CMP 206

JOTTINGS NOTE

200LVL 2ND SEMESTER

CMP 206

10/06/22

INTRODUCTION

How you arrage the buildings of a street and how you organized the roads or streets.

This also applies computer.

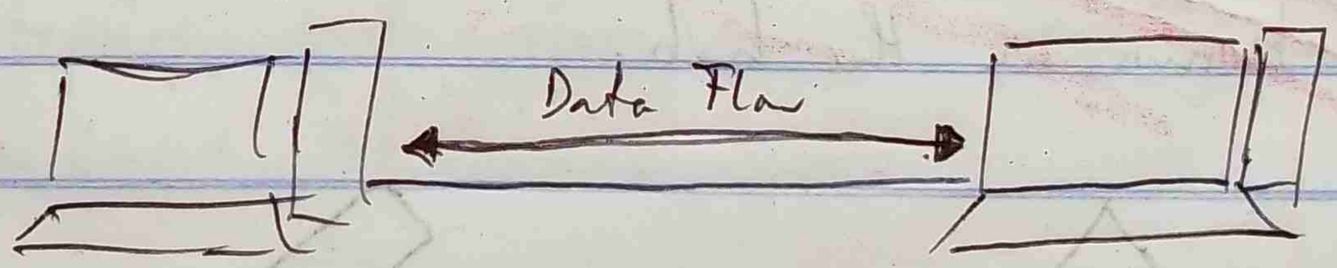
What is a network Topology?

A network topology is the arrangement in which network devices and user devices are connected.

Types

- Point-to-Point

A device that's directly connected. e.g transferring a file from your Phone to your laptop



SECRET: All our devices use a point-to-point typology e.g connecting to the wifi and so-on.

Bus Topology

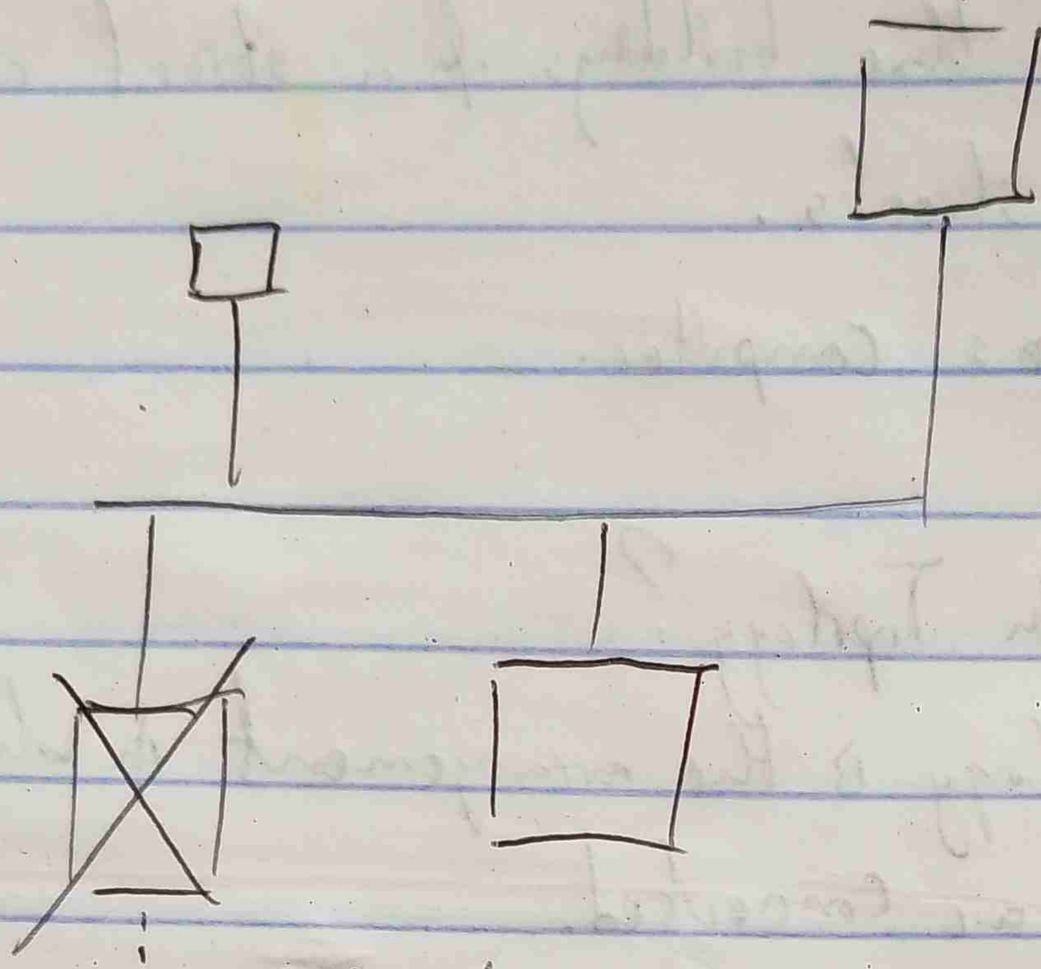
In this topology all the devices share a single-Communication line/cable

There is a problem with this topology e.g when all devices try to use this line at the same time.

CSMA/CD was and is used to combat this problem

CSMA/CD: Collision Detection

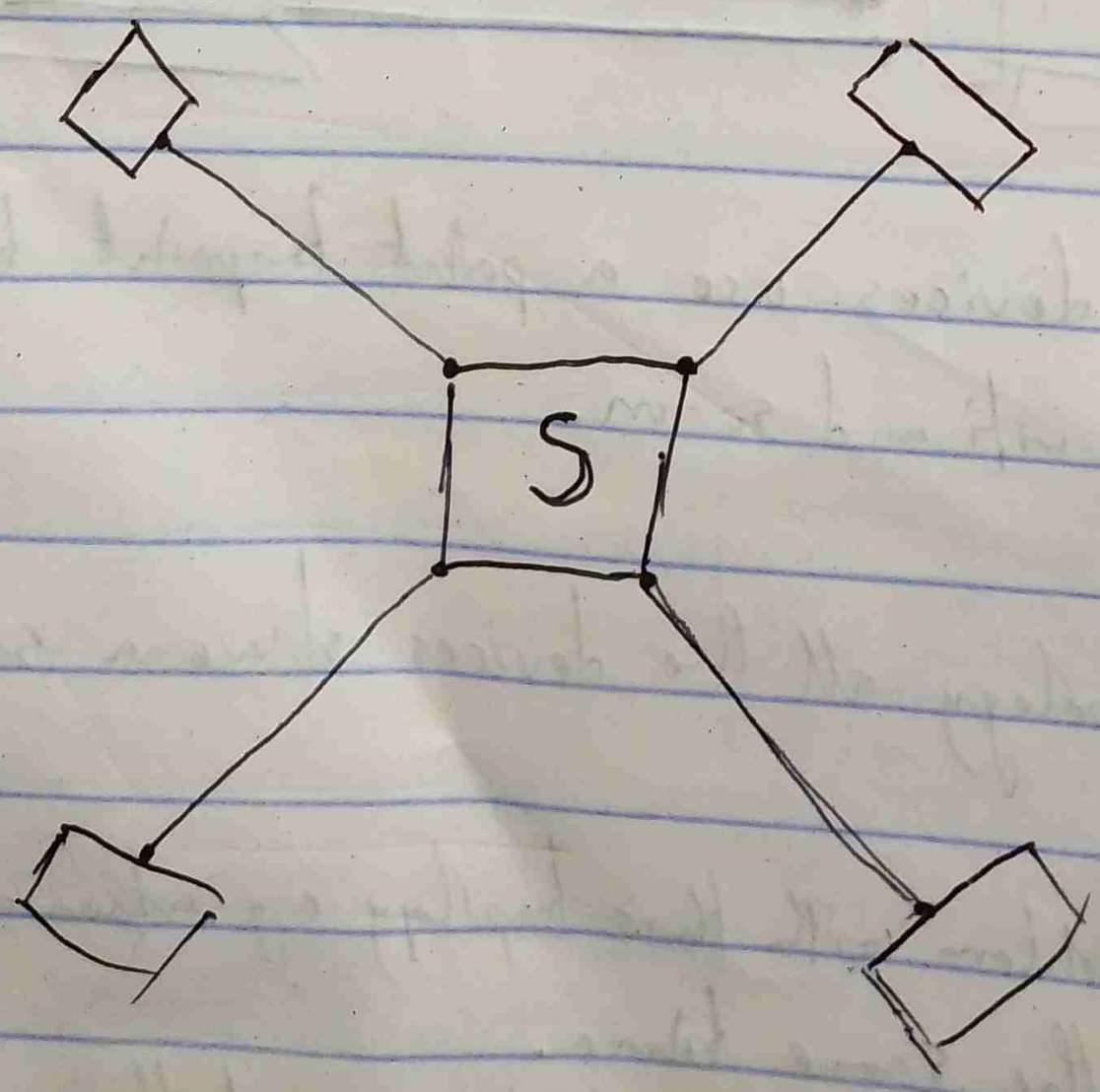
Failure of one device doesn't affect the others



This fails but doesn't affect the other devices

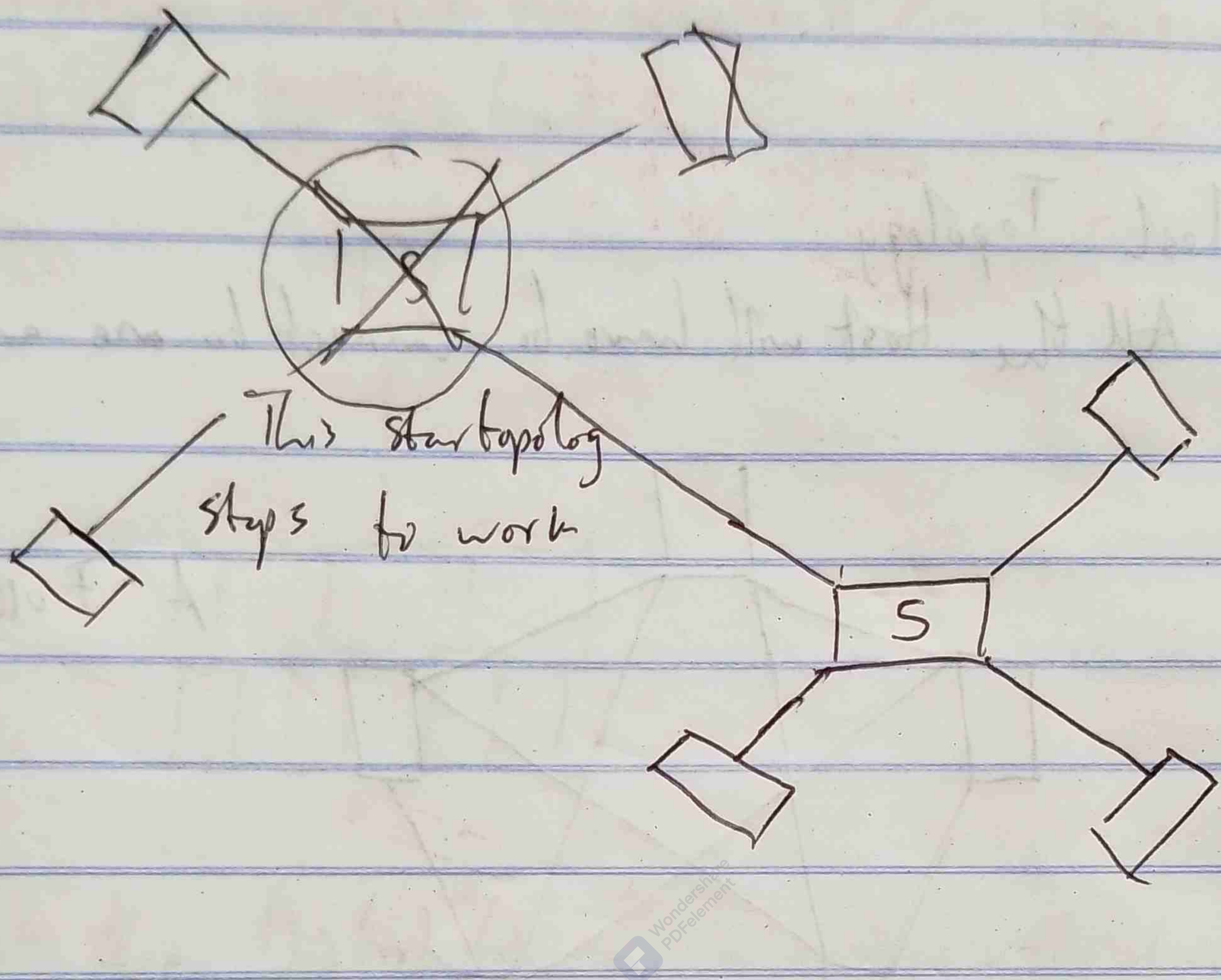
Star Topology

In this all the ~~st~~ hosts are connected to a central device known as the hub.



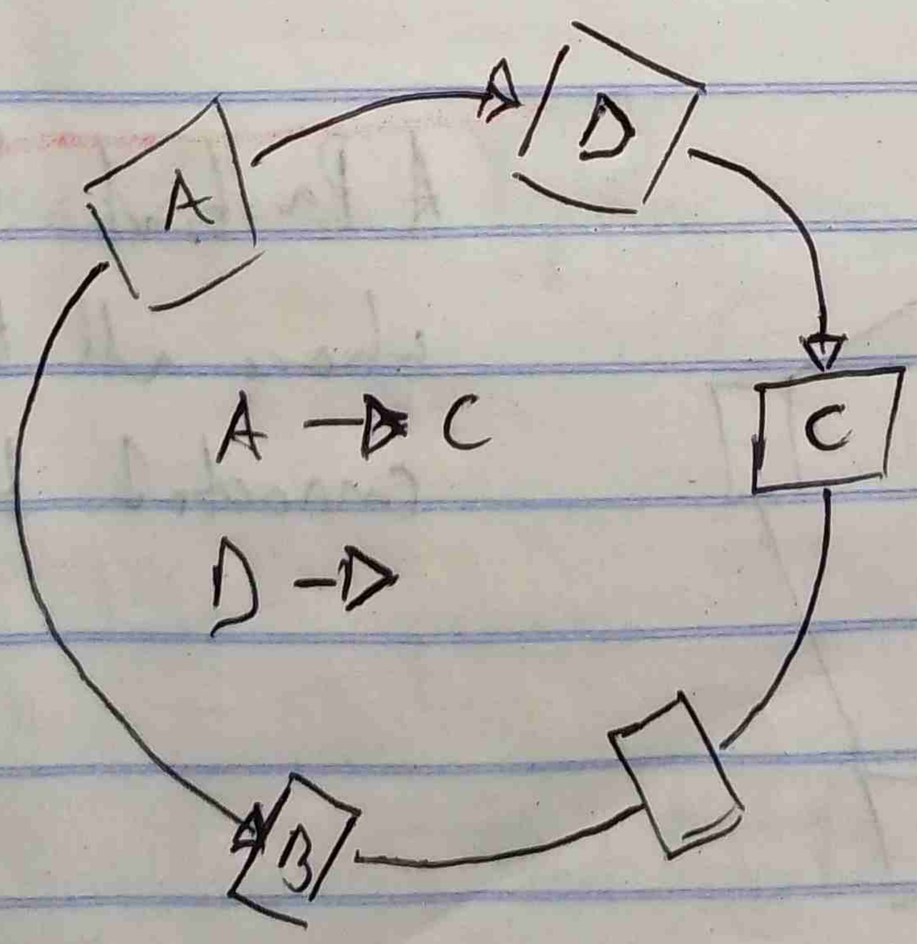
The hub and the hosts

In this star topology, if the Hub fails, Connectivity fails



Ring Topology

In this topology, each system connects exactly to other system to create a circular structure

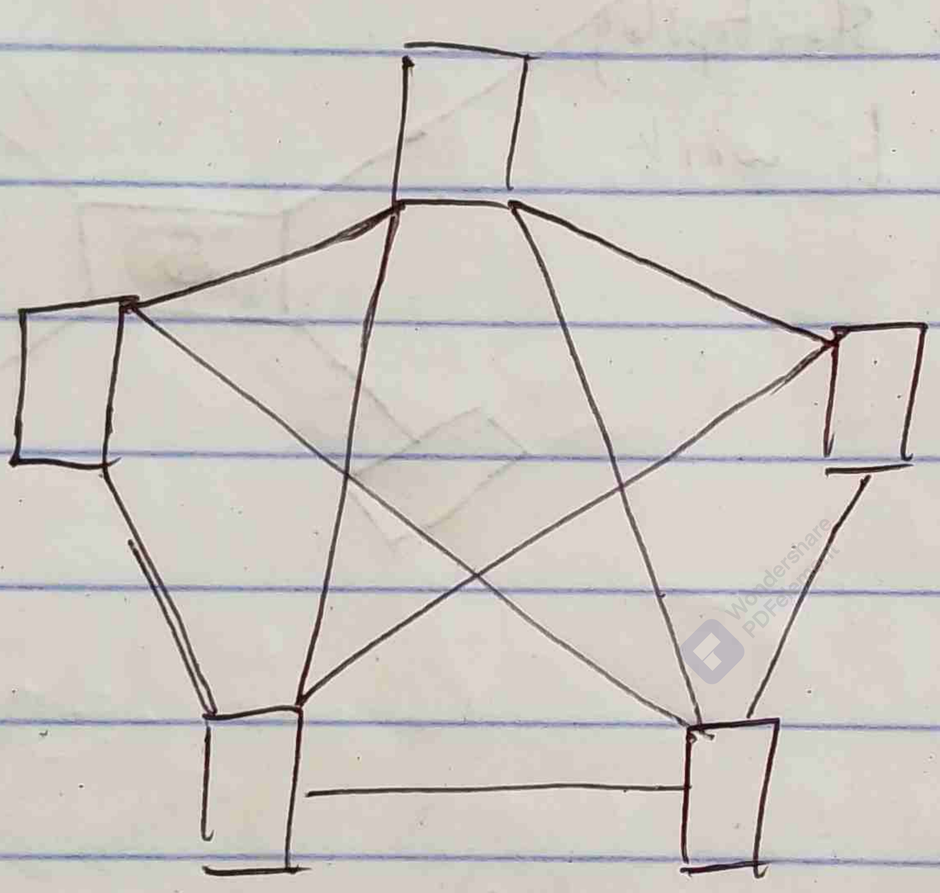


a real life

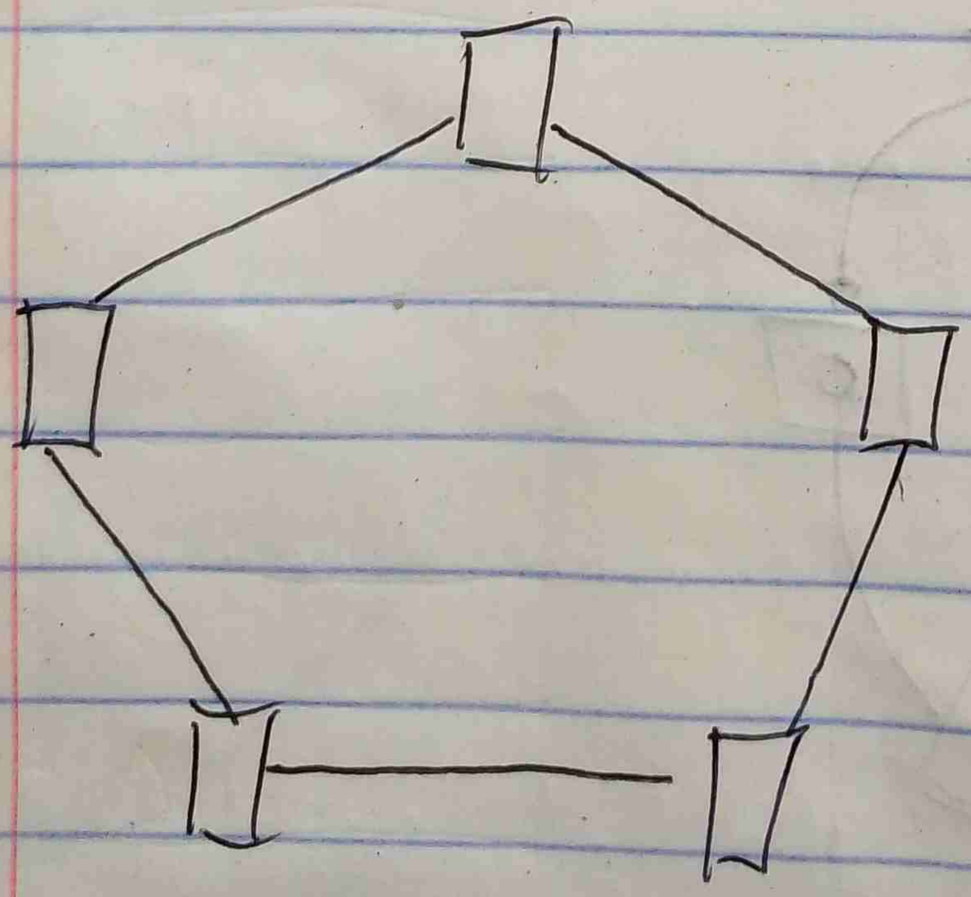
NOTE: In the the scenario we will mainly be working Connections with the star topology

Mesh Topology

All the Host will have to connect to one another



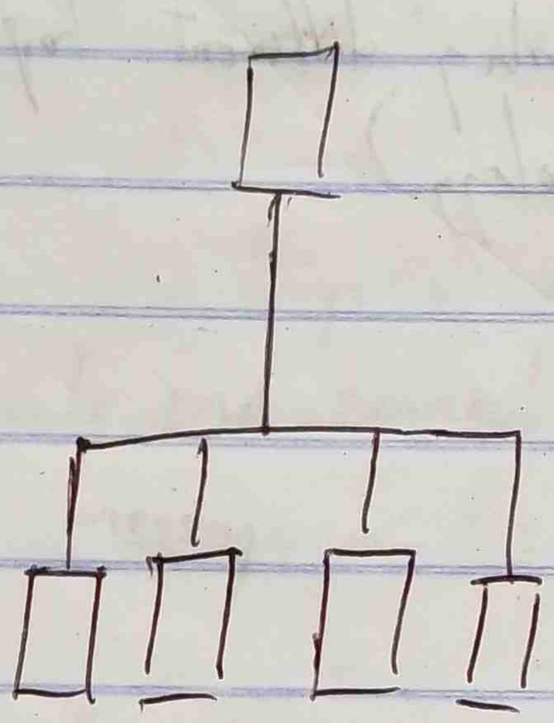
A Full Mesh



A Partial Mesh where all the hosts are not Connected to one another

Tree / Hierarchical Topology

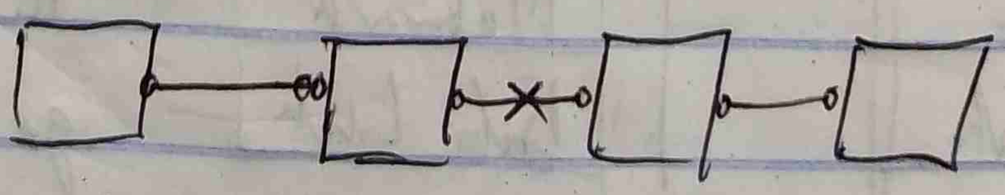
This is the most comon topology form of network today. The topology Imitates as extented star topology with inherited properties of the bus topology.



NOTE: almost every network all the hosts have a path to path Connection with each other

At the Distribution Layer we usually have our Routers and Switches there and
In our access Layer we have our printers and so on

Daisy Chain Topology



Failure with one can have a failure but that doesn't break the entire Connection. only a portion

Hybrid Topology

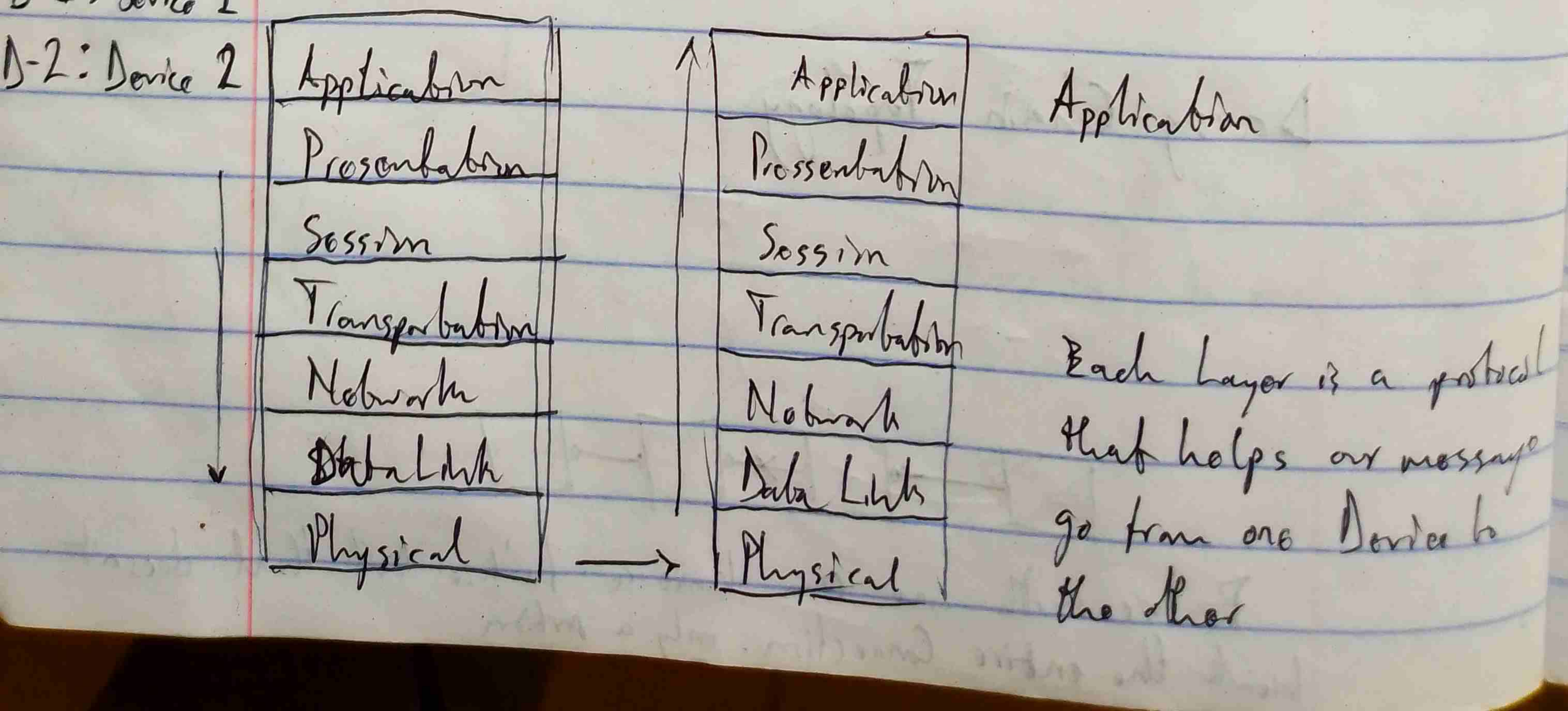
This Topology is the mixture of all/different kinds of Topologies.

An example of this is the World Wide Internet. Where several Parts of the world using different topologies come together to form 1. (Hybrid Topology)

Network Models

Open System Interconnect (OSI Models

- The OSI is an open standard for all communications system



Applicant: Is on the surface e.g Whatsapp, Instagram, etc google.
Presentation: This formats our message in a format

Session: This Helps maintain's the connectivity between two parts

Transport: This Layer has 2 protocols that maintain the end to end connection for either text message, video message or the format that is required.

Network: This Layer ensures that every device connected on the Internet has a unique address so that our Communicat
-ion goes to the right receiver. This layer handles the Internet.

Data Link: This organises the entire data in electrical impulses passed down and deter
-mines the specific byte that can be passed on to the physical layer.

Physical: The physical Layer of D-1 passes the it on to the D-2

Internet Model:

Internet uses: Transmission Control Protocol (TCP)

OSI	TCP/IP	TCP
Application	App	Does what OSI does only
Presentation	Transport	that it uses fewer layers
Session	Network	
Transport	Data Link	
Network		
Data Link		
Physical		

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PHYSICAL LAYER

The physical layer interfaces the hardware and the signalling mechanism.

This layer provides services to the Data-link layer

The

Signals

- Attenuation
- Dispersion
- Delay
- Noise