PRACTICAL-3

AIM: To Implement Virtual LAN (VLAN)

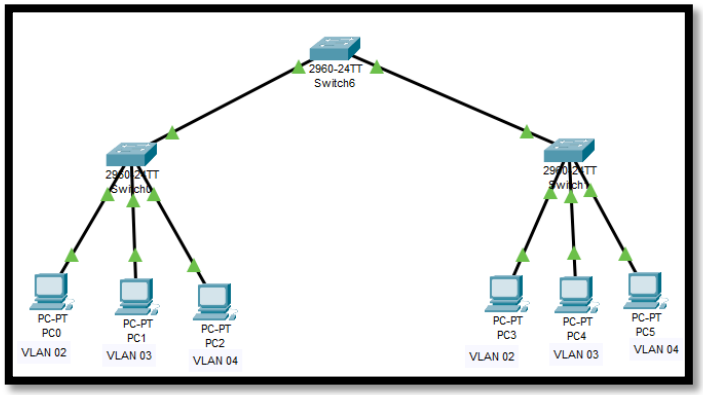
- What is VLAN?
  A Virtual LAN (**VLAN)** means we can logically group hosts even if they are physically located on separate LAN segments. Just similar to physical LAN but has different virtual LANS on single device called switch

- What is the significance of using VLAN?
  VLANs is very imperative for logical grouping of devices, which are physically different on a network. Main thing is that it never broadcast ion another network so less traffic less hardware required Easy to implement less maintenance cost Secure Easy to supervise for administrators.

- What are the drawbacks of it?
  High virus issues and due to access on a one switch or device it is not feasible increases the load of switch so to increase the speed we do require other devices to manage.

- What is the definition of access port & Trunk port?
  An access port is dedicated to a single VLAN. It is useful within a network so very secure way of communication almost only one VLAN we can add.
  However, A trunk port is a port that can be connected to another switch or router. This port can carry traffic of multiple VLANs.

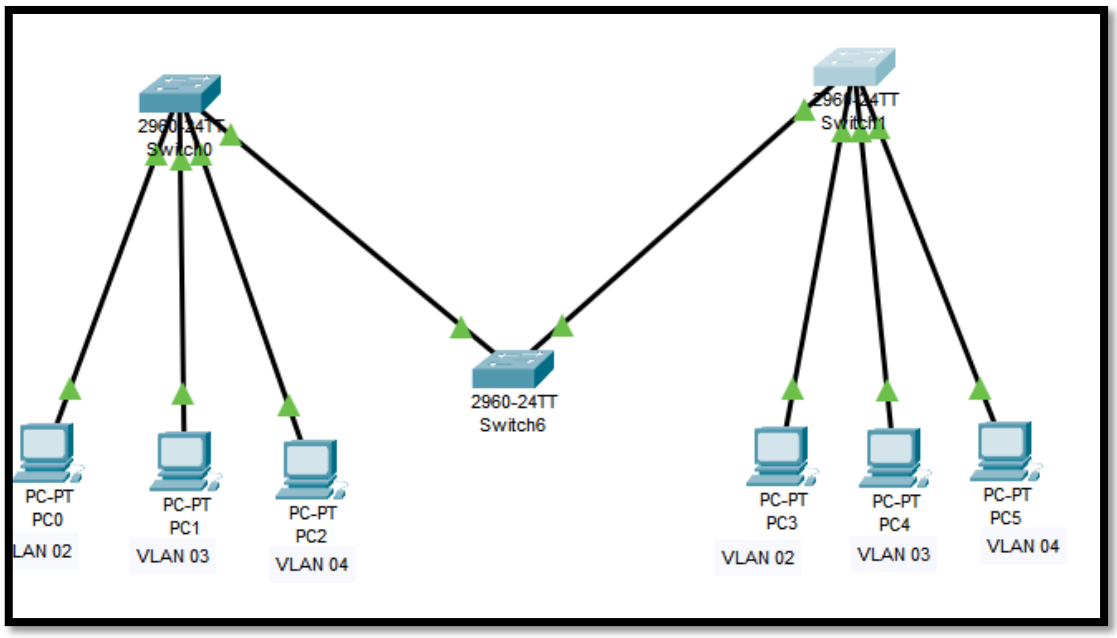
- Lets see the below network topology for VLAN Implementation as discussed in lab



- There are two ways of implementing

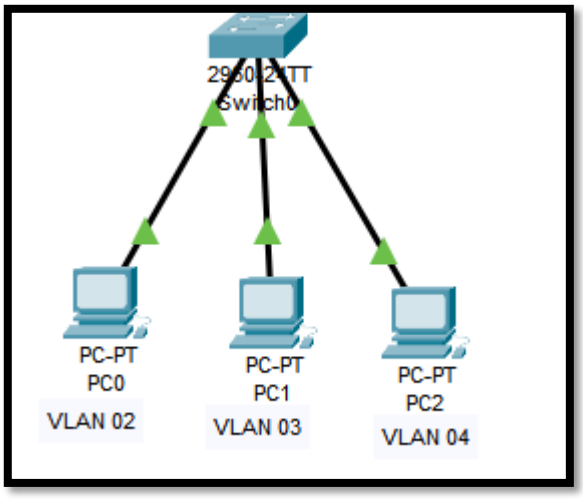
  1. Manually
  2. by commands

- Consider a one think that if I want to pass data from one vlan to another than what I am supposed to do rather than making Trunk port is the main objective of below explained details



- **Let's make 3 VLANs on both the switch:** VLAN 02, VLAN 03 & VLAN 04. You can give them custom names.

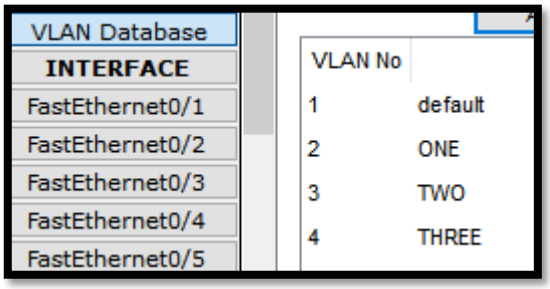
- Make this type of connection



- Where I have connected one pc of vlan 2 another of 3 and 4 respectively same happens with another switch We cannot use vlan name 1 it is by default so it ois better to use it from 1-1000

  So lets start

  Switch# configure terminal
  Switch(config)# vlan 2
  Switch(config-vlan)# name ONE
  Switch(config-vlan)# vlan 3
  Switch(config-vlan)# name TWO
  Switch(config-vlan)# vlan 4
  Switch(config-vlan)# name THREE



- **Now give or separate vlans by adding port wise data**

  For first switch:

  Switch>enable
  Switch# config terminal

  S witch(config)# interface fa0/1
  Switch(config-if)# switchport mode trunk(trunk because I want to establish connections outside a network so as mentioned above)
  Switch(config-if)# switchport access vlan 02

  Switch(config)# interface fa0/2
  Switch(config-if)# switchport mode trunk
  Switch(config-if)# switchport access vlan 03

  Switch(config)# interface fa0/3
  Switch(config-if)# switchport mode trunk

Switch(config-if)# switchport access vlan 04

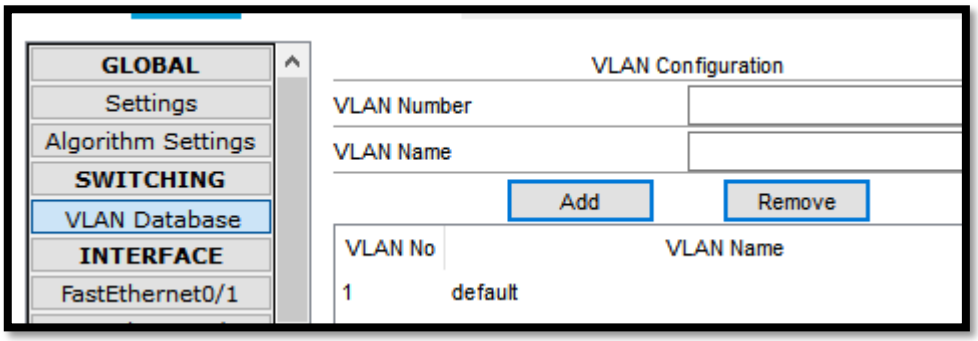
For second switch:

Switch(config)# int fa0/1
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport access vlan 02

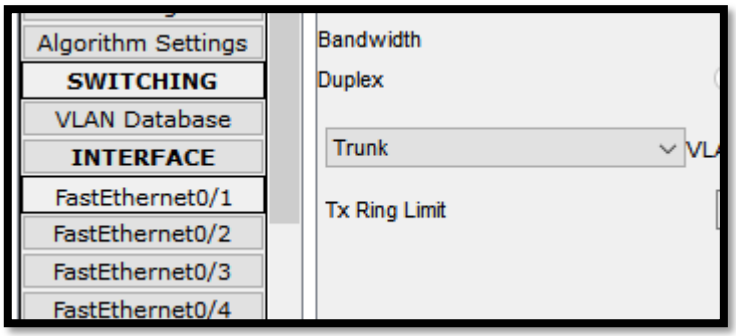
Switch(config)# int fa0/3
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport access vlan 03

Switch(config)# int fa0/3
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport access vlan 04

- Adding and making trunk manually



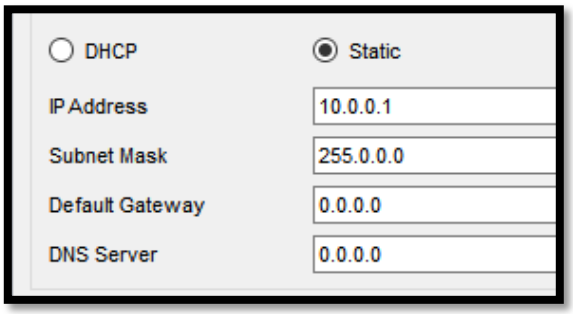
- Add by pressing add and select trunk like this



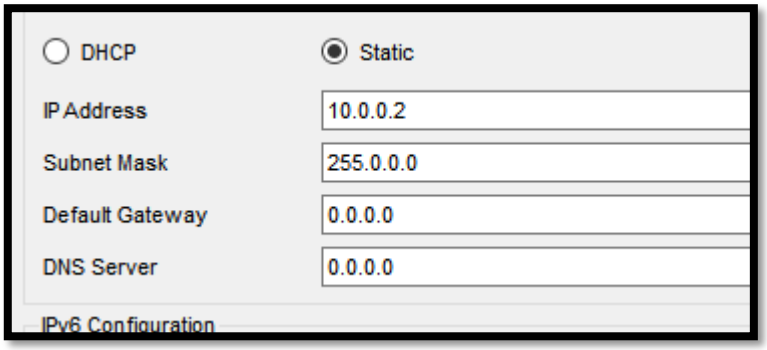
- After configuring VLAN on both the switch, assign IP address to all the devices in the whole network.

- So lets give ips to all

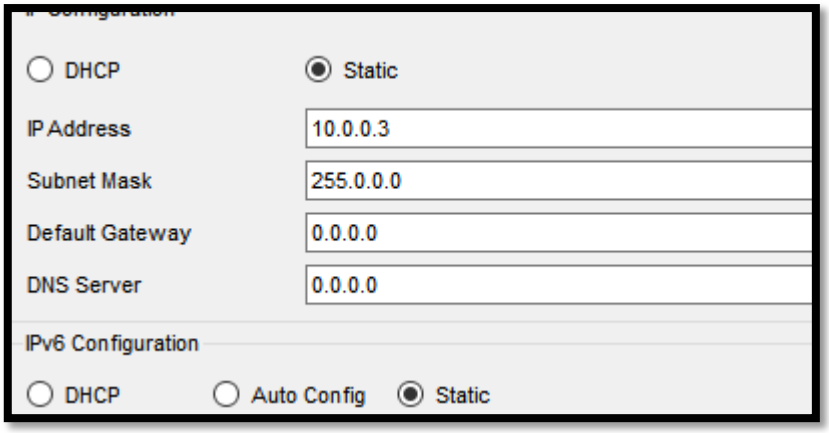
- Starting with vlan 2



- For vlan 3

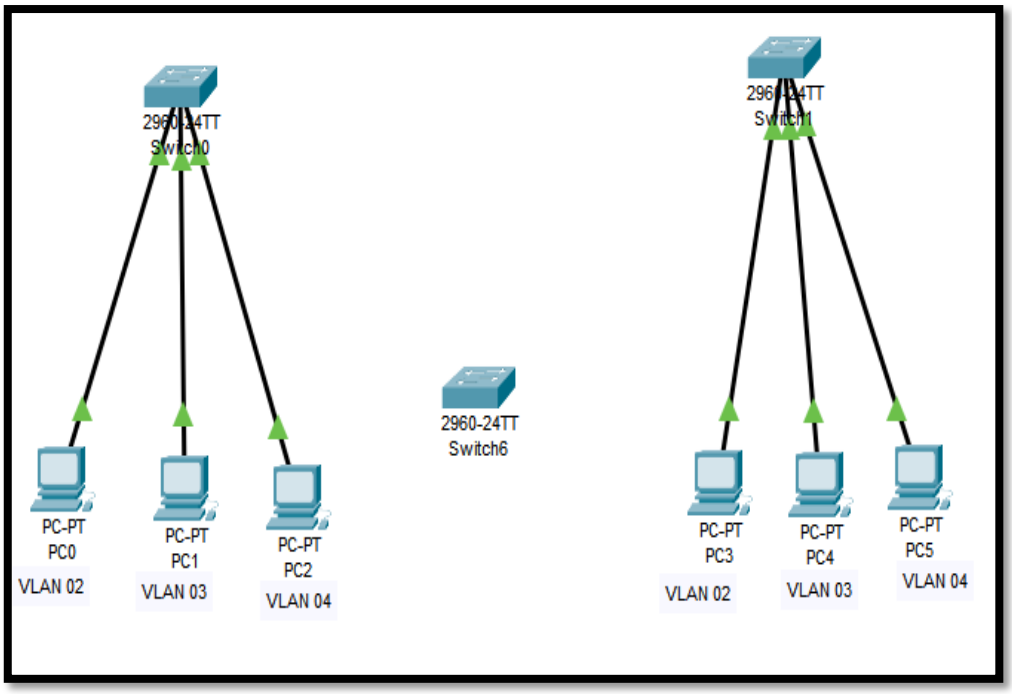


- For vlan 4



- Now similar process for the second switch given and then connect those both switches to one another switch

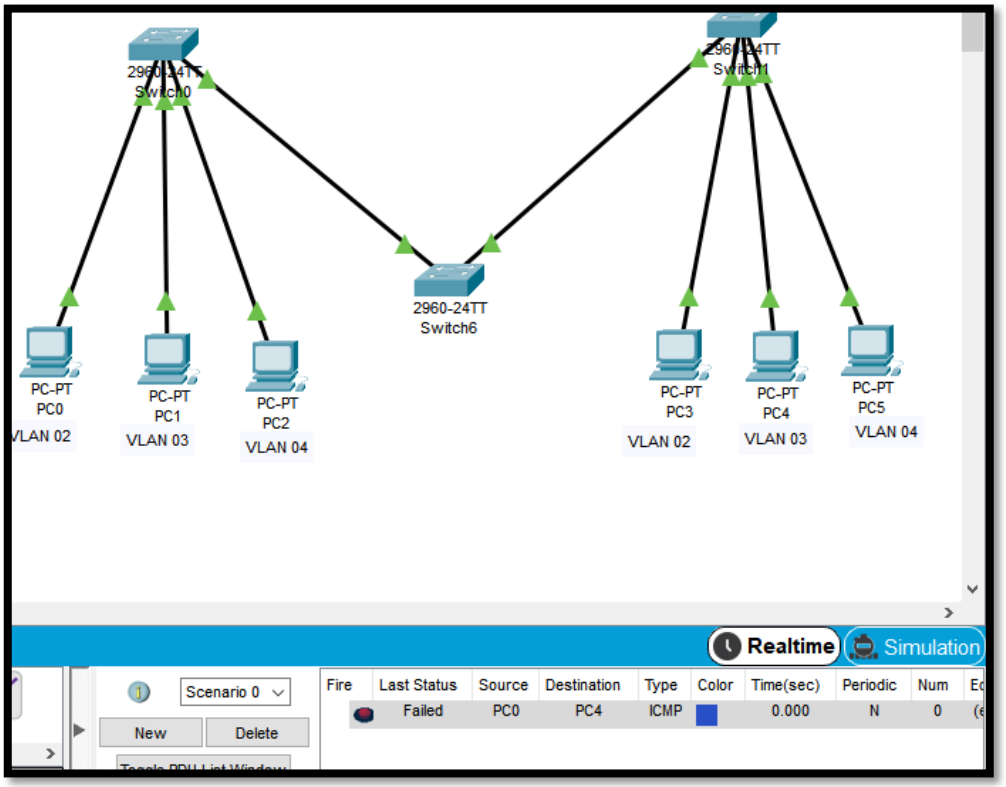
- Why so?
  Three layer is required when you want another vlan to access the another vlan so



- Connect them them

- But it is still a question that if you will pass a message to same vlans it will work otherwise not lets see first then we will solve that issue

- See it is failing but now check the second image down there



And the solution is that if we want different network to be communicate with each other we will simply add all the vlans on each port see as below I have used trunk port and also tickmarked all the vlans whithin which I want my data to be transferred