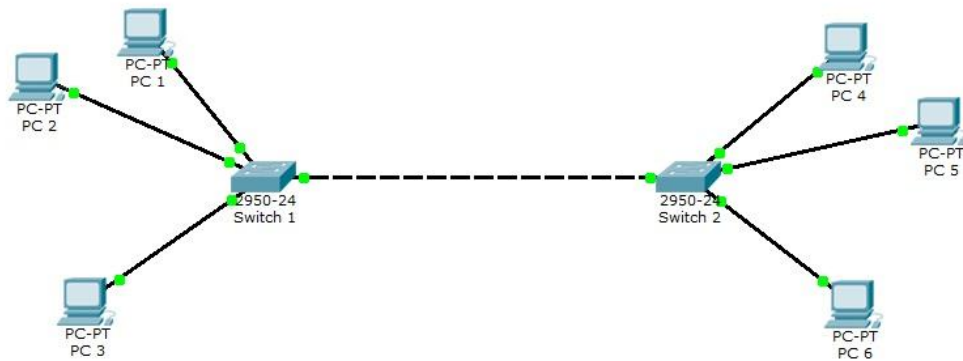LAB 04

Virtual Local Area Networks (VLAN) configurations

Create the Network setup above.

PC Configurations
PC 1 –> 192.168.1.2 VLAN 2
PC 2 –> 192.168.1.3 VLAN 2
PC 3 –> 192.168.1.4 VLAN 3
PC 4 –> 192.168.1.6 VLAN 3
PC 5 –> 192.168.1.7 VLAN 3
PC 6 –> 192.168.1.8 VLAN 2

Configuration on Switch 1
```
Switch 1(config)#interface fastEthernet 0/2
Switch 1(config-if)#switchport mode access
Switch 1(config-if)#switchport access vlan 2
Switch 1(config)#interface fastEthernet 0/3
Switch 1(config-if)#switchport mode access
Switch 1(config-if)#switchport access vlan 2
Switch 1(config)#interface fastEthernet 0/4
Switch 1(config-if)#switchport mode access
Switch 1(config-if)#switchport access vlan 3
Switch 1(config)#interface fastEthernet 0/1
Switch 1(config-if)#switchport mode trunk
Switch 1(config-if)#switchport nonegotiate
Switch 1(config-if)#switchport trunk allowed vlan 2-4
Switch 1#copy running-config startup-config
```

Configuration on Switch 2

```
Switch 2(config)#interface fastEthernet 0/2
Switch 2(config-if)#switchport mode access
Switch 2(config-if)#switchport access vlan 3
Switch 2(config)#interface fastEthernet 0/3
Switch 2(config-if)#switchport mode access
Switch 2(config-if)#switchport access vlan 2
Switch 2(config)#interface fastEthernet 0/4
Switch 2(config-if)#switchport mode access
Switch 2(config-if)#switchport access vlan 2
Switch 2(config)#interface fastEthernet 0/1
Switch 2(config-if)#switchport mode trunk
Switch 2(config-if)#switchport nonegotiate
Switch 2(config-if)#switchport trunk allowed vlan 2-4
Switch 2#copy running-config startup-config
```

Check the configurations with

```
Switch#show vlan brief
```

```
Switch#show interfaces fastEthernet 0/1 switchport
```

```
Switch#show interfaces fastEthernet 0/2 switchport
```

```
Switch#show interfaces fastEthernet 0/3 switchport
```

```
Switch#show interfaces fastEthernet 0/4 switchport
```

```
Switch#show interfaces trunk
```

To verify the communication between same VLANs

```
PC 1>ipconfig
```

```
PC>ping 192.168.1.3
```

```
PC>ping 192.168.1.4
```

```
PC>ping 192.168.1.6
```

Assignment:

Design a VLAN setup for the department of Computer engineering, University of Peradeniya. (You may use any tool for this)

- ❖ There are three groups – Lecturers, Students and Administration staff, Assign each group an independent VLAN (Lecturers, Students and Admin)
- ❖ Define the IP subnets on your preference (utilize IP addresses best possible)
  - o There are 15 lecturers
  - o 220 students and
  - o 5 in the admin staff
- ❖ In the simulation model you may have two from each group.
- ❖ Allow communication between the lecturers and the students (using VLAN configurations)