Date: 18/07/2024

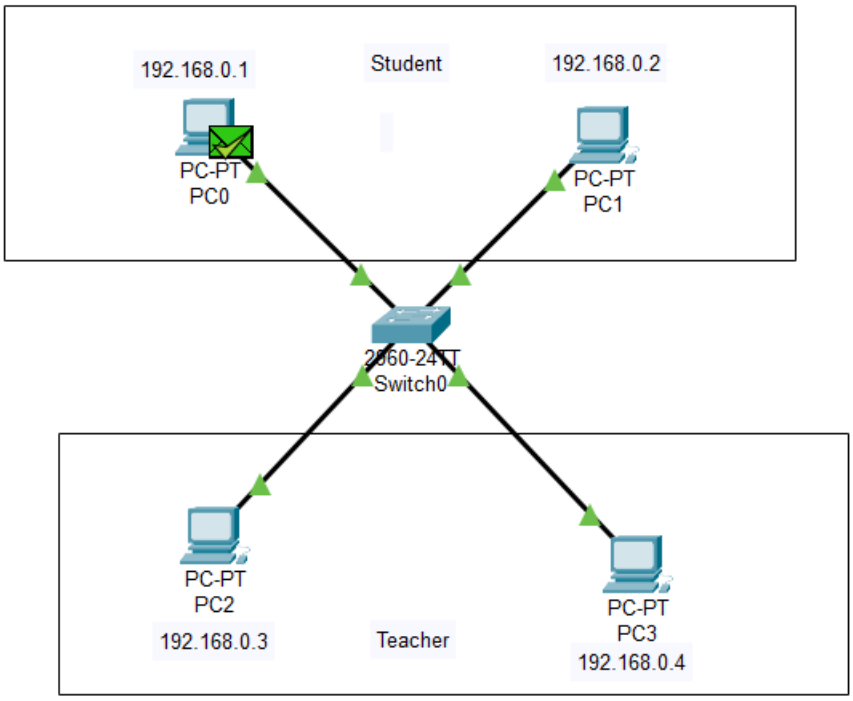
Lab Practical #05:

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.**

Ex: 1



- **Create the Network:**
  - Add a switch and four PCs.
  - Connect PCs to the switch with Ethernet cables.

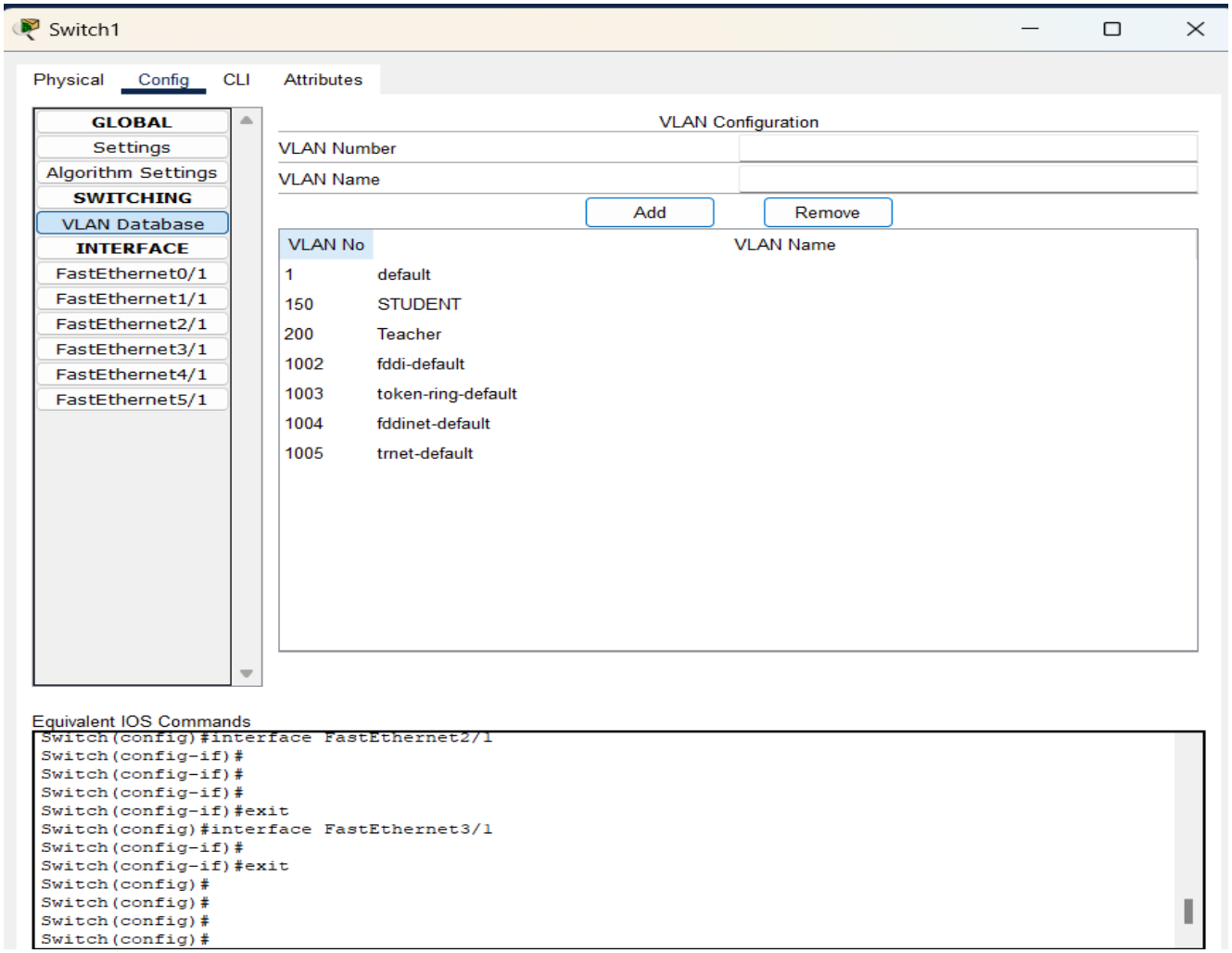
- **Assign IP Addresses to PCs:**
  - PC0: 192.168.0.1
  - PC1: 192.168.0.2
  - PC2: 192.168.0.3
  - PC3: 192.168.0.4

- **Create VLANs on the Switch:**
  - Go to `Config` tab > `VLAN Database`.
  - Add VLAN 150 (`STUDENT`), VLAN 200 (`Teacher`).

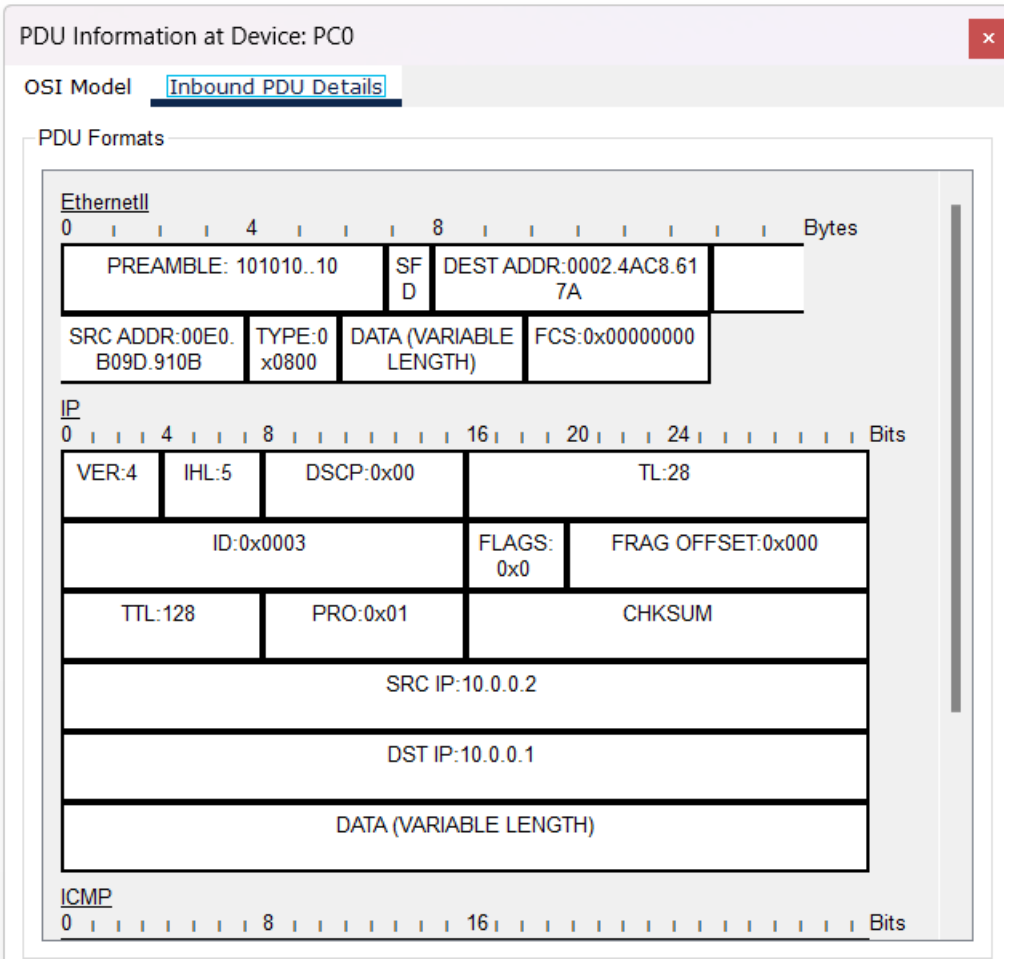
Date: 18/07/2024

- **Assign VLANs to Ports:**
  - `FastEthernet0/1` (PC0): VLAN 150
  - `FastEthernet0/2` (PC1): VLAN 150
  - `FastEthernet0/3` (PC2): VLAN 200
  - `FastEthernet0/4` (PC3): VLAN 200

- **Test Connectivity:**
  - Ping within VLANs (PC0 to PC1 and PC2 to PC3).

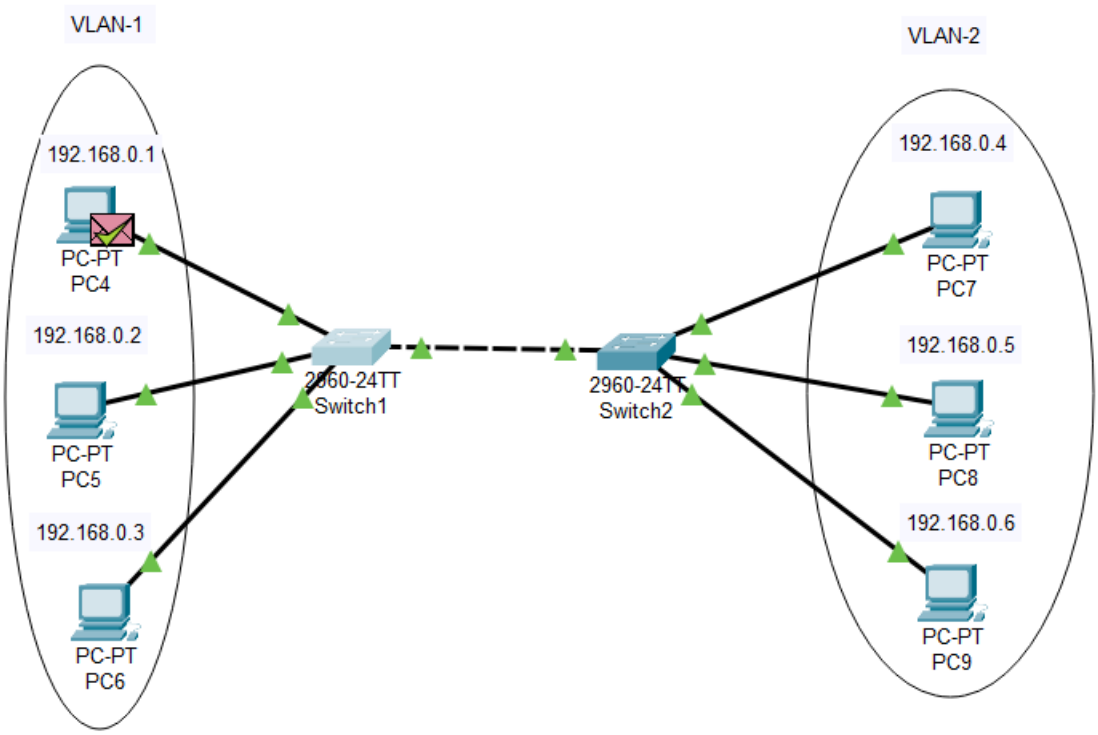


Date: 18/07/2024



Date: 18/07/2024

Ex: 2



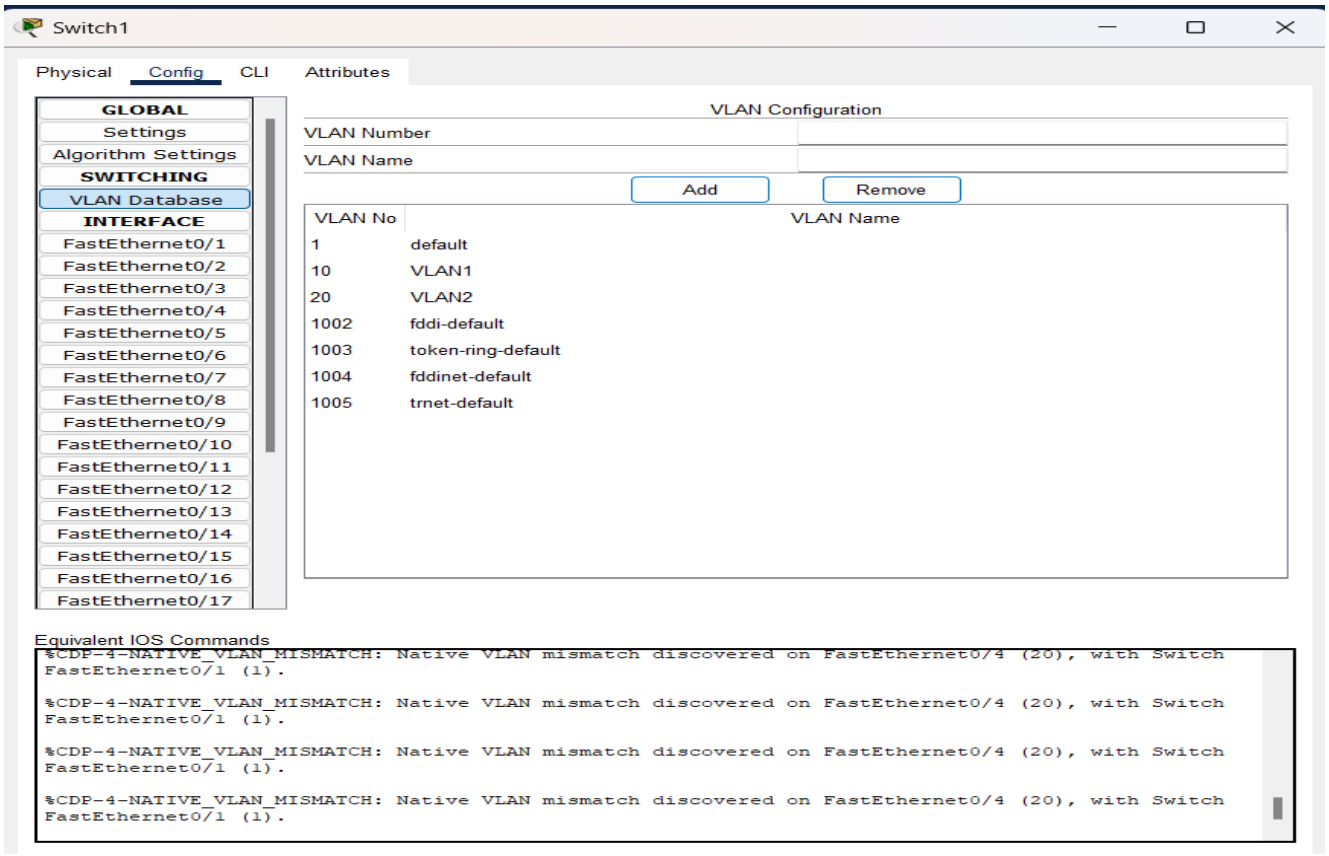
Steps:

- **Create the Network:**
  - Add two switch and 6 PCs.
  - Connect PCs to the switch with Ethernet cables.
  - Also Connect both switches together

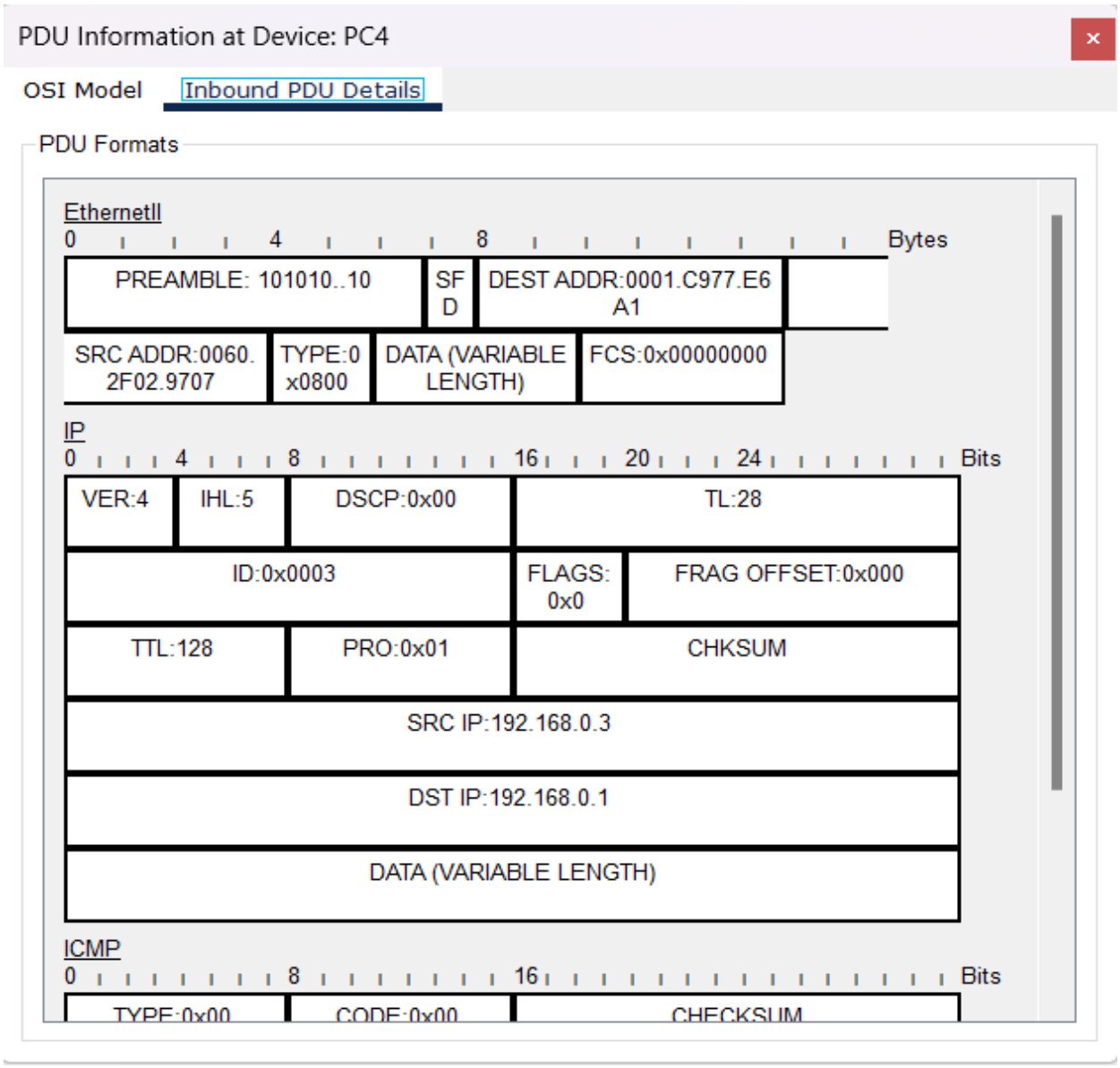
- **Assign IP Addresses to PCs:**
  - PC4: 192.168.0.1
  - PC5: 192.168.0.2
  - PC6: 192.168.0.3
  - PC7: 192.168.0.4
  - PC8: 192.168.0.5
  - PC9: 192.168.0.6

Date: 18/07/2024

- **Create VLANs on the Switch:**
  - Go to `Config` tab > `VLAN Database`.
  - Add VLAN 10 (`VLAN1`), VLAN 20 (`VLAN2`).
- **Assign VLANs to Ports:**
  - `FastEthernet0/1` (PC4): VLAN 10
  - `FastEthernet0/2` (PC5): VLAN 10
  - `FastEthernet0/3` (PC6): VLAN 10
  - `FastEthernet0/4` (PC7): VLAN 20
  - `FastEthernet0/5` (PC8): VLAN 20
  - `FastEthernet0/6` (PC9): VLAN 20
- **Test Connectivity:**
  - Ping within VLANs (PC4 to PC6).

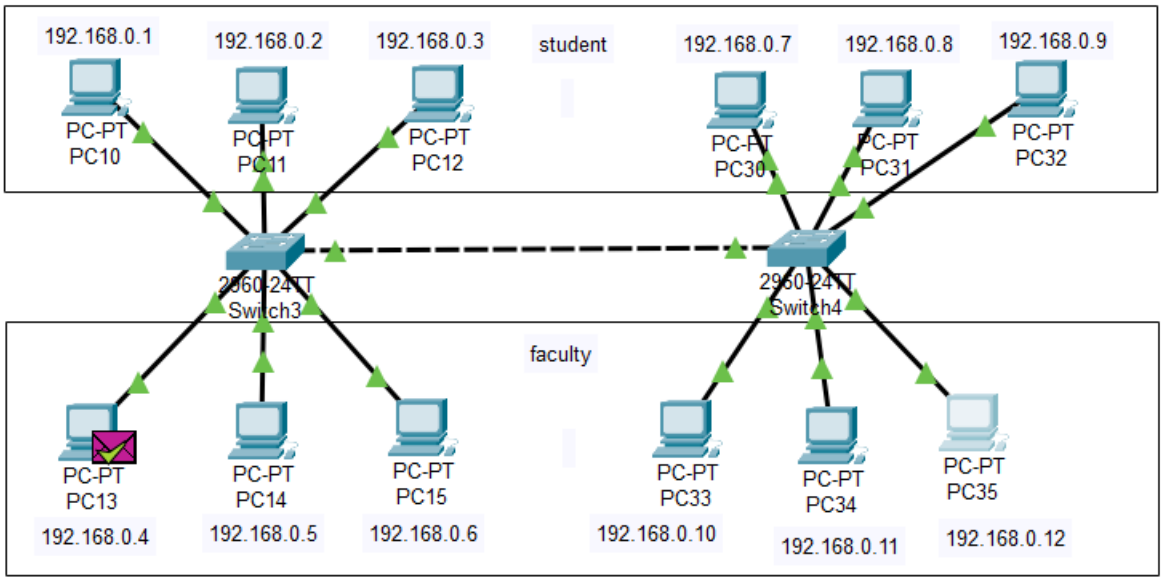


Date: 18/07/2024



Date: 18/07/2024

Ex: 3



Steps:

- **Create the Network:**
  - Add two switch and 12 PCs.
  - Connect PCs to the switch with Ethernet cables.
  - Also Connect both switches together

- **Assign IP Addresses to PCs:**
  - PC10: 192.168.0.1
  - PC11: 192.168.0.2
  - PC12: 192.168.0.3
  - PC13: 192.168.0.4
  - PC14: 192.168.0.5
  - PC15: 192.168.0.6

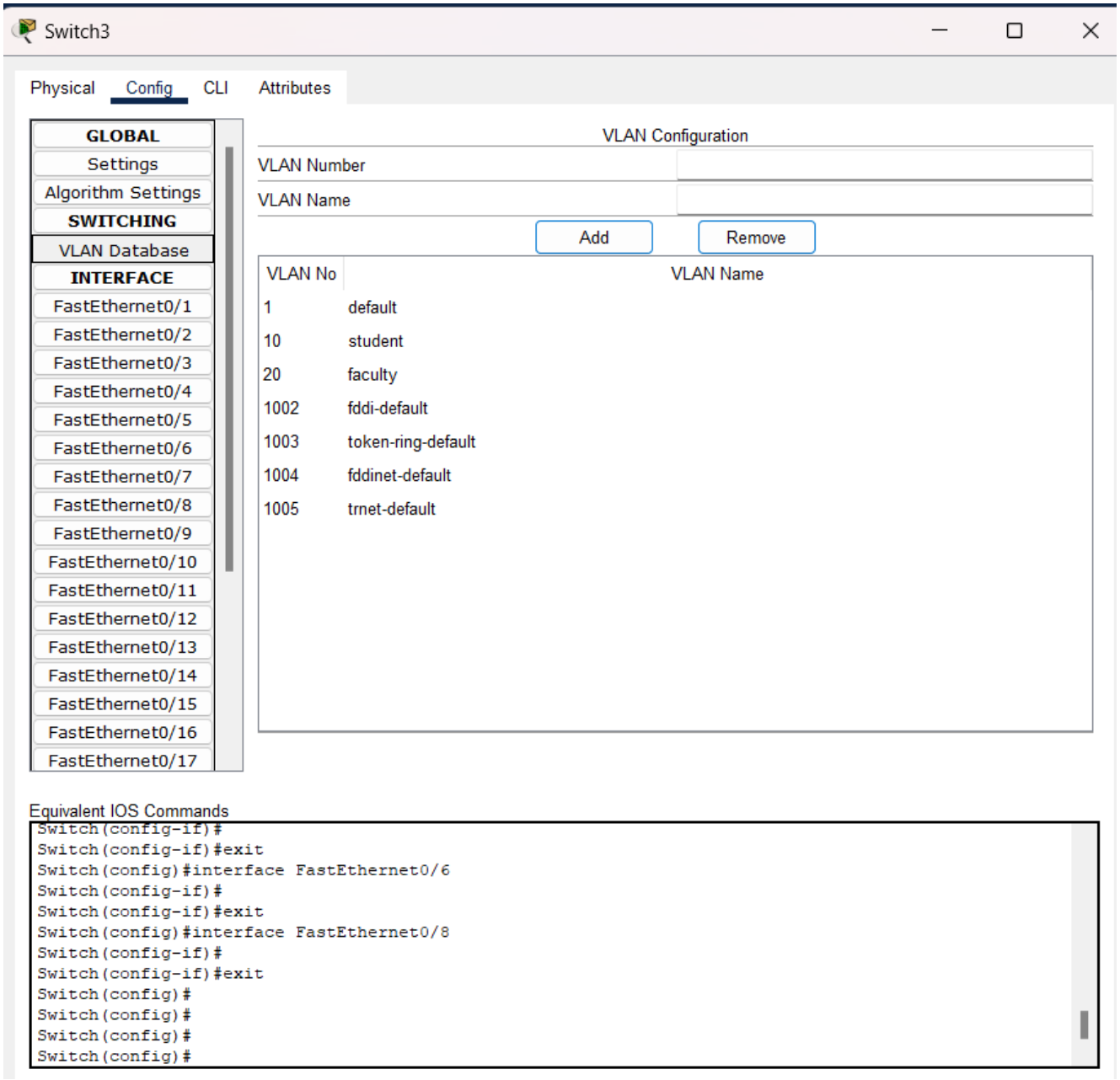
- PC30: 192.168.0.7
- PC31: 192.168.0.8
- PC32: 192.168.0.9
- PC33: 192.168.0.10
- PC34: 192.168.0.11
- PC35: 192.168.0.12

- **Create VLANs on the Switch:**
  - Go to `Config` tab > `VLAN Database`.
  - Add VLAN 10 (`student`), VLAN 20 (`faculty`).

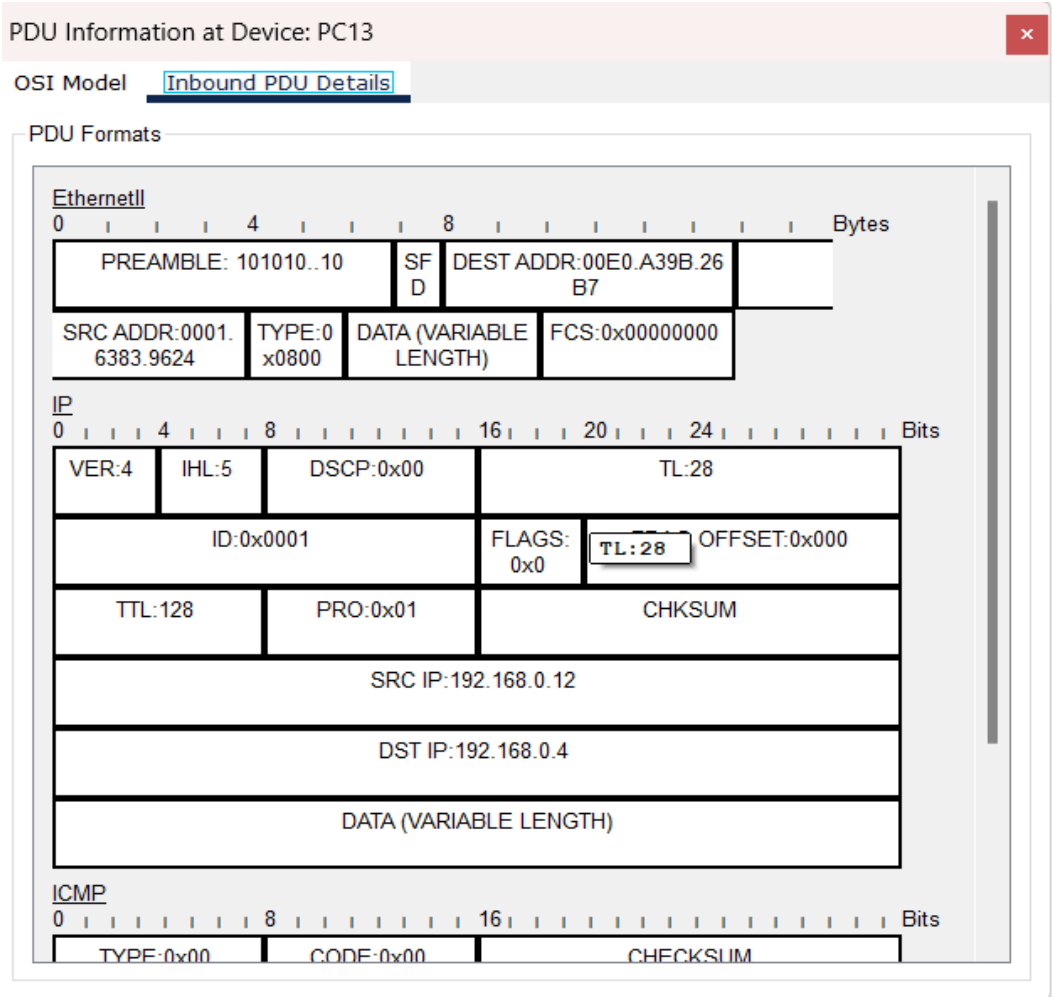
- **Assign VLANs to Ports:**
  - `FastEthernet0/1` (PC10): VLAN 10
  - `FastEthernet0/2` (PC11): VLAN 10
  - `FastEthernet0/3` (PC12): VLAN 10
  - `FastEthernet0/4` (PC13): VLAN 20
  - `FastEthernet0/5` (PC14): VLAN 20
  - `FastEthernet0/6` (PC15): VLAN 20
  - `FastEthernet0/2` (PC30): VLAN 10
  - `FastEthernet0/3` (PC31): VLAN 10
  - `FastEthernet0/4` (PC32): VLAN 10
  - `FastEthernet0/5` (PC33): VLAN 20
  - `FastEthernet0/6` (PC34): VLAN 20
  - `FastEthernet0/7` (PC35): VLAN 20

- **Test Connectivity:**
  - Ping within VLANs (PC13 to PC35).

Date: 18/07/2024

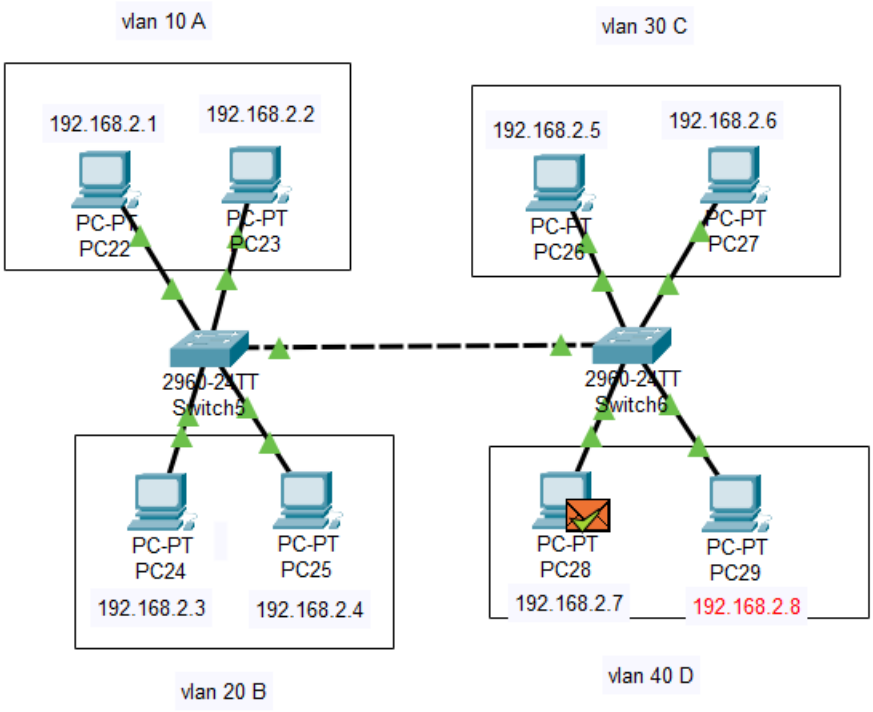


Date: 18/07/2024



Date: 18/07/2024

Ex: 4



Steps:

- **Create the Network:**
  - Add two switch and 2 PCs with different group.
  - Connect PCs to the switch with Ethernet cables.
  - Also Connect both switches together

- **Assign IP Addresses to PCs:**
  - PC22: 192.168.2.1
  - PC23: 192.168.2.2
  - PC24: 192.168.2.3
  - PC25: 192.168.2.4
  - PC26: 192.168.2.5
  - PC27: 192.168.2.6

- PC28: 192.168.2.7
- PC29: 192.168.2.8

- **Create VLANs on the Switch:**
  - Go to `Config` tab > `VLAN Database`.
  - Add VLAN 10 (`A`), VLAN 20 (`B`), VLAN 30 (`C`), VLAN 40 (`D`).
- **Assign VLANs to Ports:**

  FOR SWITCH 1:

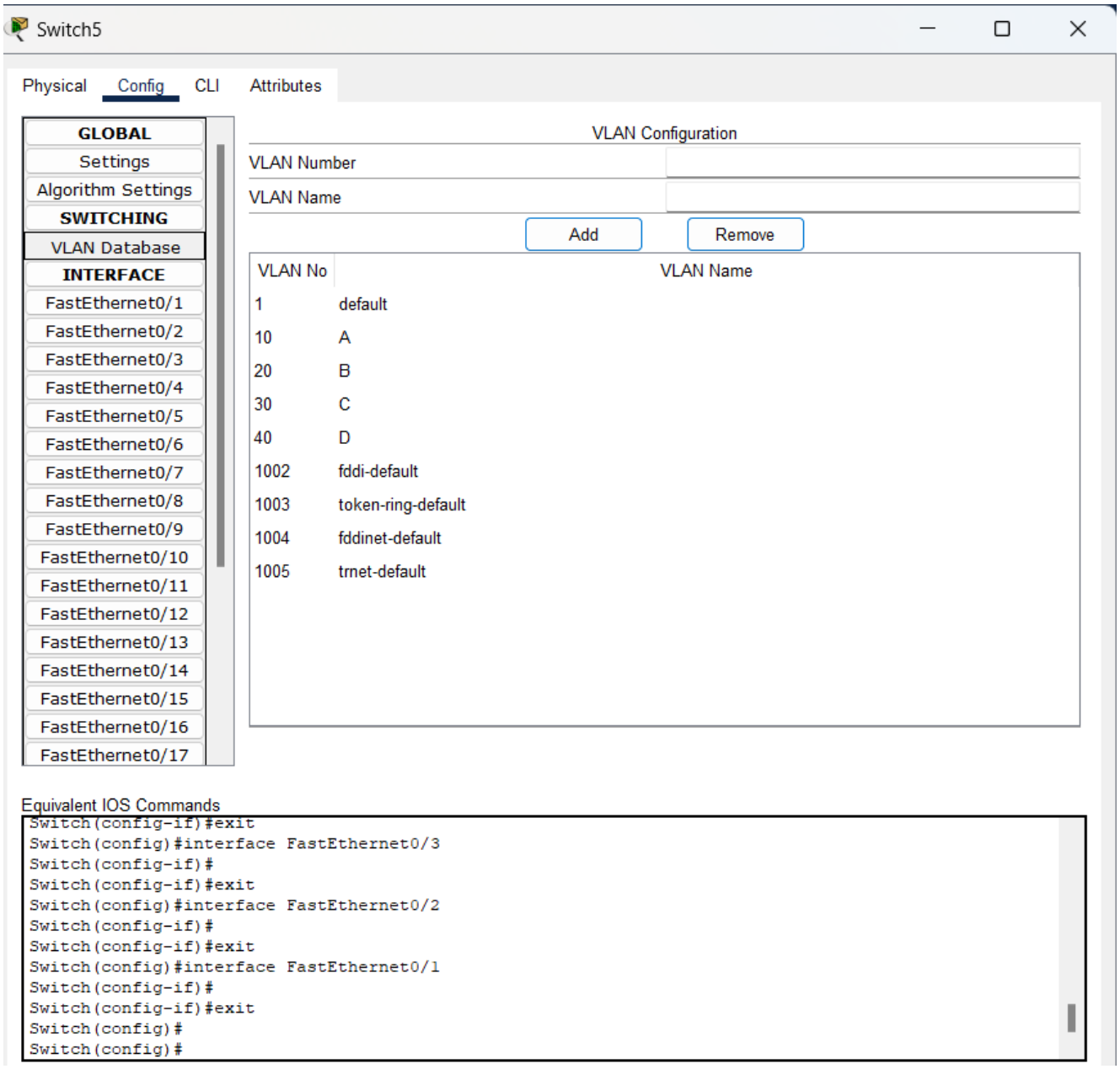
  - `FastEthernet0/1` (PC22): VLAN 10
  - `FastEthernet0/2` (PC23): VLAN 10
  - `FastEthernet0/3` (PC24): VLAN 20
  - `FastEthernet0/4` (PC25): VLAN 20
  - `FastEthernet0/5` : Trunk VLAN 1-1005

  FOR SWITCH 2:

  - `FastEthernet0/1` (PC26): VLAN 30
  - `FastEthernet0/2` (PC27): VLAN 30
  - `FastEthernet0/3` (PC28): VLAN 40
  - `FastEthernet0/4` (PC29): VLAN 40
  - `FastEthernet0/5` : Trunk VLAN 1-1005

  - **Test Connectivity:**
    - Ping within VLANs (PC28 to PC29).

Date: 18/07/2024



Date: 18/07/2024