Configuration of Network Components.

1? **Aim :-** To study the following network devices in detail:
PC, Server, Repeater, Hub, Switch, Bridge, Router, Gateway, Transmission medium.

APPARATUS (software) :- CISCO Packet tracer.

procedure :-

* **Node :-** In a communications network, a network node is a connection point that can receive, create, store or send data along distributed network routes.

* **Repeater :-** A repeater is an electronic device that receives a signal and retransmits it at higher level, so that the signal can cover longer distance.

* **Hub :-** It is a device for connectiong multiple twisted pair or fiber optic Ethernet devices together and making them act as a single network segment.

* **Switch :-** It is a computer networking device that connects network segments. The term commonly refers to a network bridge that processes & routes at data link layer (layer 2) of OSI model.

* **Bridge :-** It connects multiple network segments at the data link layer (layer 2) of OSI model. In Ethern networks, the term bridge formally means a dev behaves according to IEEE 802.-

* **Router :-** It is an electronic device that interconn
two or more computer networks and selectively inter
packets of data b/w them.

* **Gate way :-** In a communication network, a network
node equipped for interfacing with another
network that uses different protocols.

* **Server :-** A server is a type of computer device on a
network that manages network resources.

* **Transmission media :-** The medium through which the signal
travel from one device to another.

2) **Aim :-** To
trace
using

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Result :- Thus the network components are studied in de

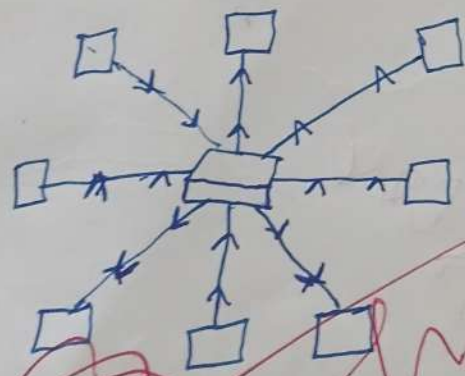Implementation of star topology using Packet tracer

2.) **Aim:-** TO implementation of star topology using Packet tracer and hence to transmit data b/w devices connected using star topology.

APPARATUS (software)- Cisco Packet tracer.

Procedure:-

step 1:- start Packet tracer , step 2:- choosing devices & connection

step 3:- Building the topology - adding hosts

    single click on the End devices.

    single click on the Generic host.

step 4:- Building the topology - connecting the hosts to switches

    select a switch by clicking once on switch & once on 2950

step 5:- connect PC's to switch by first choosing connections.

step 6:- configuring IP addresses and subnet masks on hosts.

step 7:- TO confirm Data transfer b/w devices.

DIAGRAM:-

Result:- Thus the star topology is implemented with Packet tracer.

EXPERIMENT - 4
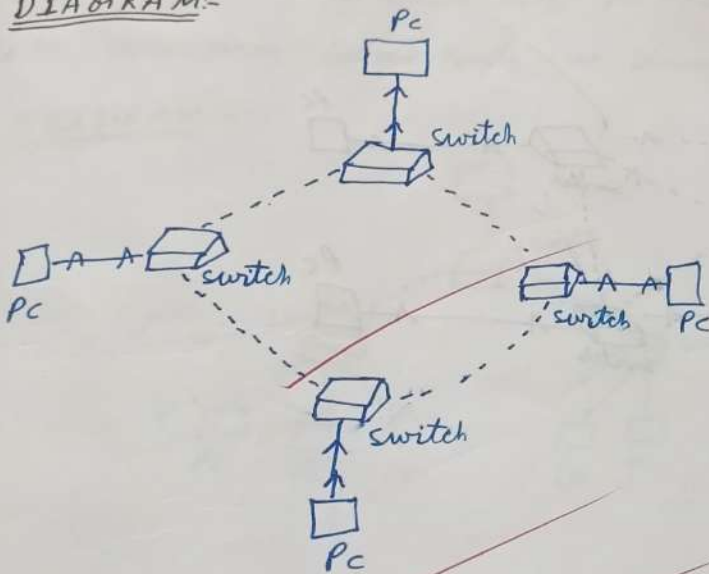
Implementation of ring topology using Packet tracer.

4) **Aim:-** To implementation of ring topology using packet tracer.

APPARATUS (software):- Cisco Packet tracer.

Procedure :-

step 1 :- Start Packet tracer, step 2 :- choosing Devices & connections

step 3 :- Building the topology - Adding hosts.

step 4 :- Building the topology - connecting the hosts to switches.

step 5 :- Connect PC's to switch by first choosing connections.

step 6 :- Configuring IP addresses & subnet masks on hosts.

step 7 :- To confirm data transfer b/w devices.

DIAGRAM:-

Result:- Thus the ring topology is implement with Packet tracer.

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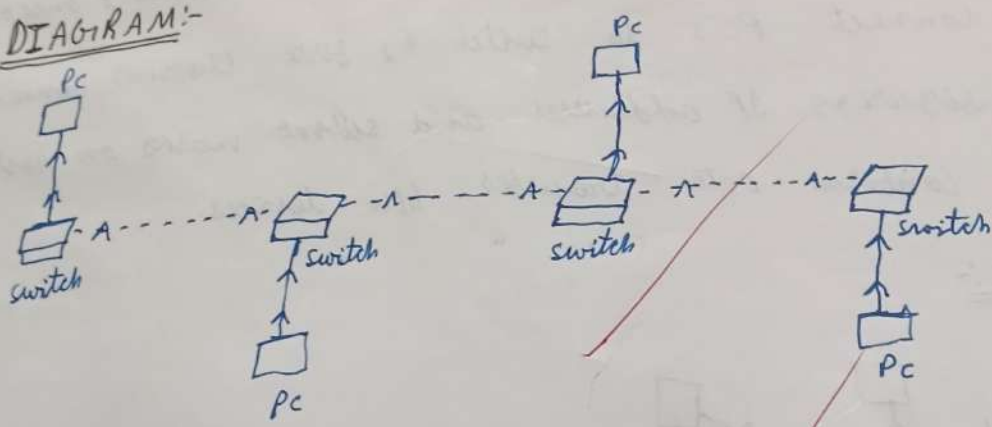3) Implementation of Bus topology using Packet tracer.

Aim:- To implementation of Bus topology using Packet tracer.

APPARATUS (software):- Cisco packet tracer.

Procedure:-

Step 1:- Start Packet tracer, step 2:- Choosing Devices & connect

step 3:- Building the topology - adding hosts.

step 4:- Building the topology - connecting the hosts to switch

step 5:- Connect PC's to switch by first choosing connect

step 6:- Configuring IP addresses & subnet masks on hosts.

step 7:- To Confirm Data transfer b/w devices.

DIAGRAM:-

RESULT:- Thus the Bus topology implemented with Packe

21/8/25

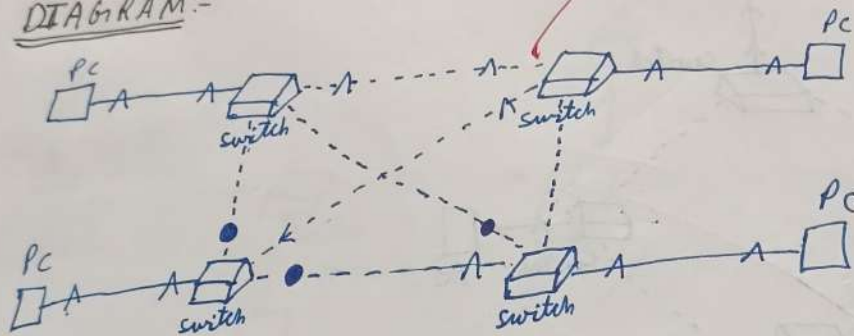Implementation of mesh topology using Packet tracer

5) **Aim :-** To implementation of mesh topology using Pa...
tracer and hence to transmit data b/w devices

APPARATUS (software) :- cisco packet tracer.

procedure :-

step 1 :- start packet tracer ; step 2 :- choosing devices & connec...

step 3 :- Building the topology - adding hosts.

step 4 :- Building the topology - connecting hosts to switches

step 5 :- connect PC's to switch by first choosing connection

step 6 :- configuring IP addresses & subnet masks on hosts.

step 7 :- To confirm Data transfer b/w devices.

DIAGRAM :-

Result :- Thus the mesh topology is implemented with Packet

Implementation of tree topology using Packet Tracer.
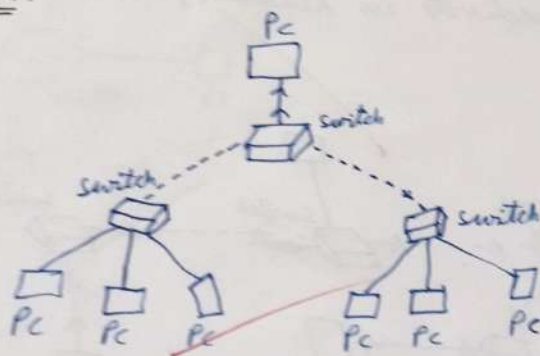
Aim:- To implementation of tree topology using Packet tracer.

APPARATUS (software):- Cisco Packet Tracer

Procedure:-

Step 1:- Start Packet Tracer . Step 2:- choosing devices & connections.

Step 3:- Building the topology - Adding hosts

Step 4:- Building the star topology - connecting hosts to hubs.

Step 5:- Connect PC's to hub by first choosing connections

Step 6:- Building the tree topology - connecting hubs to active hub.

Step 7:- Configuring IP address & subnet marks on host.

Step 8:- Verifying connectivity in real time mode.

Step 9:- Verifying connectivity in simulation mode.

DIAGRAM:-

Result:- Thus the tree topology is implemented with Packet trace

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Implementation of hybrid topology (Bus and ring topology) using packet tracer.

7) **Aim :-** To implementation of hybrid topology using packet tracer and hence to transmit data b/w devices.

APPARATUS (software):- Cisco Packet tracer.

Procedure :-

step 1:- start Packet tracer ; step 2:- choosing devices & connection

step 3:- Building the topology - adding hosts.

step 4:- Building the Bus topology - connecting hosts to hubs.

step 5:- Building the ring/tree topology - connecting hosts to hubs.

step 6:- connect PC's to hub by first choosing connections.

step 7:- configuring IP addresses subnet masks on hosts.

step 8:- verifying connectivity in Realtime / simulation mode.

DIAGRAM :-
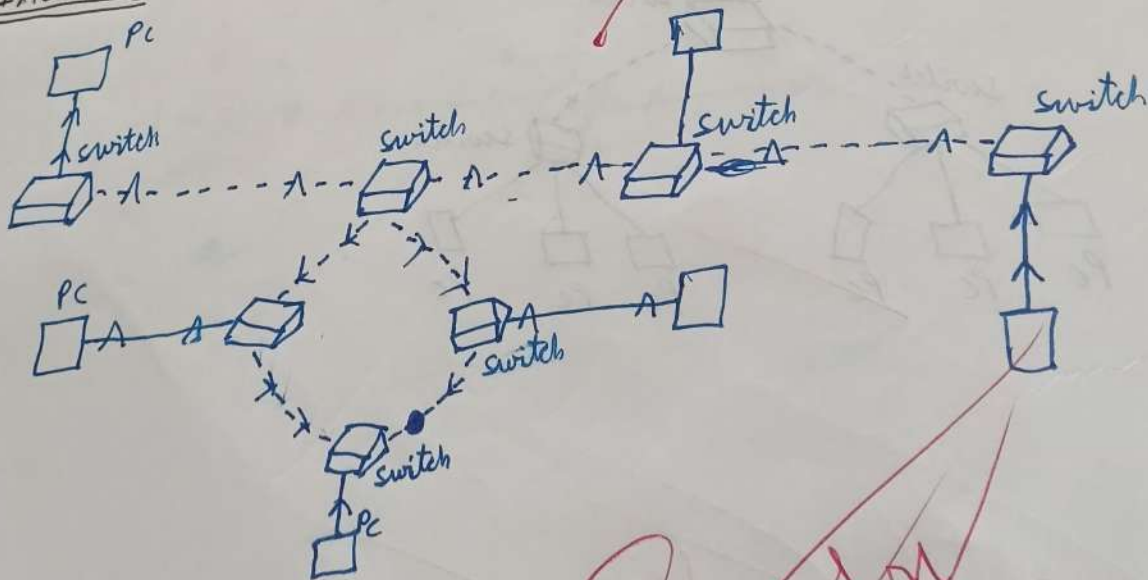
Result :- Thus the hybrid topology is implemented wit

EXPERIMENT-10

Data link layer trabbic simulation using Packet tracer

10) <u>Aim</u>:- To implement data link layer trabbic simulation using Packet tracer analysis of CSMA/CD & CSMA/CA.

<u>APPARATUS (software)</u>:- Cisco Packet tracer

<u>Requirement</u>:- End device, cable, switch

<u>Procedure</u>:-

step 1:- Click on end devices, select generic PC's drag & drop it on the window. Click on switch drag & drop it on window.
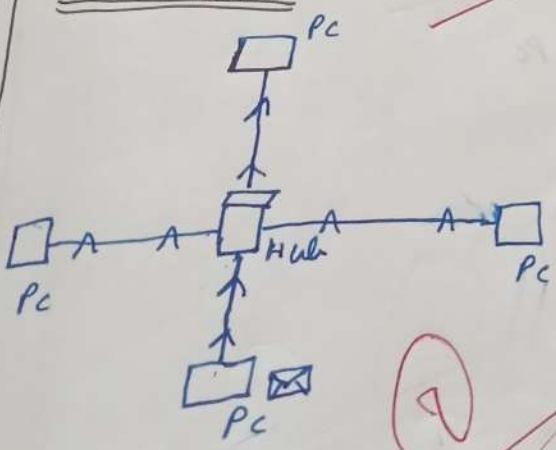
step 2:- Select the straight through cable and connect all end device to switch. Assign the IP address for all end devices.

step 3:- Now set the IP address to host A(192.168.1.1) in static mode. Simarily to host B(192.168.1.2) & host C(192.168.1.2)

step 4:- To view the IP address, give IP conf command in

step 5:- Now display the Packet transmission in simulation mode.

<u>DIAGRAM</u>:-

<u>Result</u>:- Thus link layer trabbic simulation using Packet tracer analysis of CSMA/CD & CSMA/CA is implement

Data link layer traffic simulation using Packet tracer analysis of LLDP.

9) **Aim :-** TO analyze the link layer discovery protocol traffic using cisco packet tracer by configuring LLDP on routers and switches in given network topology.
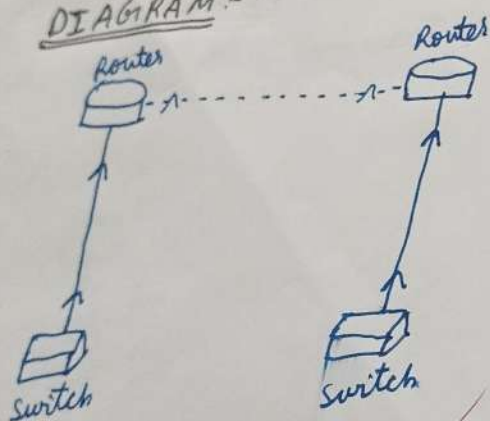
APPARATUS (software) :- (~~Routes, switch~~ 1) cisco Packet tracer

Requirements :- Router ; switch ; cable

Procedure :-

1) open Packet tracer

2) Add devices

3) Configure LLDP on routers and switches.

4) verify LLDP configuration.

DIAGRAM :-

Result :- Thus link layer discovery protocol (LLDP) traffic using cisco packet tracer in given network topology.

EXPERIMENT - 8

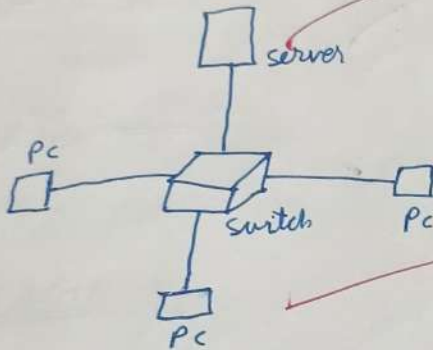Data link layer traffic simulation using Packet tracer analysis of ARP

8)

Aim:- To implement data link layer traffic simulation using Packet tracer analysis of ARP.

APPARATUS (software):- Cisco Packet tracer.

Procedure :-

1) open Packet tracer
2) click on list the available capture
3) Choose the PC's server and hub.
4) Later give connection from hub to remaining pc's
5) Give IP address to Pc's with configuration.
6) Simulate the source and destination.

DIAGRAM :-

Result :- Thus data link layer traffic simulation using Packet tracer analysis of ARP is implemented

EXPERIMENT-12

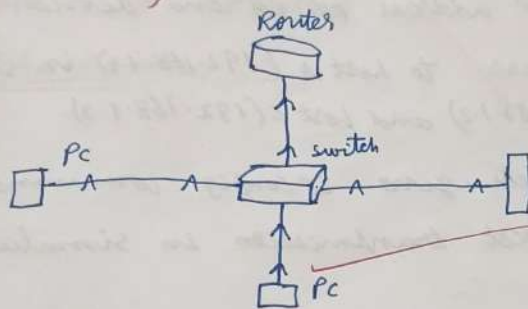Design the functionalities and exploration of TCP using Packet tracer.

(12) **Aim:-** To design the functionalities and exploration of TCP using Packet tracer.

APPARATUS (software):- Cisco Packet tracer

Procedure:-

Step 1:- Setup the network topology ; Step 2:- Configure IP address
Step 3:- Configure the router ; Step 4:- Test the connection.
Step 5:- Explore TCP functionalities.

DIAGRAM:-

Router

Pc ────A────A──── switch ──A────A────

Pc

Result:- Thus functionalisties and exploration of TCP using Packet trades.

EXPERIMENT-11

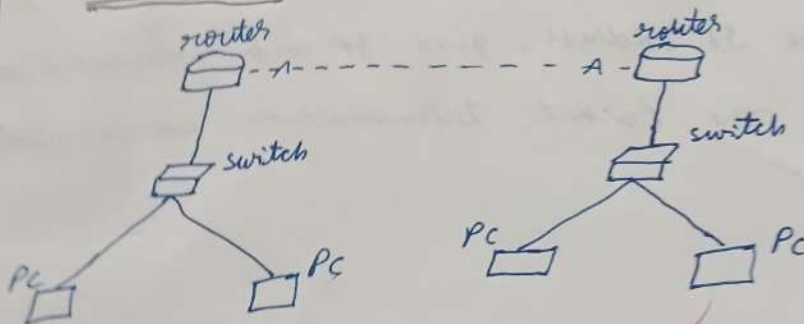Configuration of a simple Routing in a Packet tracer using a simple topology with two routers

(1) **Aim:-** TO Configure a router using Packet tracer software and hence to transmit data b/w devices in real time and simulation mode

APPARATUS (software):- Cisco Packet tracer

Procedure:-

step 1:- start Packet tracer ; step 2:- Choosing Devices & connection

step 3:- single click on end devices.

step 4:- Configuring IP addresses, Gate way and subnet masks on

step 5:- verifying connectivity in real time/simulation mode.

DIAGRAM:-

Result:- Thus Configuration of a simple state routing Packet tracer using a simple topology with 2 routers

Design the network model for subnetting - class c address
using Packet tracer

13) **Aim:-** To design the network model for subnetting class c address
using Packet tracer

APPARATUS (software):- Cisco Packet tracer.

Procedure:-

step 1:- Click on end device; select generic PC's drag and drop
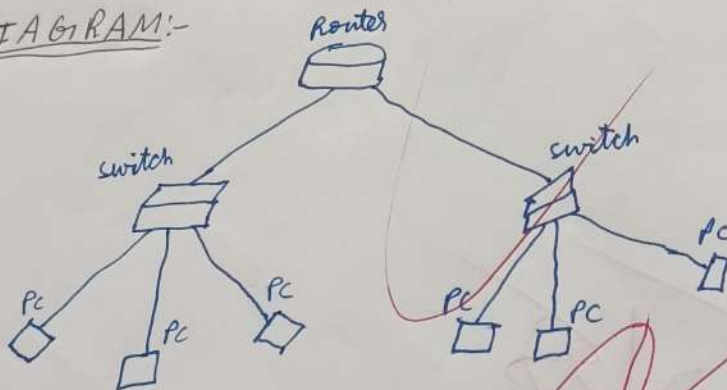on window. Switch drag and drop it on window.

step 2:- Select the straight through cable and connect all ...
to switch. Assign the IP address for all end devices.

step 3:- Now set the IP address to host A (192.168.1.1) in static
Simarily to host B (192.168.1.2) and host C (192.168.1.3).

step 4:- To view the IP address, give ip config command.

step 5:- Now display the Packet transmission in simulation.

DIAGRAM:-

Result :- Thus