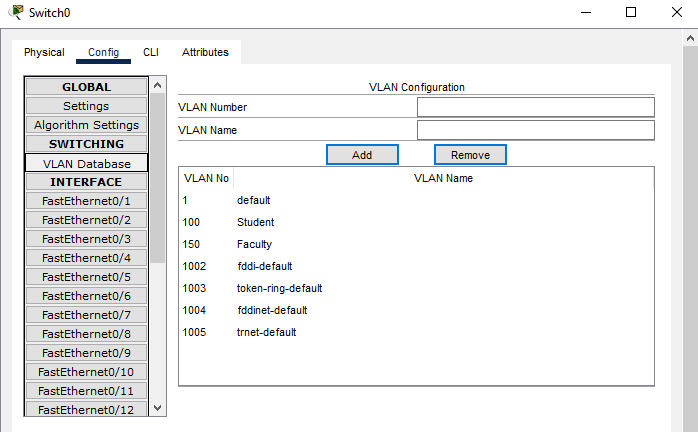
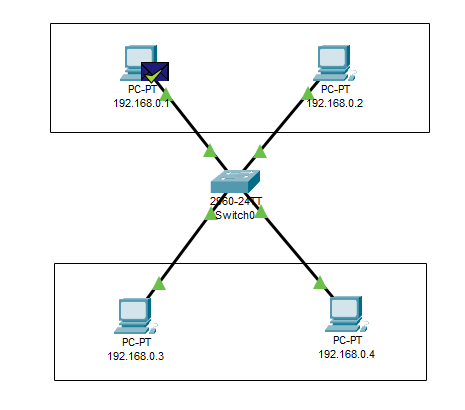
**Lab Practical #05:**

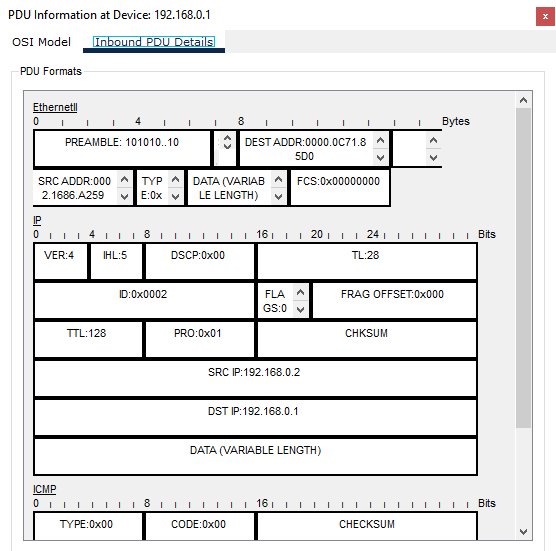
Study the concept of VLAN using packet tracer.

**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.**

**Example-1**

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* **Steps**

Step 1: Set Up the Network Devices

1. Add a Switch: - Drag and drop a switch onto the workspace from the "Switches" section.

2. Add PCs: - Drag and drop four PCs onto the workspace from the "End Devices" section.

Step 2: Assign IP Addresses to PCs

* + Click on PC to open its configuration window.
  + Go to Config tab and after go to FastEthernet0.
  + Now set the IP address and set Subnet Mask.
  + Click on Setting and set Display Name same as your IP Address.
  + Do these for all other PCs.

Step 3: Connect the PCs to the Switch

o Use the "Copper Straight-Through" cable to connect each PC to the switch.

o Connect 192.168.0.1 to port FastEthernet0/1.

o Connect 192.168.0.2 to port FastEthernet0/2.

o Connect 192.168.0.3 to port FastEthernet0/3.

o Connect 192.168.0.4 to port FastEthernet0/4.

Step 4: Configure the VLANs

1. Open the Switch Configuration:

o Click on the switch to open its configuration window.

o Go to the "Config" tab.

2. Create VLANs:

o In the "VLAN Database" section, add VLAN 100 and name it "Students".

o Add VLAN 150 and name it "Faculty".

3. Assign Ports to VLANs:

o In the "Interface" section, select FastEthernet0/1.

▪ Set the "VLAN ID" to 100.

o Select FastEthernet0/2.

▪ Set the "VLAN ID" to 100.

o Select FastEthernet0/3.

▪ Set the "VLAN ID" to 150

o Select FastEthernet0/4.

▪ Set the "VLAN ID" to 150.

Step 5: Verify the VLAN Configuration

1. Verify VLANs on the Switch:

* + Go to the "VLAN Database" section in the switch configuration and ensure VLAN 100 and VLAN 150 are listed with the correct ports.

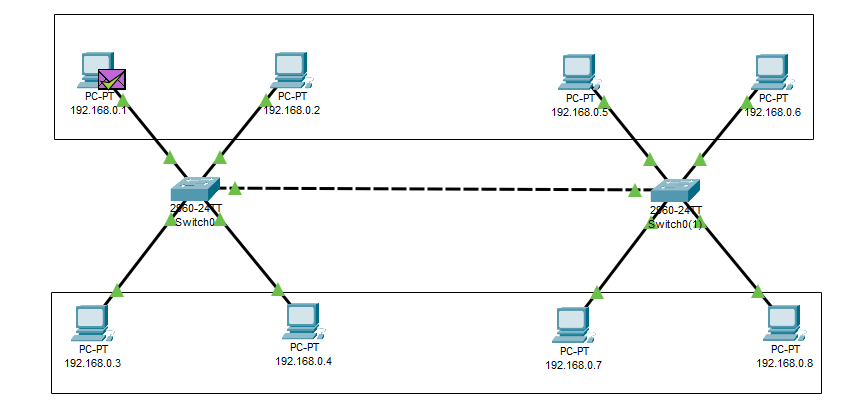
2. Test Connectivity:

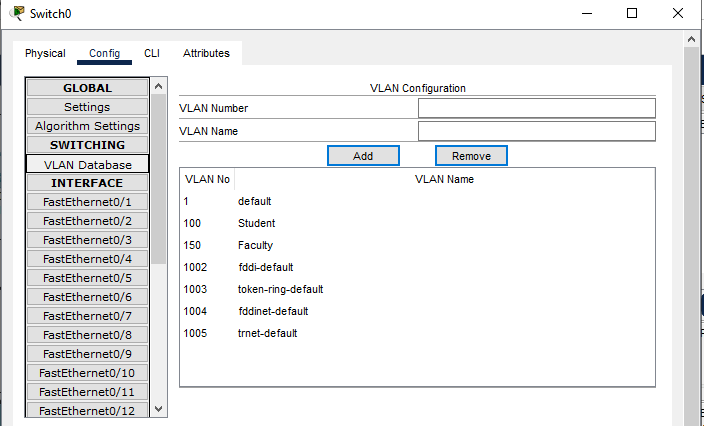
* + - Send a Message (PDU) from PC 192.168.0.1to the 192.168.0.2 if Message was send
    - successfully then VLAN is works.
    - Send a Message (PDU) from 192.168.0.1 to the 192.168.0.2 if Message was failed

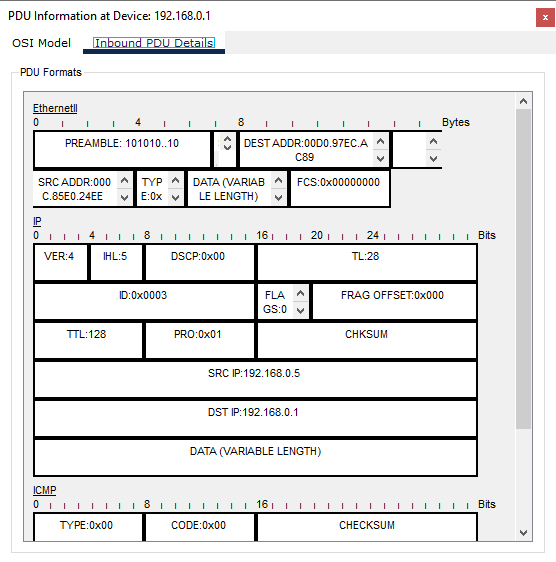
then VLAN is not works.

**Example-2**

* **Steps**
  + Take 8 pc and assign Ip address and label to each pc.
  + Take 2 Switch and Make 2 Lan with 4 pc each.
  + Now there is local area network but We need to implement Virtual Lan database
  + for implement Virtual Lan we need to configure Virtual Lan database in configure
  + Section in switch.
  + Make 2 New Virtual Lan configuration with unique Virtual Lan number and name.
  + Now check the Port where the pc is connected and open that port configuration
  + in switch and set Virtual Lan to access mode and select your Virtual Lan database
  + name in dropdown.
  + Now we need to connect both Switch but here we need to give Virtual Lan mode
  + to trunk because there are number different Virtual Lan signal travel threw it.
  + Now you configure two Virtual Lan in different local area network

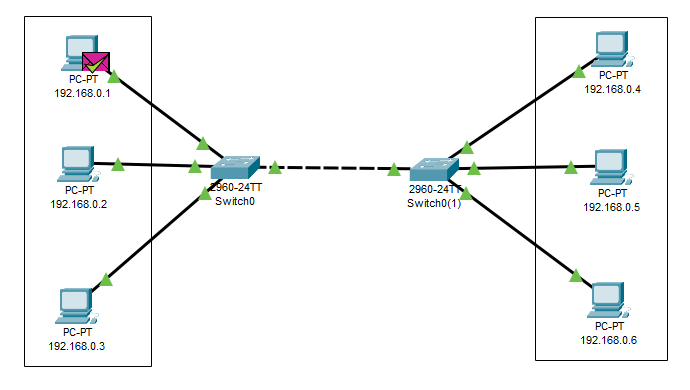
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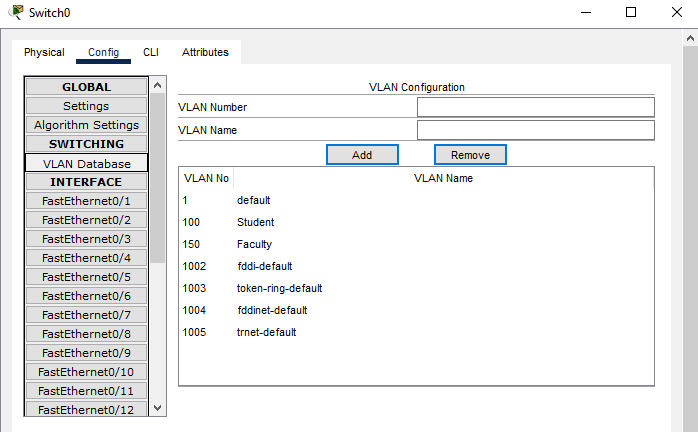
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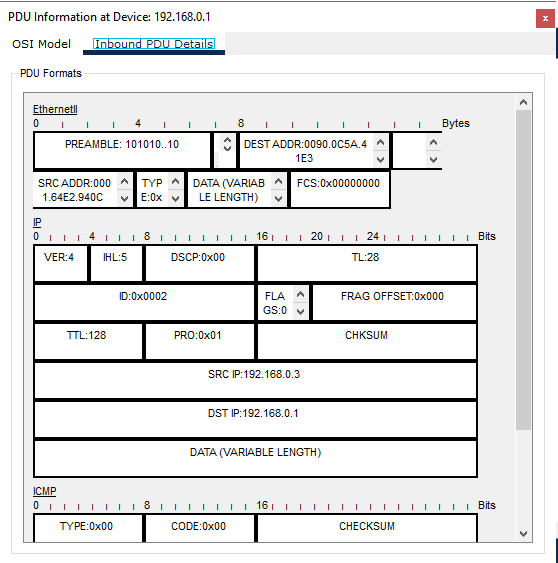
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**Example-3**

* **Steps**
* Take 6 pc and assign Ip address and label to each pc.
* Take 2 Switch and Make 2 Lan with 3 pc each.
* Now there is local area network first for Group-1(Students) and second for Group2(Faculty) but We need to implement Virtual Lan database for implement Virtual
* Lan we need to configure Virtual Lan database in configure Section in switch.
* Make 2 New Virtual Lan configuration with unique Virtual Lan number and name.
* Now check the Port where the pc is connected and open that port configuration
* in switch and set Virtual Lan to access mode and select your Virtual Lan database
* name in dropdown.
* Now we need to connect both Switch but here we need to give Virtual Lan mode
* to trunk because there are number different Virtual Lan signal travel threw it.
* Now you configure two Virtual Lan in different local area network.

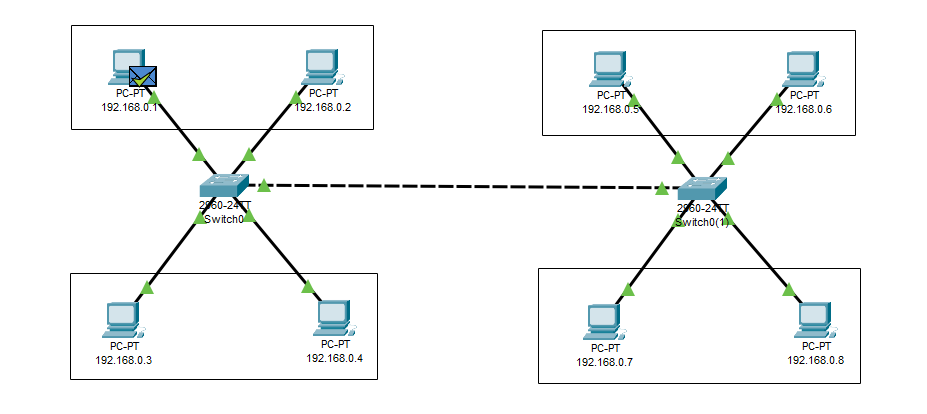
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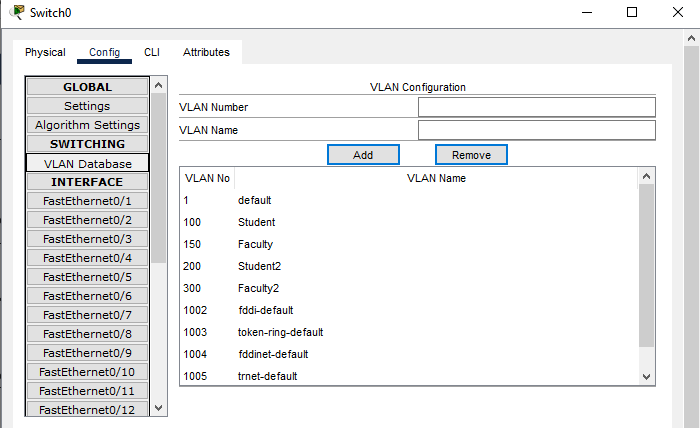
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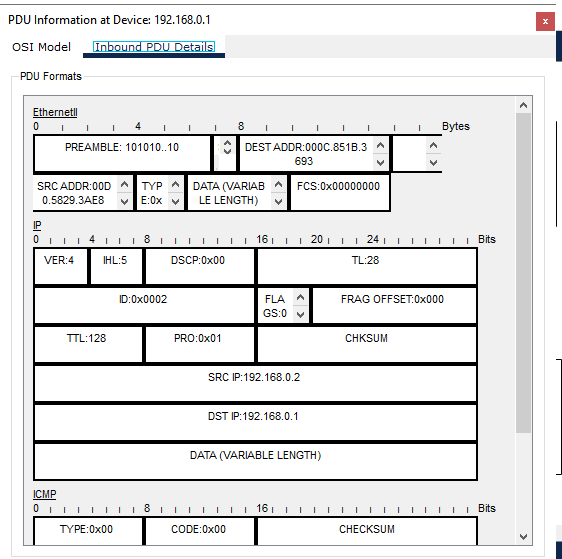
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**Example-4**

* **Steps**
  + Take 8 pc and assign Ip address and label to each pc.
  + Take 2 Switch and Make 2 Lan with 4 pc each.
  + Now there is local area network and group in to Group-1(Student), Group2(Faculty), Group-3(Student2) and Group-4(Faculty2) but We need to implement Virtual
  + Lan database for implement Virtual Lan we need to configure Virtual Lan database
  + in configure Section in switch.
  + Make 4 New Virtual Lan configuration with unique Virtual Lan number and name.
  + Now check the Port where the pc is connected and open that port configuration
  + in switch and set Virtual Lan to access mode and select your Virtual Lan database
  + name in dropdown.
  + Now we need to connect both Switch but here we need to give Virtual Lan mode
  + to trunk because there are number different Virtual Lan signal travel threw it.
  + Now you configure two Virtual Lan in different local area network.

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