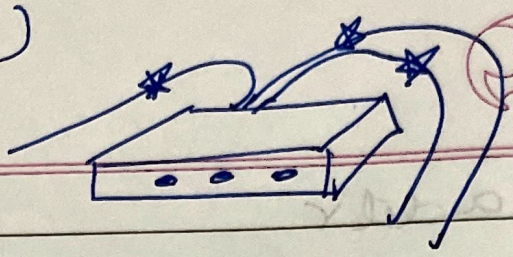
(LAN)



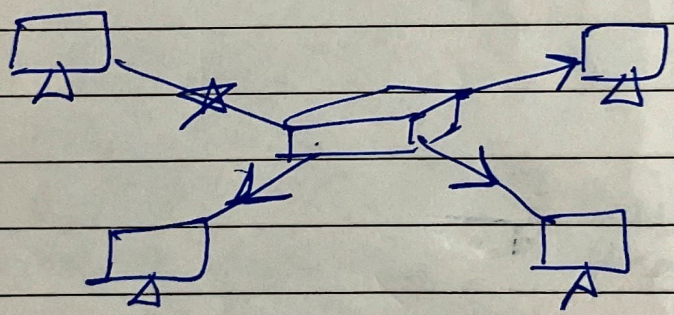
HUB

purpose :— connect devices to internal NW

multiple ports :— accept ethernet connn

X Intelligent :— x filter data,
x when the data is to be sent?

when data P arrives to one of its ports its copied to all off the ports [Broadcast]

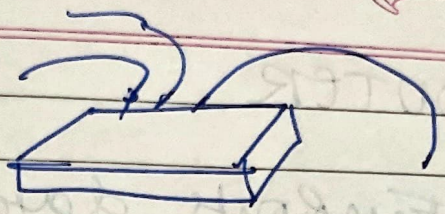


X Security
✓ traffic
- Waste of BW

(LAN)

classmate
Date
Page

SWITCH



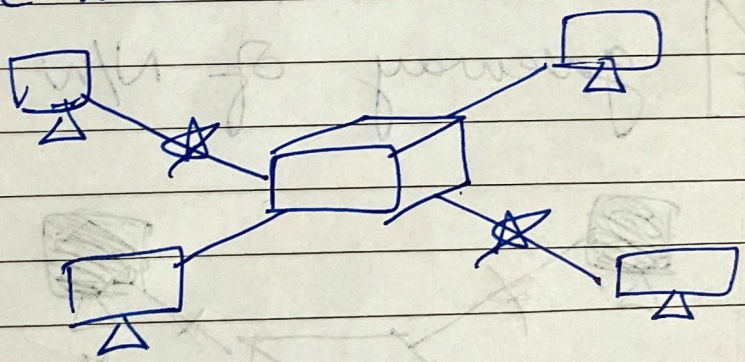
Similar to Hub
has multiple ports for Ethernet conn^n

✓ Intelligent ✓ can learn Physical Addr of devices connected.

port	Device	MAC adr
1	✓	

& stores it in

When data P is sent its sent to directed port only.
Unlike HUB



using MAC

✗ traffic
✓ Security

Exchange data within (LAN) home, Business

own NW

Reads	MAC addr

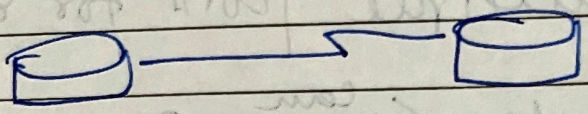
Exchange data outside NW

Router

reads	IP addr

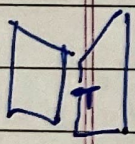
ROUTER

Transfers Routs data from 1 NW to another using their IP

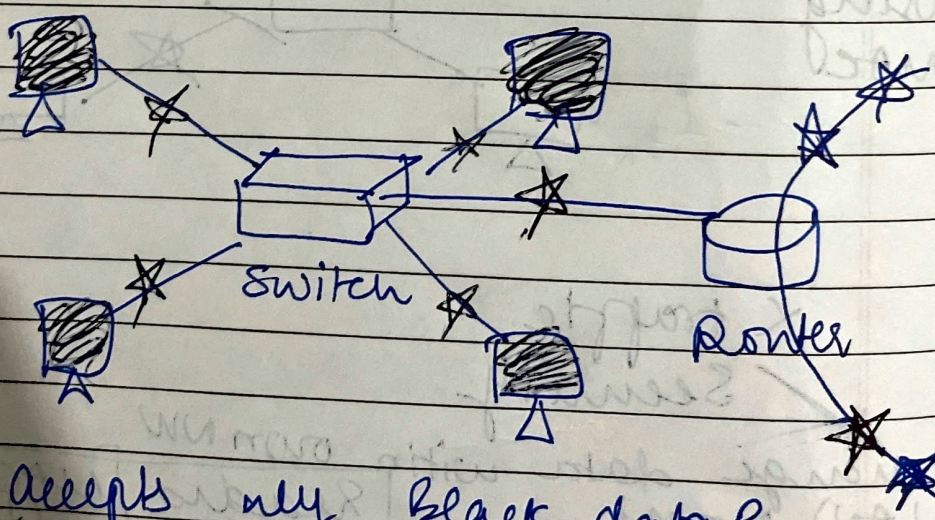


when a data P is recived from a router the Router inspects data P IP addr if it was ment for his NW or another

if it was for him it recives it



gateway of N/W



accepts only Black data P as it matches ten IP addr

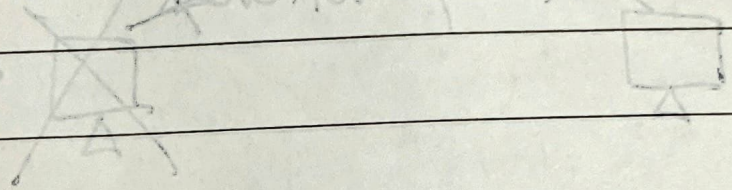
classmate

Date _____

Page _____

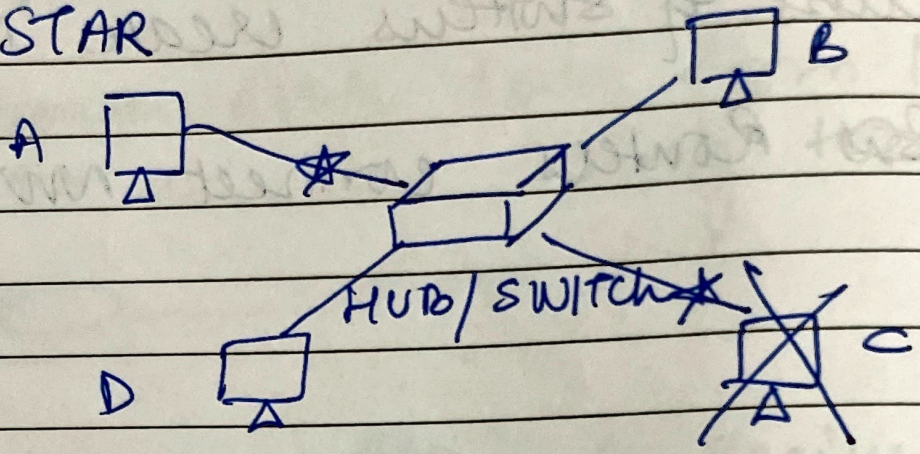
Hubs & Switches create NW

& Routers connect NW



Topologies.

STAR



Central wiring pt → HUB/ Switch

all devices are connected.

all data passes thru this pt

A → → C

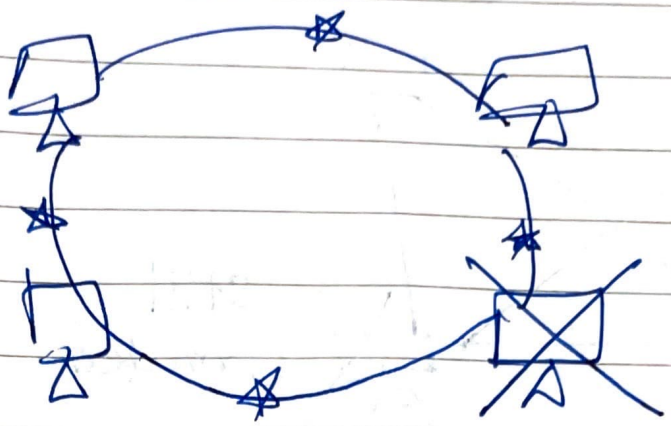
A → → B

If one fail NW is fine

If fails NW is down.

'Single pt failure'

RING



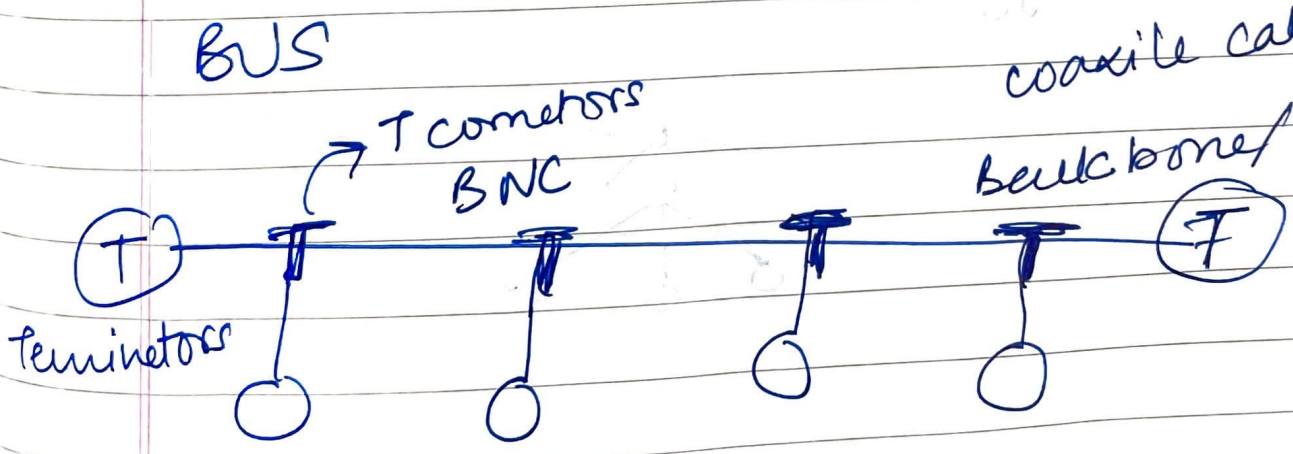
Single pt failure

each ☐ connected to each other in a loop ○

data P is sent around the ring to reach destn

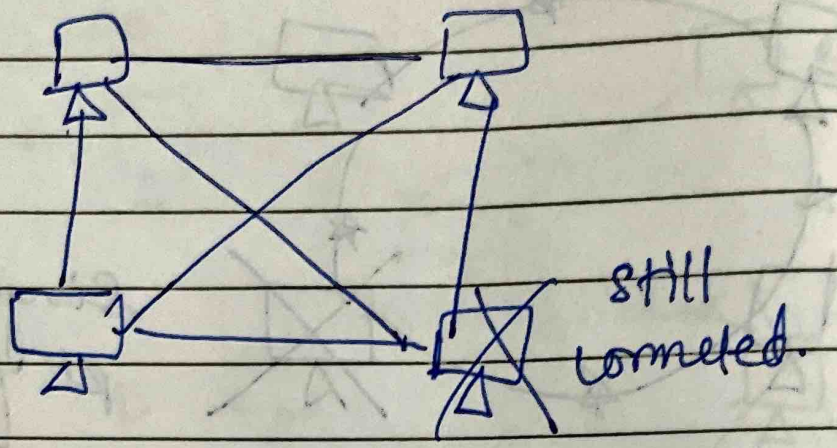
old
easy to install

BUS



Broadcasting

MESH



each is connected to each.

12 connn

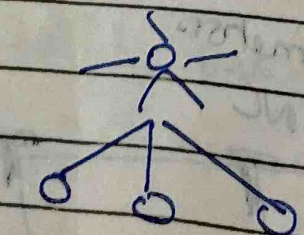
Expensive.

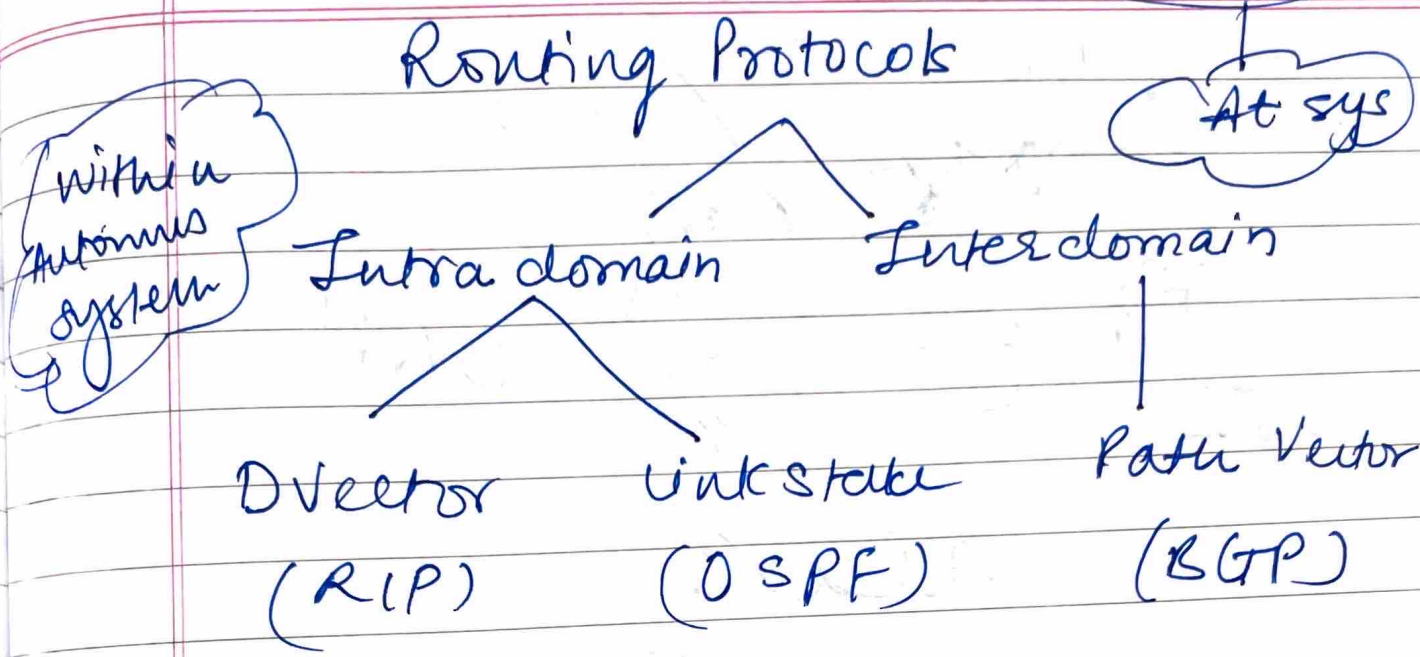
(WAN) → Internet

wide area NW

Very Redundent

Tree = Bus + Star Topology





DHCP install.

```
sudo apt update
sudo apt upgrade

sudo apt install isc-dhcp-server

sudo systemctl start isc-dhcp-server
sudo systemctl enable isc-dhcp-server

cd /etc/dhcp/

sudo cp dhcpd.conf dhcpd.conf.backup

sudo touch dhcpd.conf

nano dhcpd.conf

[Opens a terminal]

default-lease-time 600;
max-lease-time 86400;
option broadcast-address
option subnet-mask 255.255.255.0;
option broadcast-address 20.0.0.255;
option domain-name "server.local";
authoritative;
subnet 20.0.0.0 netmask 255.255.255.0{
    range 20.0.0.5 20.0.0.200;
    option routers 20.0.0.1;
}   option domain-name-servers 20.0.0.1;
```

then
Ctrl +S to save
Ctrl +x to close

> cd /etc/default
ls
nano isc-dhcp-server

interfacesV4 = " "
interfacesV6 = " " Empty

What N/W interface we have?

ip addr

put "enp2s0"

systemctl restart isc-dhcp-server
systemctl ~~restart~~ isc-dhcp-server
Status

if failed.

ufw enable
ifconfig enp2s0 20.0.0.1
again

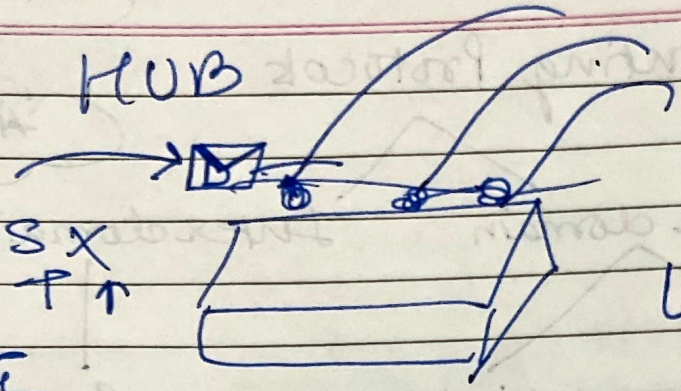
now "active"

ip addr

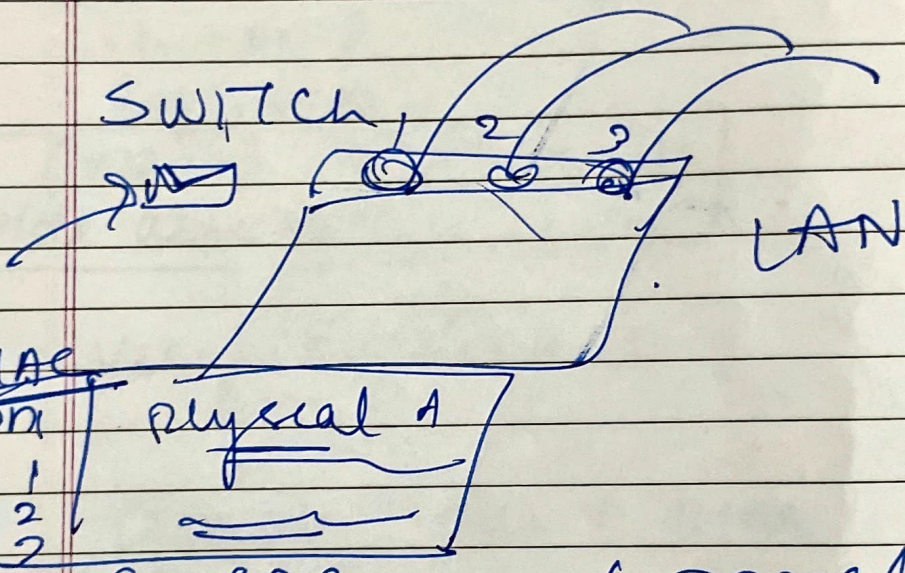
eth0 : addr is assigned to it

ipconfig

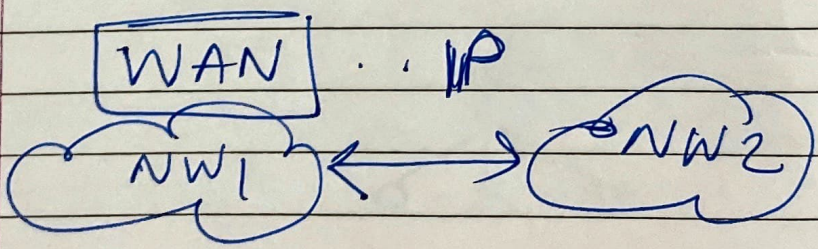
Dynamic host config Protocol

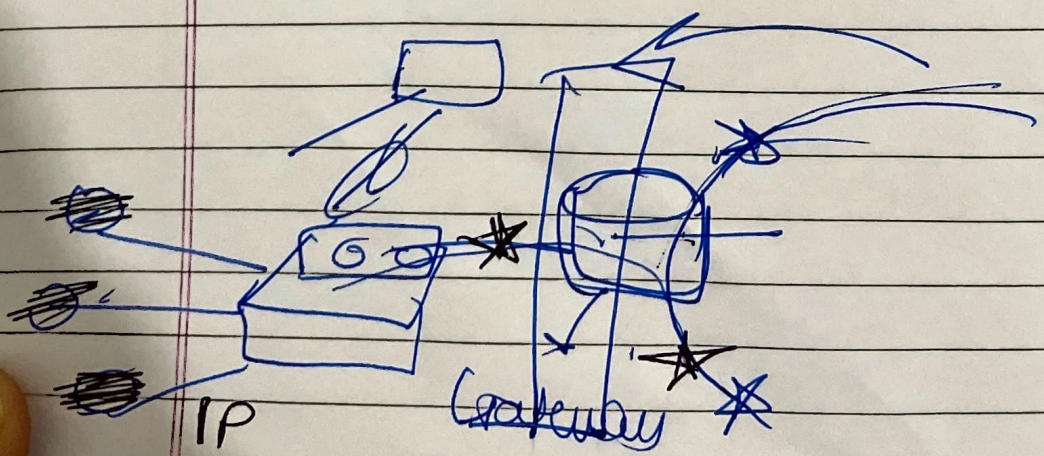


create



connect





RIP

Letters — data packets
postal service — RIP protocol
Towns → NW devices.

1) Collecting info [Router]
Letters.

2) Create table exchange Routers [RIP]

dest	cost	time

3) Update Routes

4) Selecting Routes

5) Continous Update