# I N D E X

NAME : A. Kavin    STD : IIInd year    SEC. : CSE-B    ROLL NO. 220704122

| S.No. | Date | Title | Page No. | Teacher's Sign/ Remarks |
|-------|------|-------|----------|--------------------------|
| 1. | 16/7/24 | Study of various network commands used in linux&windows | | |
| 2. | 23/7/24 | Study of network cables | | |
| 3. | 30/7/24 | Experiments of CISCO PACKET TRACER (simulation tool) | | |
| 4. | 6/8/24 | Setup and configure a LAN using a switch and Ethernet cable. | | |
| 5. | 9/8/24 | Experiments on packet capture tool: wireshark | | |
| 6. | 16/8/24 | Error correction at data link layer (Hamming code) | | |
| 7. | 23/8/24 | Flow control at data link layer (Sliding window protocol). | | |
| 8. | 10/9/24 | Stimulate virtual LAN Cisco Packet Tracer | | |
| 9. | 30/9/24 | Implementation of Subnetting in CISCO Packet tracer | | |
| 10. | 4/10/24 | Internetworking using router DHCP server and internet cloud | | |
| 11. | 8/10/24 | Stimulate static routing Protocol configuration using CISO Packet & RIP | | |
| 12. | 15/10/24 | echo client TCP/UDP sockets chart client server TCP/UDP | | |
| 13 | 22/10/24 | Write own Ping Problem | | |
| 14. | 25/10/24 | Raw sockets to implement Packet Sniffing | | |
| 15. | 29/10/24 | webilizer tool | | |
| | | Completed | | |

Palaniappa

Practical -8

Aim:-

a) Stimulate virtual LAN configuration using CISCO packet tracer simulation.

Packet tracer - configure VLANs and Trunking -
Physical mode topolog
-y
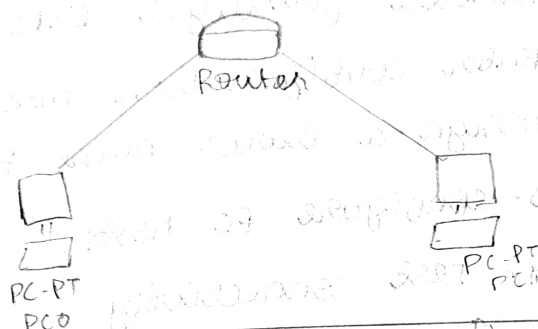


| Device | Interface | IP address | Subnet mask | Default Gateway |
|--------|-----------|-----------|-------------|-----------------|
| S1 | VLAN 1 | 192.168.1.11 | 255.255.255.0 | N/A |
| S2 | VLAN 1 | 192.168.1.12 | 255.255.255.0 | N/A |
| PC-A | NIC | 192.168.10 3 | 255.255.255.0 | 192.168.10.1 |
| PC-B | NIC | 192.168.10.4 | 255.255.255.0 | 192.168.10. |

## objectives

Part 1 : Built the network and configure basic device setting

Part 2 : Create VLANS and assign switch ports.

Part 3 : Maintain VLAN port assignment and the VLAN database

Part 4 : configure an 802.1Q Trunk between the devices

## Instruction

Part 1 : Build the network and configure basic device settings.

Step1 : Build the network as shown in topology.

a) click and drag both switch S1 and S2

b) click and drag both PC-A and PC-B to the table

c) Provide network connectivity by connecting copper straight-through cables

d) Connect console cables from device PC-A to S1 and from device PCB to S2

Step 2 :- configure basic settings for each switch

a) From the desktop tab on each PC, use the terminal to console into each switch and enabled priviliged EXEC mode.

b) Enter configuration mode

c) Assign a device name to each switch

Step 3 - configure PC hosts

Step 4 - Test connectivity

Part -2 ! create VLANs and assign switch ports

step 1: create VLANs on the switches open configuration window

a) Create the VLAN on S1

S1 (config)# vlan 10

S2 (config-vlan)# name operations

S1 (config-vlan)# VLAN 20

S1 (config-vlan)# name parking lot

S1 (config-vlan)# vlan 99

S1 (config-vlan)# name management

Step 2 : Assign VLANs to the correct switch interfaces

a) Assign VLANs to the interfaces on S1

1) Assign PC-A to the operation VLAN

S1 (config)# interface f0/6

S1 (config-if)# switchport mode acess

S1 (config-if)# switchport acess VLAN 10

2) From VLAN1, remove the management IP address and configure it on VLAN 99

    S1 (configure)# interface vlan 1
    S1(config-if)# no ip address
    S1(config-if)# interface vlan 99
    S1 config -if)# ip address 192.168.1.11 255.255.255.0
    S1 (config-if) # end

Part-3 : Maintain VLAN port assignment and VLAN databases.

Step1: Assign a VLAN to multiple interfaces.
open configuration window

a  S1 (configure)# interface range f0/11-24
    S1 (config-if-range)# switchport mode access
    S1 (config-if-range)# switchport access vlan 99
    S1 (config - if - range)# end

Step 2: Remove a VLAN assignment from an interface

Step 3: Remove a VLAN ID from the VLAN datab-ase

Part-4 : configure an 802.1Q Trunk between the switches.

Step 1: Use DTP to initiate trunking on Fo11

Step 2: Manually configure trunk interface Fo11

## Student observation

a) Draw and label VLAN for (2b)

TO visualise the VLAN setup, imagine three blocks (A, B, C) with 10 faculty member seated on it

```
┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ Block A      │   │ Block B      │   │ Block C      │
│ Faculty PCs  │   │ Faculty PCs  │   │ Faculty PCs  │
│ VLAN 10      │   │ VLAN 10      │   │ VLAN 10      │
└──────┬───────┘   └──────┬───────┘   └──────┬───────┘
       │                  │                  │
       ▼                  ▼                  ▼
┌─────────────────────────────────────────────────────┐
│  Robotics  Department  Switch (VLAN 10)             │
└─────────────────────────┬───────────────────────────┘
                   │       ▲
                   ▼       │
          ┌──────────────────────────┐
          │  Other Switch(s)         │
          └──────────────────────────┘
```
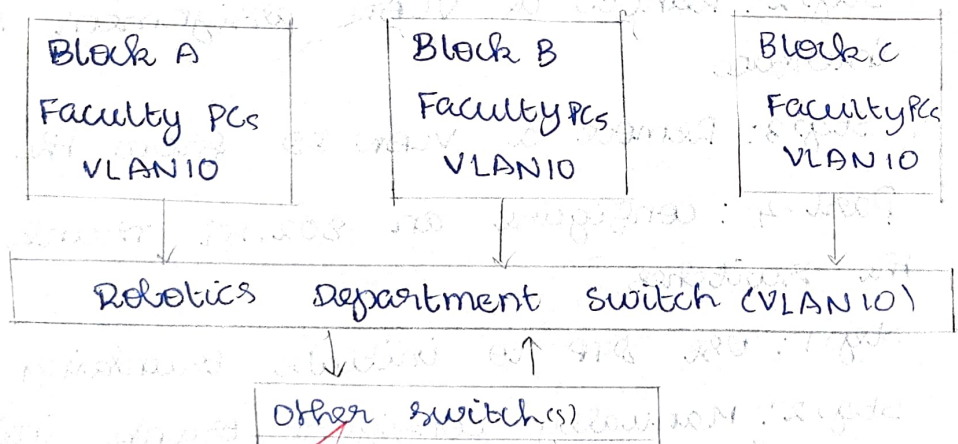
b) show ip configuration for each device.

| Device | IP address | Subnet mask | Gateway | VLAN |
|--------|-----------|-------------|---------|------|
| PC-1 | 192-168.10.2 | 255.255.255.0 | 192.168.10.1 | VLAN10 |
| PC-2 | 192.168.10.3 | 225.255.255.0 | 192.168.10.1 | VLAN10 |
| PC-3 | 192.168.10.4 | 255.255.255.0 | 192.168.10.1 | VLAN10 |
| PC-4 | 192.168.10.5 | 255.255.255.0 | 192.168.10.1 | VLAN10 |
| PC-5 | 192.168.10.6 | 255.255.255.0 | 192.168.10.1 | VLAN10 |
| PC-6 | 192.168.10.7 | 255.255.255.0 | 192.168.10.1 | VLAN10 |

c) write the commands used for VLAN configuration in switch

    Switch > enable
    Switch# configure terminal
    Switch(config)# vlan 10
    Switch(config-vlan)# name CSE
    Switch(config)# interface range fo/2-10
    Switch(config)# switch port mode access
    Switch(config)# switch access vlan 10
    Switch(config)# interface vlan 10
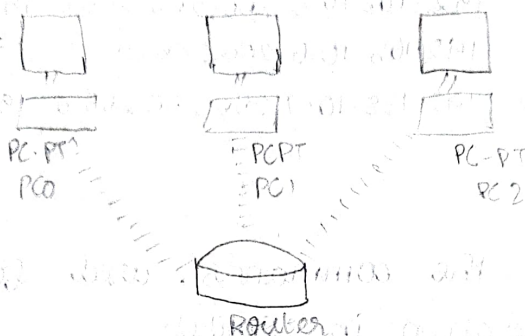    Switch(config)# no shutdown
    Switch(config)# exit

Result

    Thus virtual LAN configuration using
CISCO packet tracer is executed

# Practical - 8 b

## Aim

b) Configuration of wireless LAN using CISCO packet tracer



```
PC-PT        PCPT        PC-PT
PC0          PC1         PC 2

          Router
```

## Perform following configuration

* configure static IP on PC and wireless router
* Set SSID to mother network
* Set IP address of router to 192.168.0.1
* Set APC0 to 192.168.0.2, PC1 to 192.168.0.3 and PC2 to 192.168.0.4
* Secure your network by configuring WAP key
* connect PC's using WAP key

## Student's observation

a) What is SSID of a wireless router

The SSID is the name that identifies a wireless network. When you search for availabl wi-fi networks on your device the list of networks name displayed represents SSIDs of nearby wireless routers

b) What is security key in a wireless network?

A security key is a password used to protect a wireless network, ensuring only authorized devices can connect common types include WPA2 and WPA3

c) configure a simple wireless LAN

1) Access the router's
   'connect your laptop and enter IP address (192.168.1.1)

2) configure the SSID
   · set SSID (eg: Lab_WIFI)

3) choose a wireless channel
   · Set auto or manual

4) set security as open
   N wireless open network (WPA2.PSK
   × create a password ("12345678")

5) Assign DHCP server that automatically connect to wireless network

6) Save the settings and reboot the router or access point if necessary configuring

   SSID : Lab_wifi
   Channel : Auto
   Security : WPA2-PSK
   Security key : Lab 12345
   DHCP Range : 192.168.1.10-192.168.1.100

Result

Thus wireless LAN configuration is configured and executed