

Title: Share data within five desktop computers placed in the same LAN by creating physical network using different topologies.

Objective: To create a physical network using different topologies for the purpose of sharing data among five desktop computers placed in the same local area network (LAN).

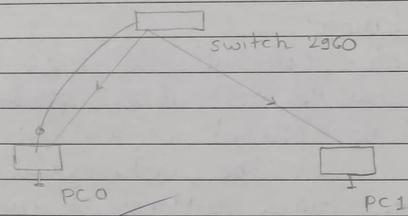
Mode used: physically connected network (LAN)

Theory:

1) LAN: A Local Area Network (LAN) is a collection of devices connected together in one physical location such as a building office ranging from a home network with one user to an enterprise network with thousands of users & devices in an office or school.

2) Topology: A network topology is the physical & logical arrangement of nodes with connection in networks. Nodes usually includes devices such as switches and routers & software with switch & router features. Network topologies are often represented as graph.

- Title: Implement and Execute VLAN1 and VLAN2 in CISCO packet tracer on switch to split the network and observe VLAN table.
- Objective: To study packet transfer between two machines via a switch.
- Mode used: CISCO packet tracer.
- Design:



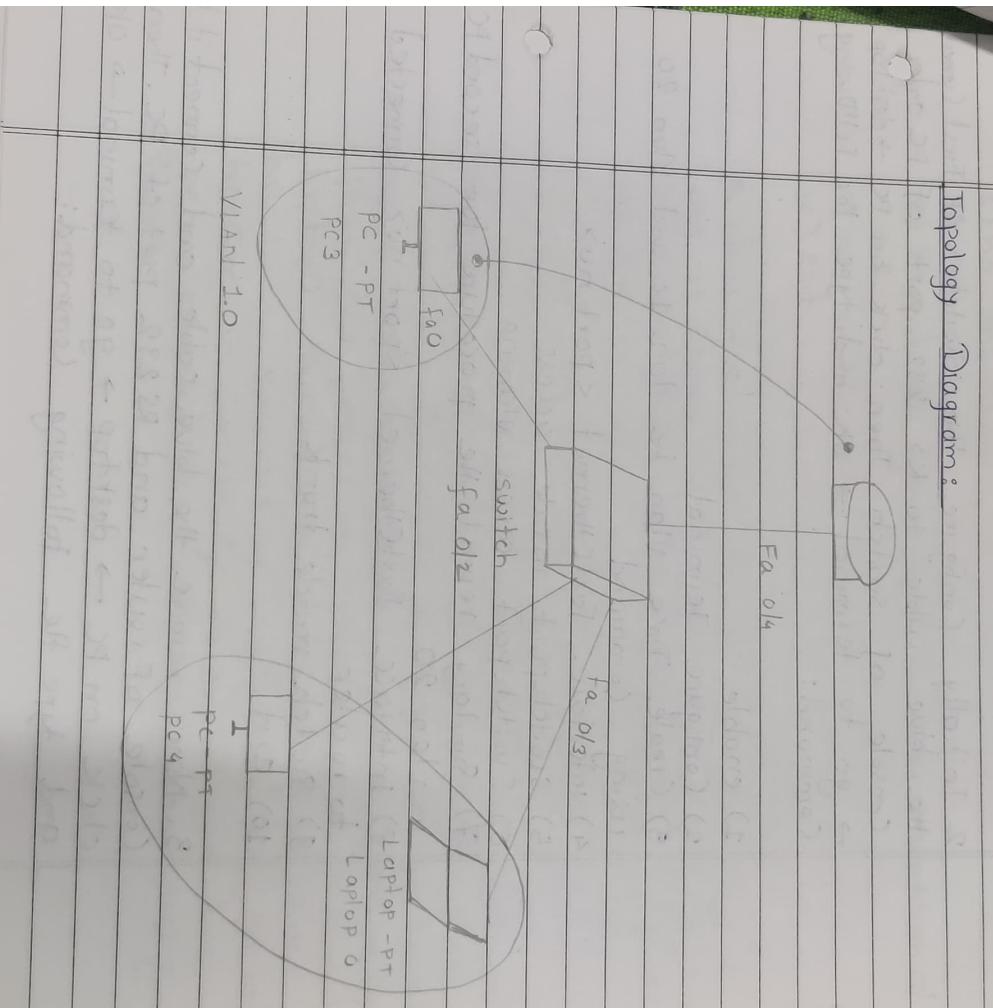
- Steps and Commands
  1. First, we connected two pc through a switch
  2. Then the IP address was assigned to each pc.
  3. As soon as we connect the pc in the switch their IP address and MAC address are stored in the switch in the data link layer.
  4. If pc1 is sending the packet, then the packet will contain a source address in the destination address.

Date:      

Title: To make configuration of the VLAN1 and VLAN2 over the router and observe packet transfer.

Devices: Switch, Router, PCs

Topology Diagram:



## Assignment - 04

Date: [ ] [ ]

- Aim : Implement and execute VLAN 1 and 2 in CISCO packet tracer with one router and two switches and observe route table and VLAN database
- Platform : CISCO packet Tracer.
- Devices required : pc, Switch, Router.
- Implementation:
  - 1) Firstly create a LAN and separate it logically by creating two VLAN's, two system in one VLAN and remaining two other VLAN.
  - 2) Next step is to make connection between System and switches , the routers with the switching.
  - 3) Now create two VLANs and put each system of a switch in a single VLAN and perform the same for other switch Now show the VLAN database using " show vtp status " command.
  - 4) Connect both the switches and set port to trunk mode using the commands " interface fastethernet 0/1 " " switchport mode trunk "

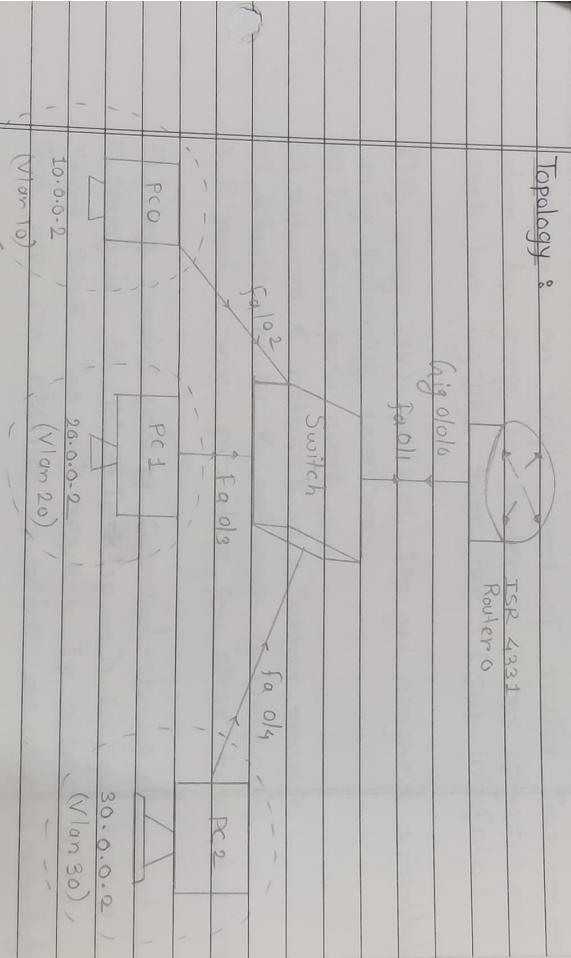
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Title: Implementing class A network over router and using DHCP protocol to automatically assign IP addresses (VLAN)

Objective: To configure a network using DHCP protocol for assigning auto IP addresses.

Mode used: CISCO packet tracer

Topology :



Steps / Commands:

- Collect and take router, switch, nodes etc.
- Anrange in topological manner as shown above.
- Create three VLANs (10,20,30) by using following

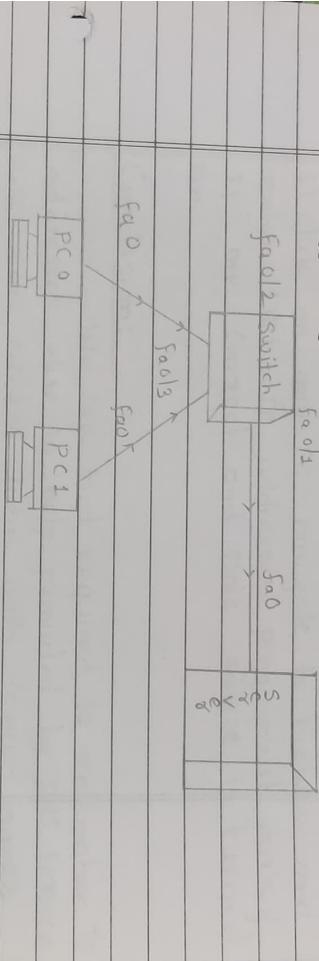
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Title: Implement DHCP, WEB and DNS server.

Objective: To observe (i) Auto IP Configuration through  
DHCP server  
(ii) WEB Server access through browser on  
host machine  
(iii) DNS servers to naming the WEB access.

Mode used: CISCO packet tracer.

Topology Design:



DNS stands for Domain Name System. It provides mapping between host name and its numerical address. It translates domain name into IP addresses.

Steps / Commands:-

- 1) Create topology of router, Switch and PCs as shown above.
- 2) Configure Server by giving IP address, subnet mask default gateway and DNS by clicking Server → Desktop → IP Configuration.

Title : Implement FTP and SNMP Server.

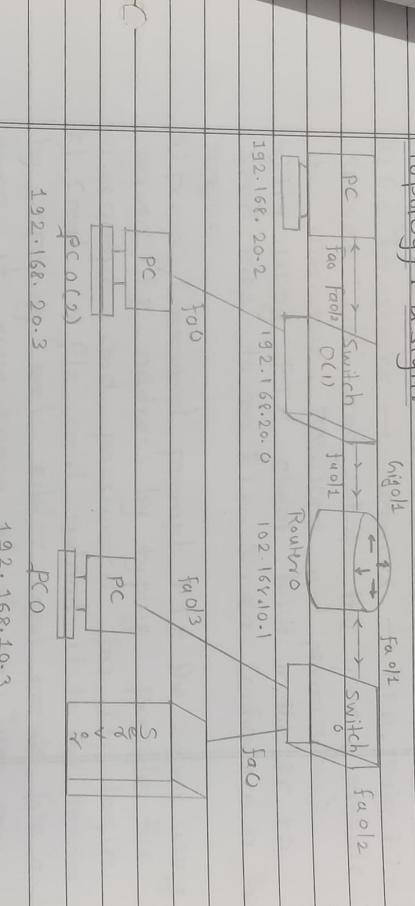
Objective : To observe:

- (a) File transmission in the local network
- (b) E-mail transmission in the local network.

Mode used: CISCO packet tracer.

a) File transmission in the local network.

Topology / Design:



FTP (File Transfer Protocol) is standard network protocol used for the transfer of computer files between a client and server on computer network. It is provided by TCP/IP used for transmitting the files from one host to another. Main use of FTP to transfer web page files from creator to the computer that acts as a

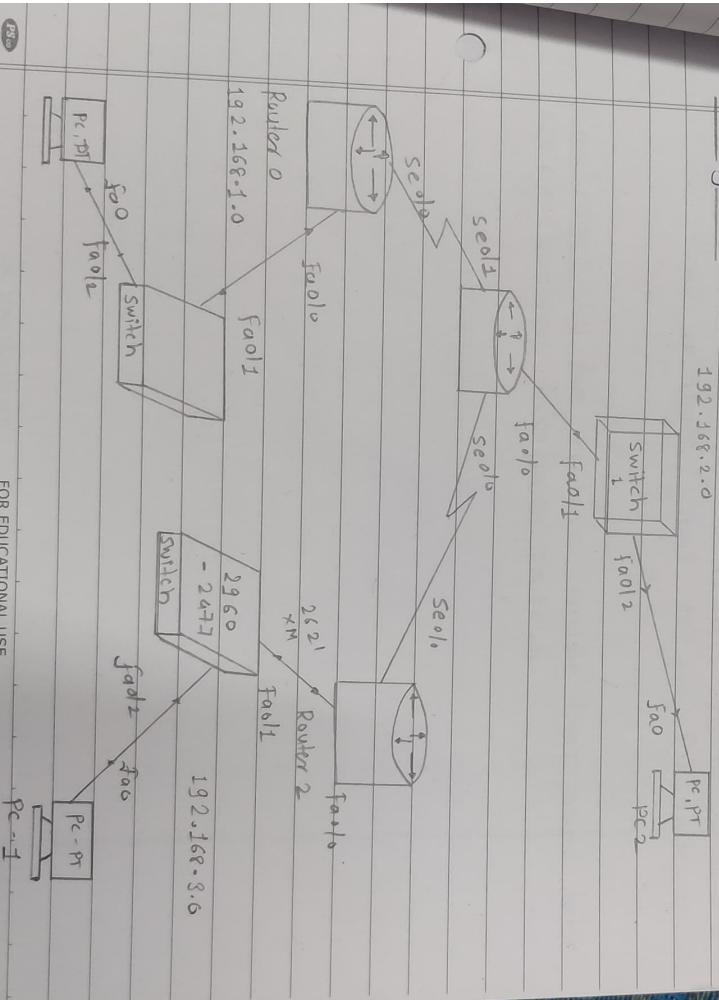
Title : Routing Information Protocol.

Objective : To observe the on-demand upgradation of routing table to configure multiple gateways on Internet.

Mode used : CISCO Packet tracer

Devices required : PC, Switch (2960 - 24TT) and Router (2621 XM)

Design :



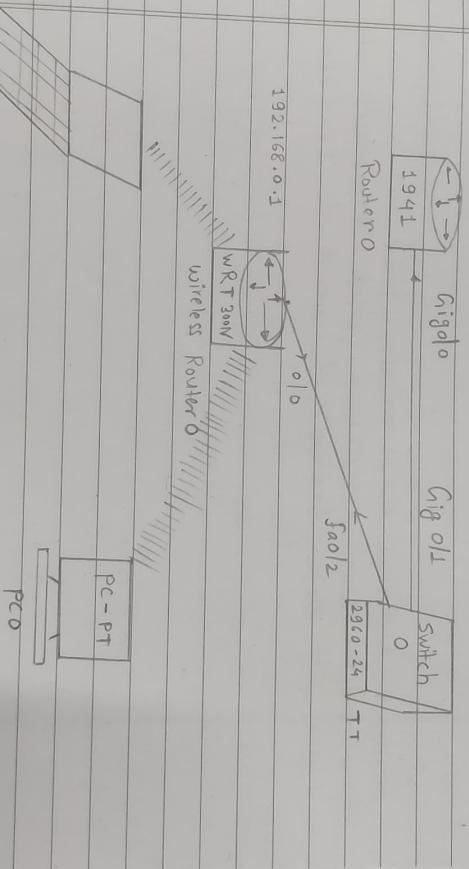
Title: Configure Wi-Fi router

Objective: To configure Wi-Fi router using DHCP and Wireless Encryption Protocol (WEP) in local Networks.

Mode used: CISCO packet tracer

Devices Required: PC, Switch (2960-24TT), Router (1941) and Wireless Router (WRT 300N)

Design:



Laptop - PT  
Laptop 0.

Title: Designing a Campus network with 7 department each having a dedicated network of class A.

Objective: Designing required type of network and to deploy suitable network components such as servers, routers, WiFi routers & switches. Finally, observing connectivity using the ping command.

Mode Used: CISCO packet tracer.

Device Required: PC switch and Router.

Design: (As per screenshot attached)

Steps For Implementation:

- i) Create LAN of each department IT, CSE, EEE, MECH, CIVIL, ELECTRICAL, also create WIC and Exam cell. Assign class A IP to each networking device to the LANs respectively.
- ii) Configure the switch, router and wireless router in order to establish connection in network.
- iii) Create three servers in WIC. Configure them and enable respective services.
- iv) Assign an IP route to all routers present in the network.
- v) Use ping command in cmd of one end device to communicate with devices in (i) Router (ii) INTRA LAN.

Conclusion: Communication between system in different LANs which are in different systems through routers. FOR EDUCATIONAL USE

Title: Using wireshark Capturing live packets from LAN.

Objective: To analyze Component of TCP header by capturing live packets from LAN.

Mode used: Wireshark Platform.

Steps for Implementation:

1) We are required to use wireshark to obtain a packet tracer of the TCP transfer of a file from your Computer to a remote Server. This is done by accessing a Web page that will allows to enter the name of file stored on your computer and then transfer the file to web server using the HTTP POST method.

2) Using POST method rather than GET method as we are about to transfer a large amount of data from Computer to another. This is by running Wireshark during this time to obtain trace of TCP Segments sent and received.

3) Steps in Wireshark:-

- i) start up your web browser, visit <http://gala.cs.umb.edu/> wireshark labs / alice.txt and receive an ASC II copy of Alice in Wonderland . store this in your pc .
- ii) Visit <http://gala.cs.csass.edu/wireshark-labs/TCP-Wireshark-flet.html>.

Title: Identify password with HTTP and HTTPS request using wireshark

Objective: To identify password with HTTP and HTTPS request.

Mode used: Wireshark sniffer Software

Part A) With HTTP

- i) Open wireshark. Go to the network from which you are connected. protocol list will be displayed
- ii) Select any unsecured or HTTP website and login that event will be highlighted on wireshark.
- iii) Go to follow after right clicking on the HTTP login page. Visit to the TCP stream.
- iv) New window will open on which username and password will get displayed.

Part B) With HTTPS

- i) Open Wireshark software. Go to the network from which you are connected. Ex. wifi protocols list will be displayed which are in use Communi-cating.
- ii) Apply filter as packet bytes and string for finding the browser of https website. Ex. Codechef machine, etc Go to client hello.
- iii) By right clicking on it enter into the TCP section. Now on the window opening from bottom side you will be unable to see http information.