Date: 8/22/2025

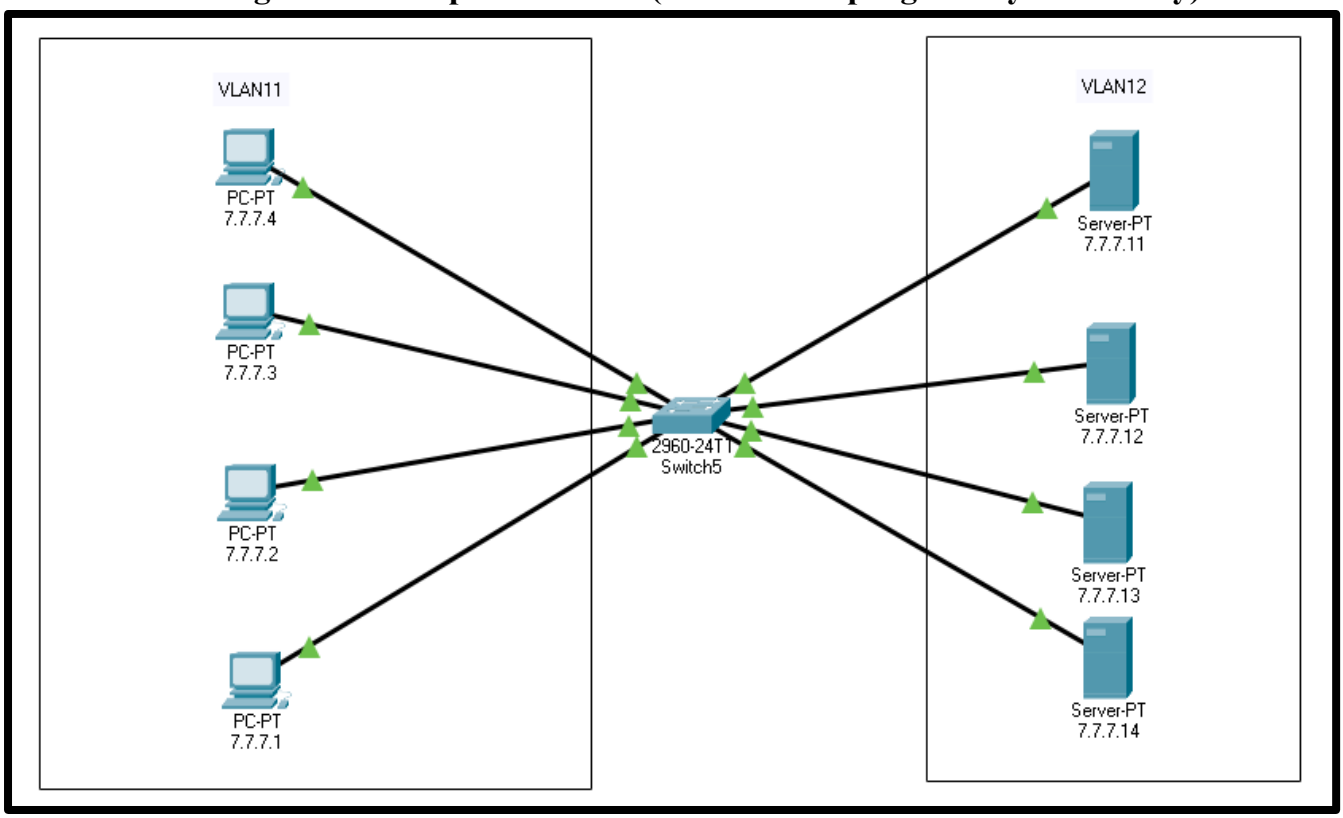
Lab Practical #05:

Study the concept of VLAN using packet tracer.

Practical Assignment #05:

1. **Implement the different network structures in VLAN and VLAN trunking. Also check connectivity between them using ping command or PDU utility.**

1. **VLANs configuration setup screenshot. (VLAN example given by lab faculty)**



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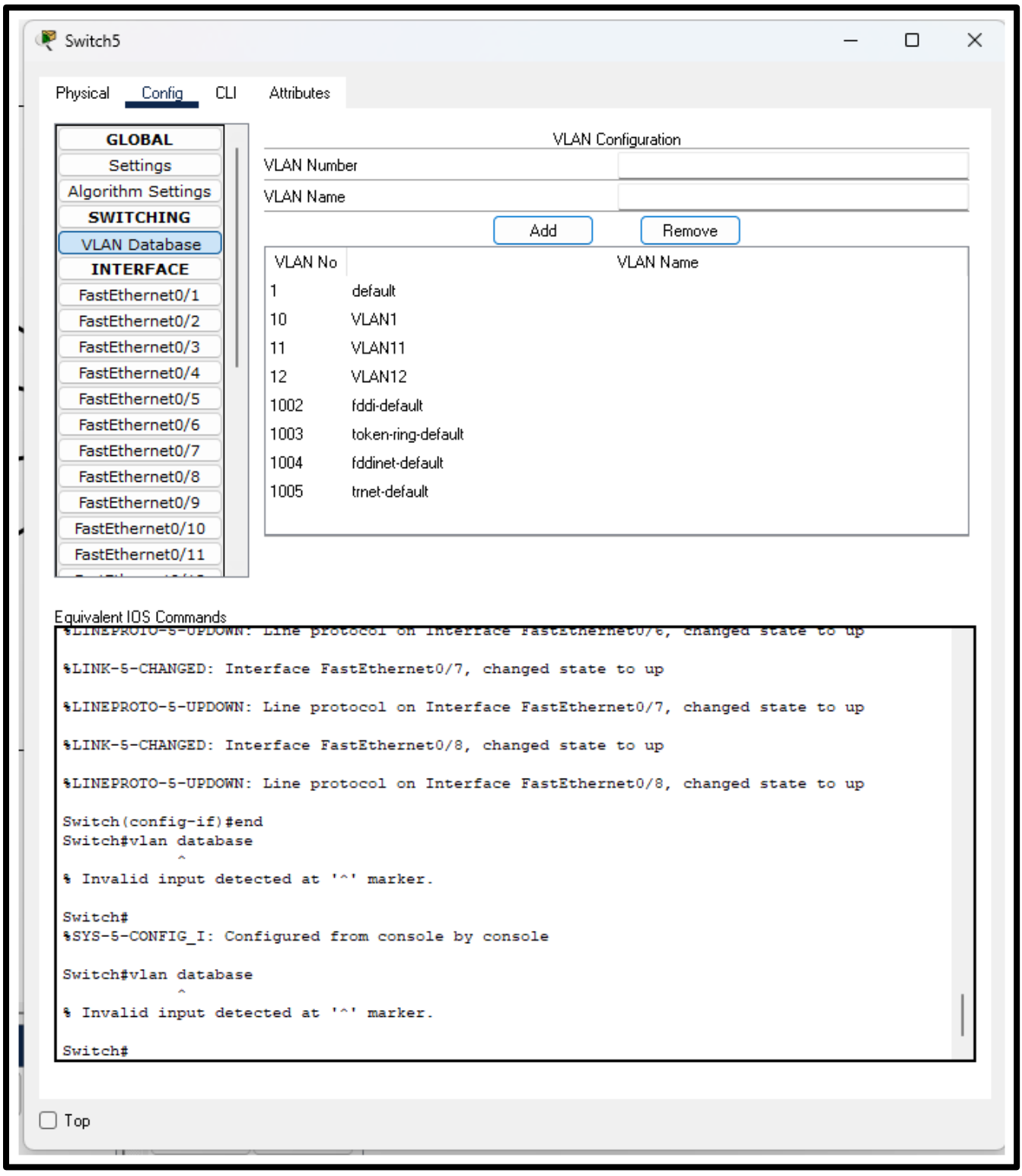
VLAN Database



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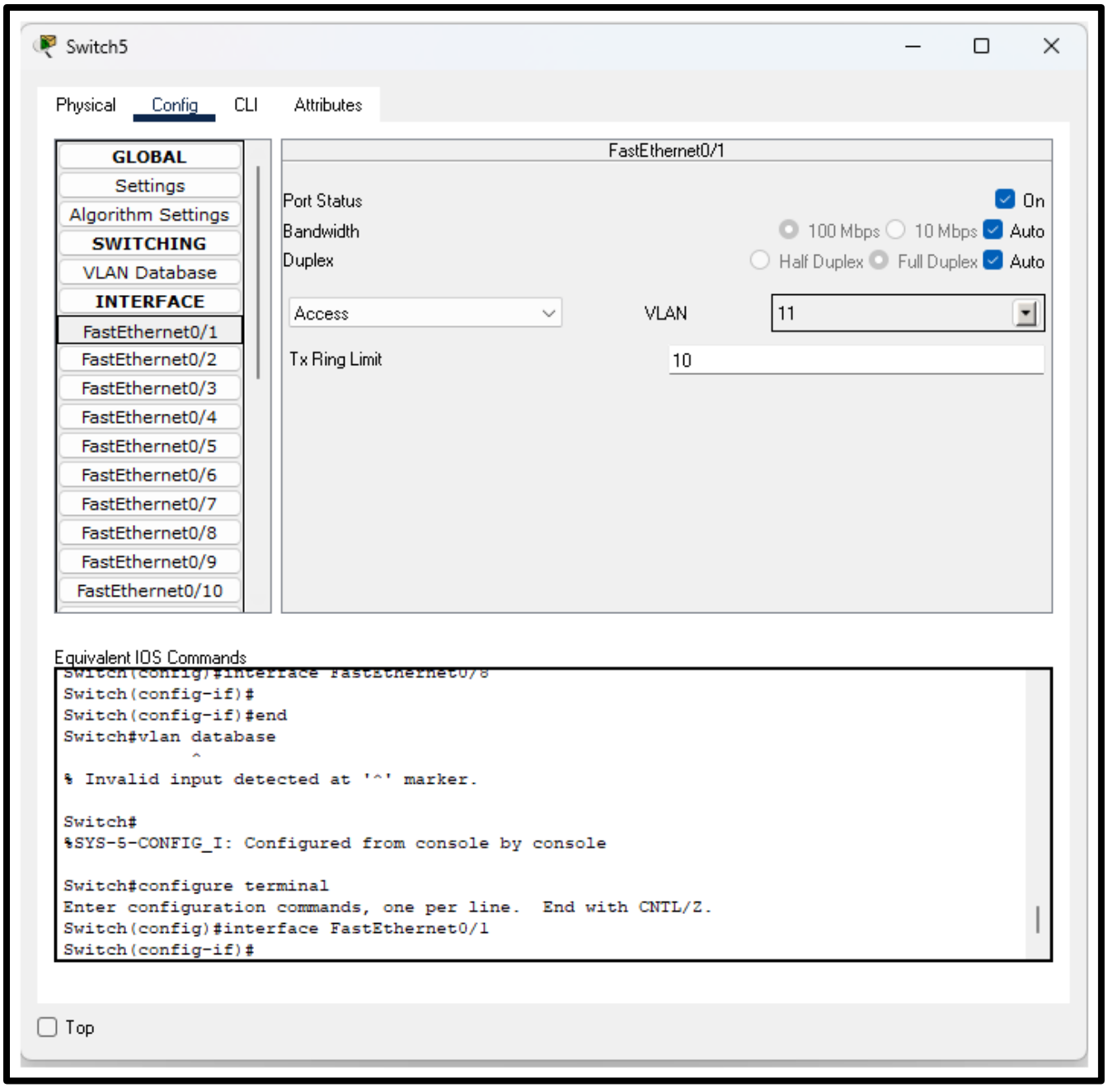
Port



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2. Steps to create VLANs in packet tracer.

1. Open Packet Tracer and Add Devices

- Drag and drop a **2960 Switch** from the network devices section.
- Add some **PCs** and **Servers** to the workspace.
- Connect them to the switch using **Copper Straight-Through cables**.

2. Create VLANs on the Switch

1. Click on the switch.
2. Go to the **Config** tab.
3. From the left panel, click on **VLAN Database**.
4. In the VLAN Number field, type the VLAN ID (e.g., **11**) and give it a name (e.g., **VLAN11**).
5. Click **Add**.
6. Repeat the same process for VLAN 12 (name it **VLAN12**).
7. Now you will see both VLANs listed in the VLAN table.

3. Assign Ports to VLANs

1. In the same **Config** tab, click on **FastEthernet0/1** (or whichever port a PC is connected to).
2. Change **Port Mode** to **Access**.
3. From the VLAN drop-down menu, select **VLAN11** for PCs.
4. Do the same for all other PC ports (assign them to VLAN11).
5. Next, select the ports where servers are connected (e.g., FastEthernet0/5, 0/6, etc.).
6. Set **Port Mode** to **Access** and assign them to **VLAN12**.

4. Configure IP Addresses

- Assign IP addresses to each PC and Server by clicking on the device → **Desktop tab → IP Configuration**.
- Example:
    - PCs in VLAN11: **7.7.7.1 – 7.7.7.4**
    - Servers in VLAN12: **7.7.7.11 – 7.7.7.14**

5. Test Connectivity

- Use the **ping tool** or **add a PDU** to check communication.
- Devices in the **same VLAN** will be able to communicate with each other.
- Devices in **different VLANs** will not communicate unless you configure a router or Layer 3 switch for inter-VLAN routing.

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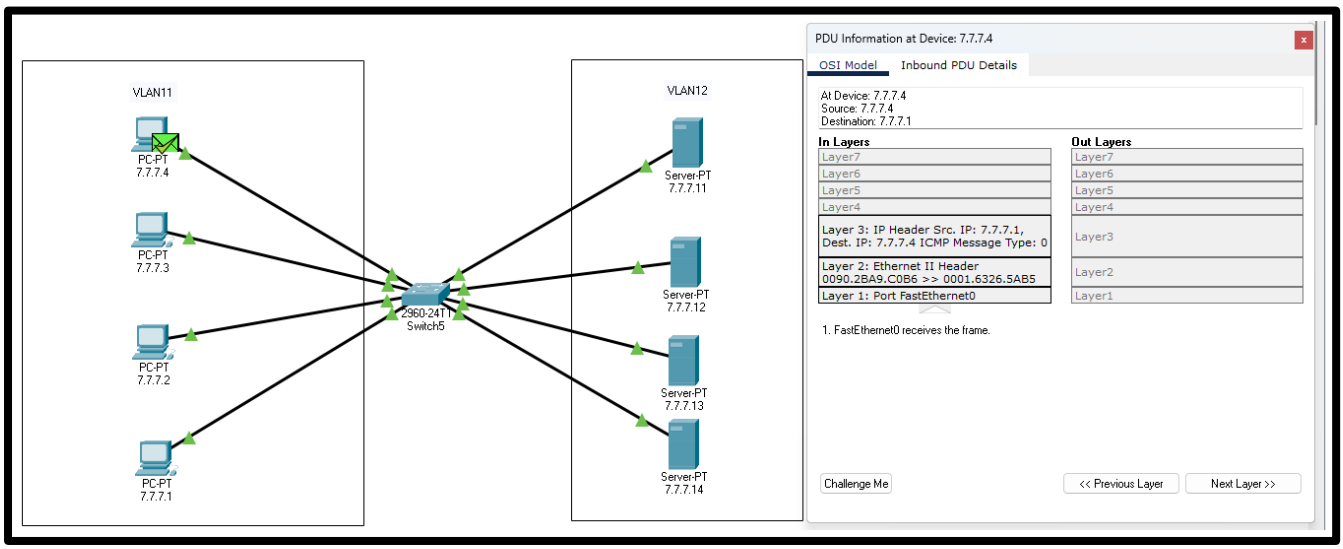
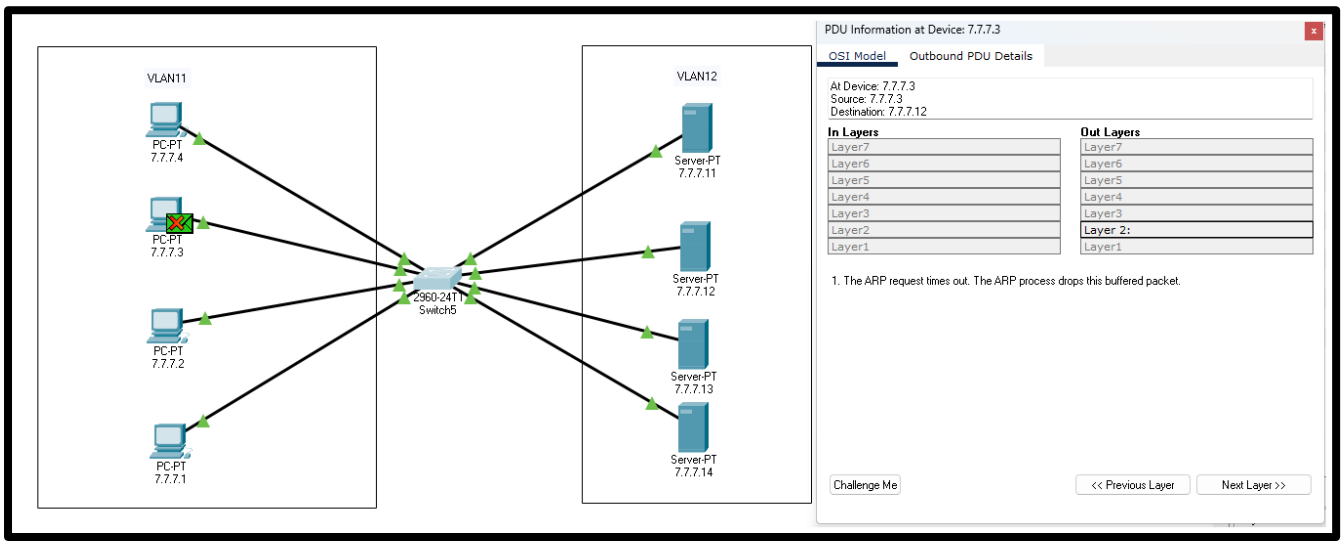
3. PDU screenshot between two VLANs.

Successful



Failed



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4. Mention IP address of each pc as label.

For VLAN11 (PCs):

1. PC1 → 7.7.7.1
2. PC2 → 7.7.7.2
3. PC3 → 7.7.7.3
4. PC4 → 7.7.7.4

For VLAN12 (Servers):

1. Server1 → 7.7.7.11
2. Server2 → 7.7.7.12
3. Server3 → 7.7.7.13
4. Server4 → 7.7.7.14