

## Lab 4

### Title: Creating VLAN

#### Objective:

- a) To understand operation of a VLAN and how it works.

#### Software requirements

SN	Software	Specification
1.	Cisco Packet Tracer	Version above 7.0
2.	Windows OS	Windows 10

#### Related theory

- VLANs are used to divide a physical LAN into multiple broadcast domains (logically) to isolate services with the aim of improving the security and management of the network.
- Hosts within a VLAN can directly communicate only with other hosts in the same VLAN and must use a router to communicate with hosts in other VLANs.
- Broadcast frames will only be switched to the same VLAN.
- Unlike other LAN types, which physically connect computers to LAN segments, VLANs assign computers to LAN segments by software.

VLAN provides following advantages:-

- Solve broadcast problem
- Reduce the size of broadcast domains
- Allow us to add additional layer of security
- Make device management easier
- Allow us to implement the logical grouping of devices by function instead of location

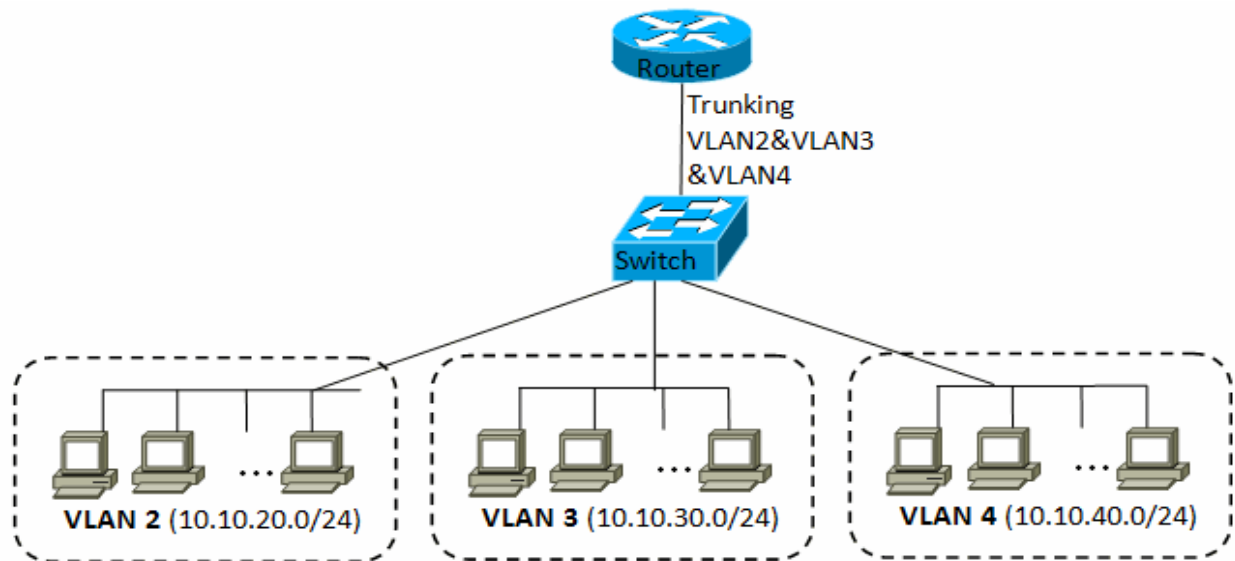
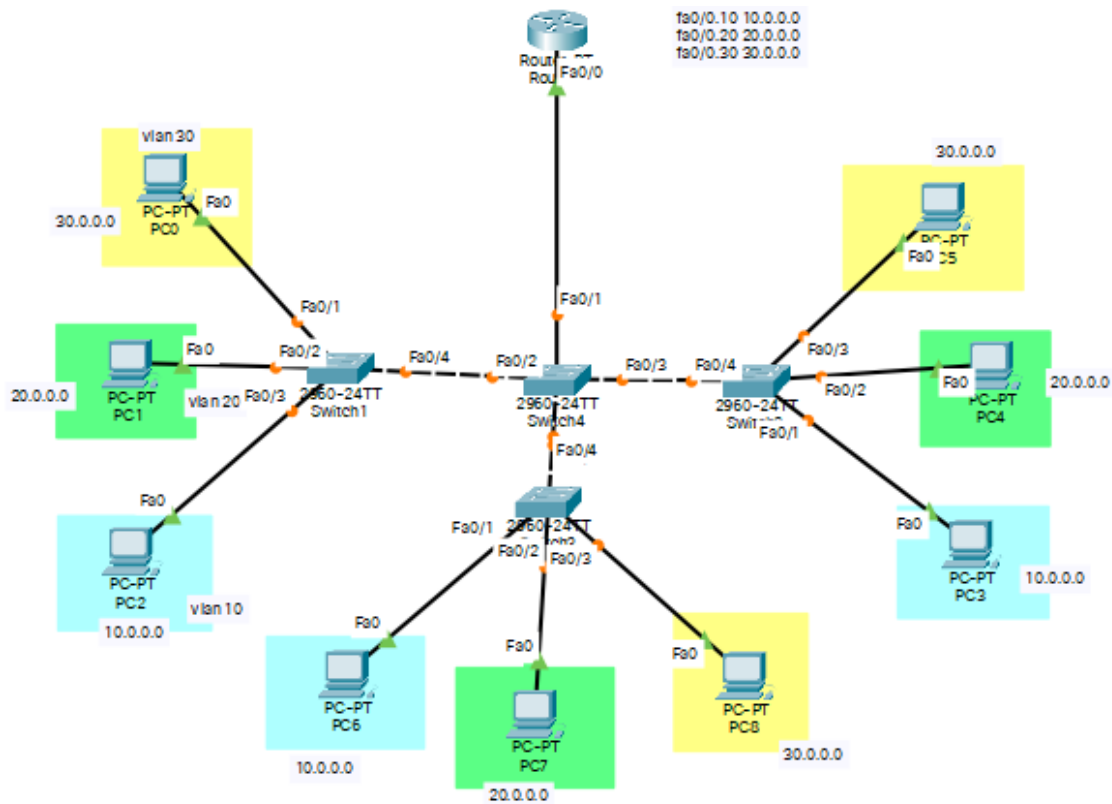


Fig: VLAN implementation and trunking for transmitting frames from one VLAN to another

## Procedure

1. Just drag and drop the router, switch and pc in the open area.
2. Connect appropriate router with switch and computers with appropriate cables.
3. Give host name to each component.
4. Give each computers ip address and default gateway (ip address of port connected with router).
5. Similarly, give ip addresses to each port of the router.
6. Turn the router on.
7. Click on the switch and go to CLI.
8. Enable the switch and create VLAN
9. Allocate appropriate computers to the VLAN.
10. Go to config – setting and click on save.

## Observation:



### To show VLAN

Switch#show vlan

### To create VLAN and give it name

Switch(config)#vlan 10

Switch(config-vlan)#name science

### Note:-

access:- Set trunking mode to ACCESS unconditionally

dynamic:- Set trunking mode to dynamically negotiate access or trunk mode

trunk:- Set trunking mode to TRUNK unconditionally

### To set mode

Switch(config-if)#switchport mode access

### **To Set VLAN**

Switch(config-if)#switchport access vlan 10

### **To choose interface range**

switch(config)#int range fa0/5-7

### **To remove VLAN**

Switch(config)#no vlan 10

### **Conclusion:**

Hence, VLAN was created in Packet Tracer