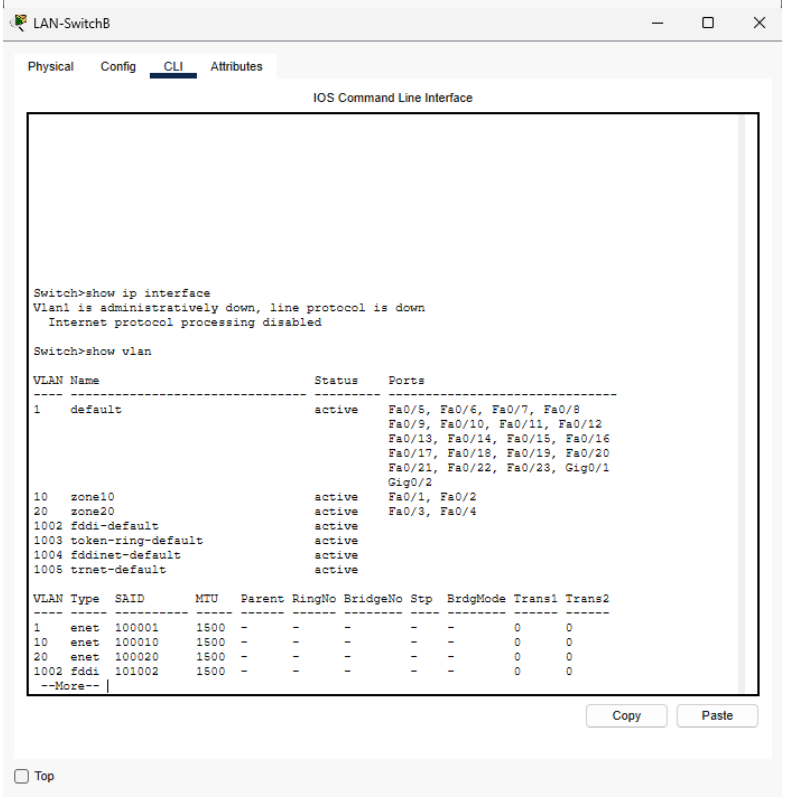


Unsuccessful pc – pc different vlan

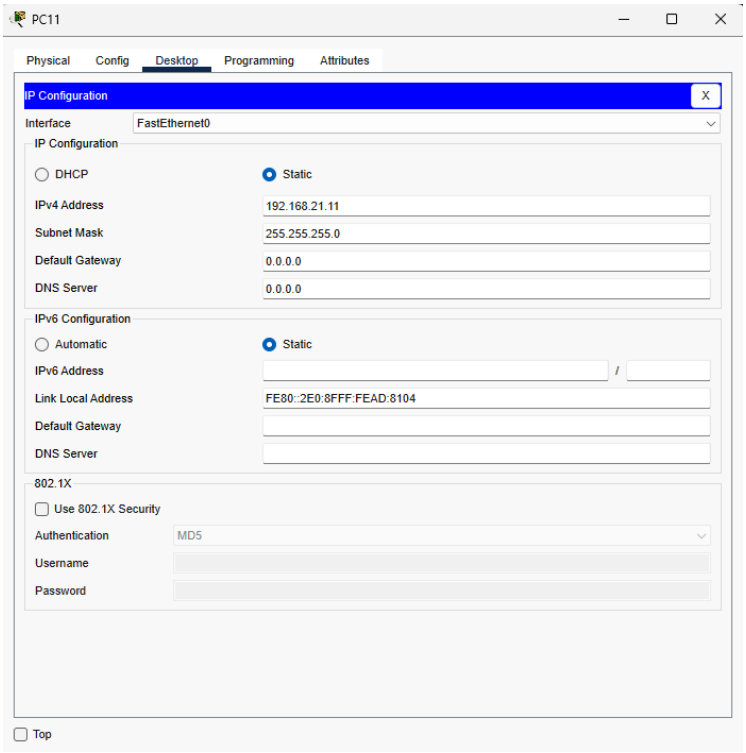


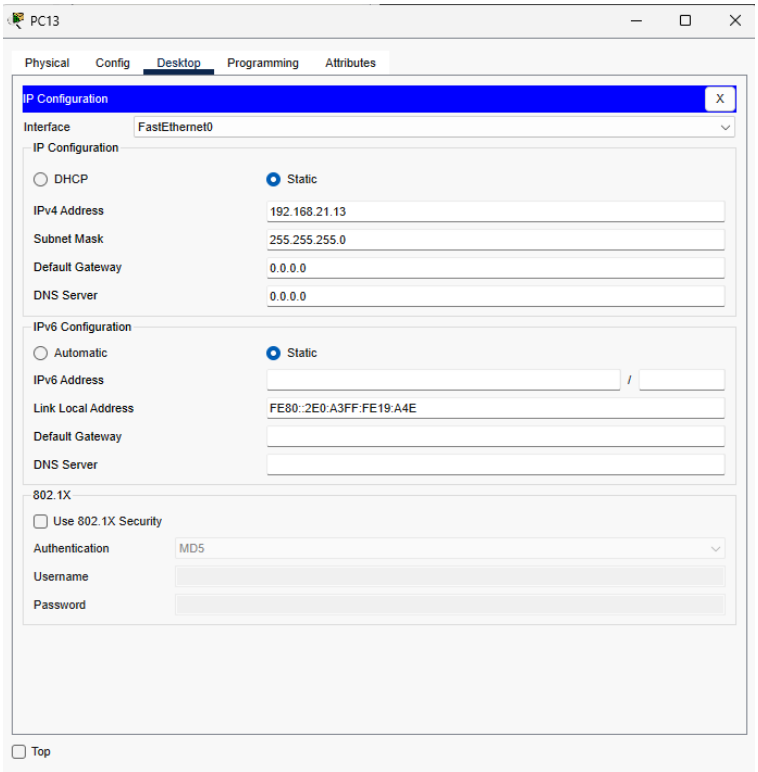
Switch Command Results





Ip Configuration





LAB 4 Questions:

1) What VLAN number value is assigned to the default VLAN?
   The default VLAN is **VLAN 1**
   all unused ports on the switches were assigned to **VLAN 1** by default

2) What is the term used to describe a port that can access multiple VLANs?

   Trunk Port

   a. Why is this type of port necessary?

      A trunk port is necessary to allow communication between devices in different VLANs across multiple switches.

3) What does IEEE stand for?

   IEEE stands for the **Institute of Electrical and Electronics Engineers**.

   This organization develops standards for networking, electronics, and telecommunications.

   a. What IEEE standard covers VLANs?

      The IEEE standard that covers VLANs is **IEEE 802.1Q**

4) What layer of the OSI Model does VLAN tagging take place?

   VLAN tagging takes place at **Layer 2 (Data Link Layer)** of the OSI Model.

5) How and why would this technology be useful in a networking scenario?

   VLANs are useful for logically segmenting a network, improving security, performance, and manageability. In the lab, we created **VLAN 10** and **VLAN 20** to isolate traffic, ensuring PCs in different VLANs couldn't communicate. This reduces broadcast traffic, enhances security, and allows flexible device grouping regardless of physical location. VLANs also simplify network management by making troubleshooting easier. This makes VLANs essential for scalable, secure, and efficient networks.