

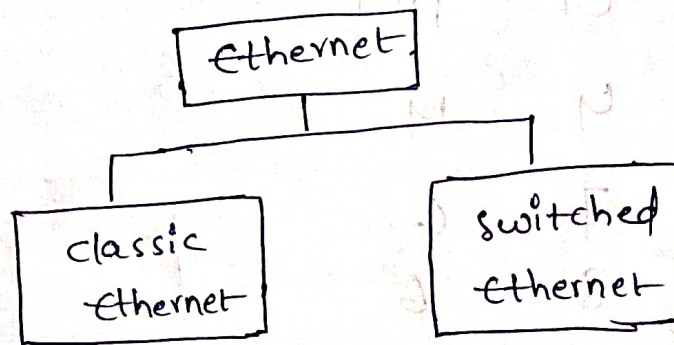
①

Ethernet :-

It is most widely used LAN technology which is defined under IEEE standard 802.3

→ It is easy to understand, implement, maintain and allow low cost network implementation.

→ It also offers flexibility in terms of topologies which are allowed.



classic ethernet :-

It is original form of ethernet that provides data rates between 3 to 10 Mbps.

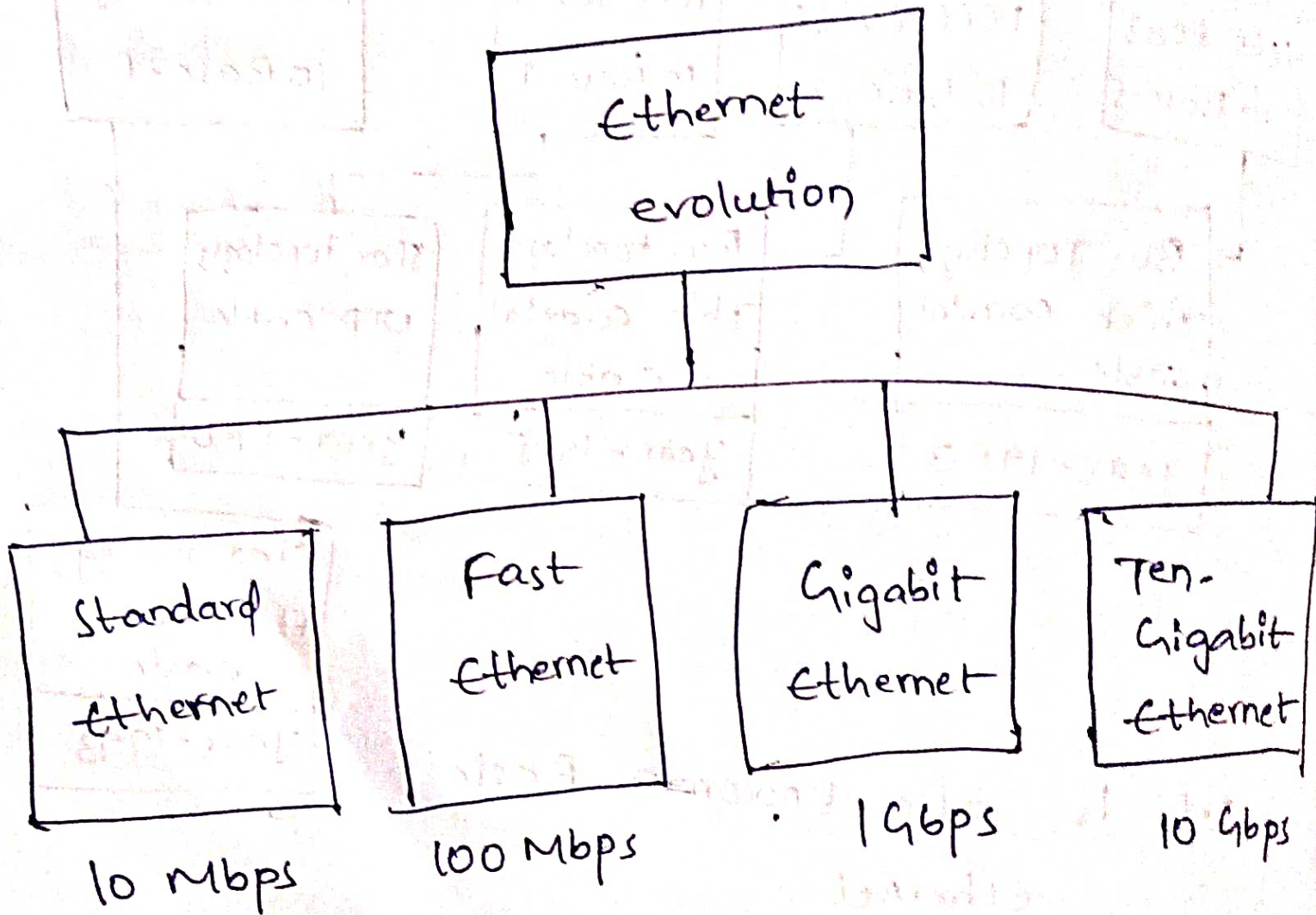
* The stations are connected by hubs that allow each station to communicate with every other station in LAN

Switched Ethernet:-

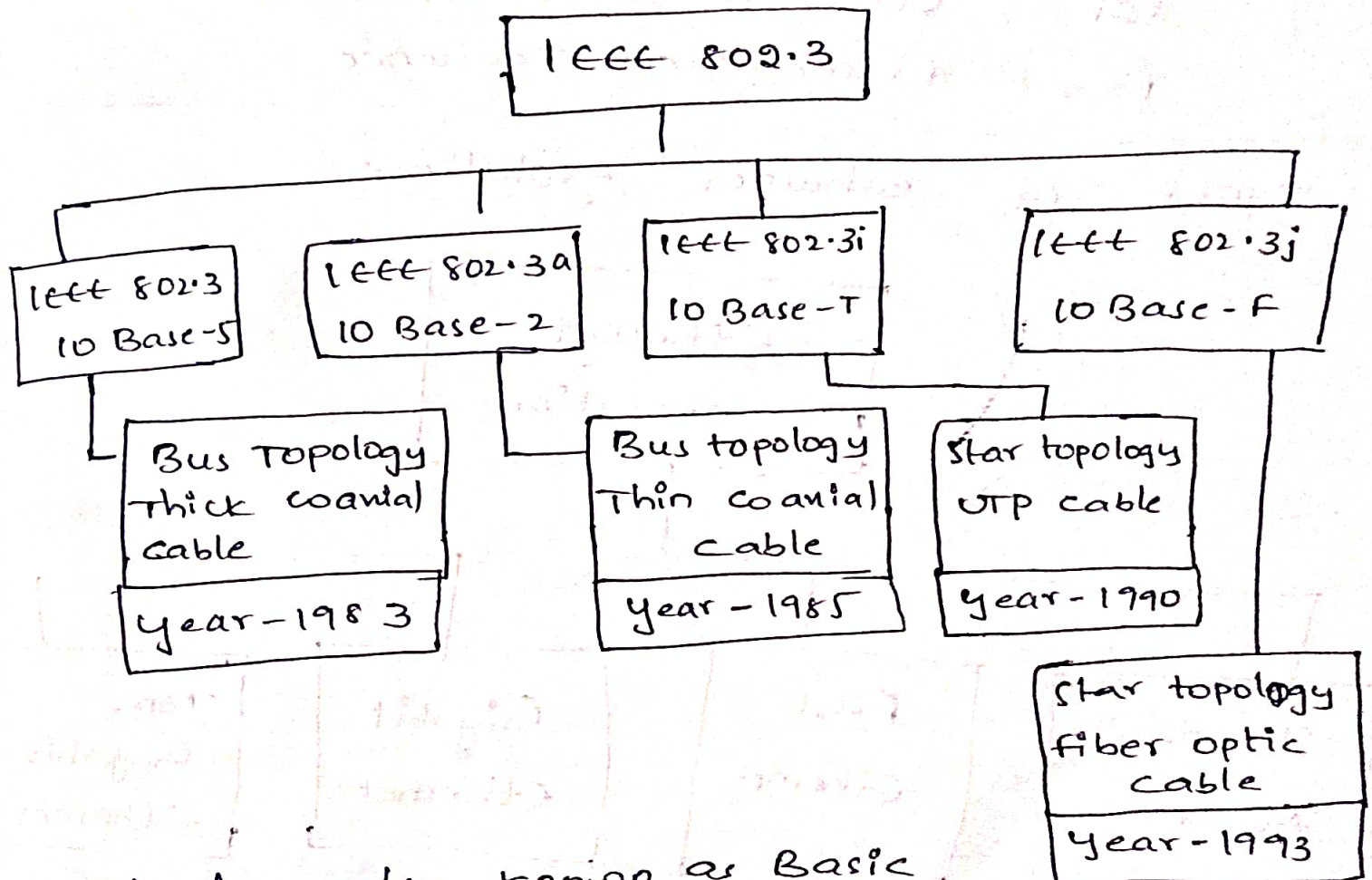
The hub connecting the stations of the classic ethernet is replaced by a switch.

* The switch connects the high speed backplane bus to all the stations in the LAN.

Types of ethernet evolution:-



① Standard Ethernet - Types of ethernet



It is also known as Basic ethernet.

* It provides service up to data link layer.

IEEE 802.3 frame format

field length
in bytes

IEEE 802.3

7	1	6	6	2	46-1500	4
preamble	S O F	Destination address	source address	Length	802.2 header and data	F C S

SOF = start of frame delimiter

FCS = frame check sequence

Fast Ethernet:-

It is an ethernet standard for 100-Mbps data transmission defined by IEEE 802.3u specification.

* It can transmit data 10 times faster at a rate of 100 Mbps.

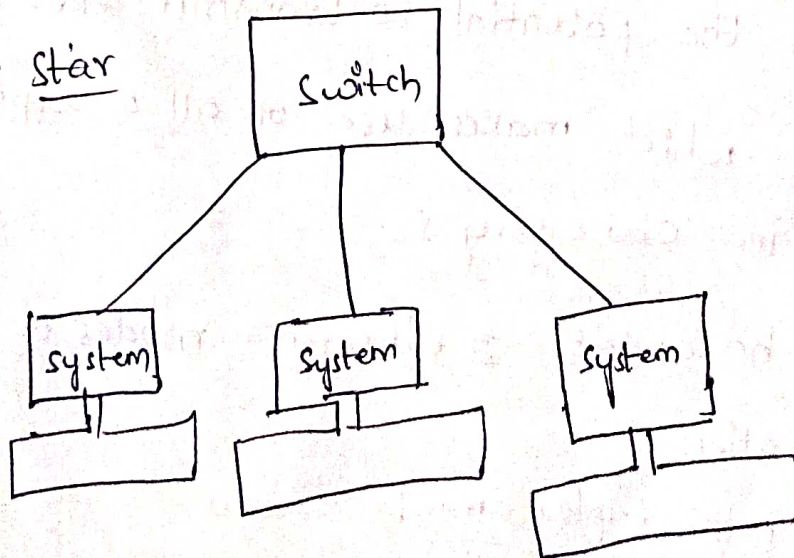
* It is used for departmental backbones.

Topology used in fast Ethernet

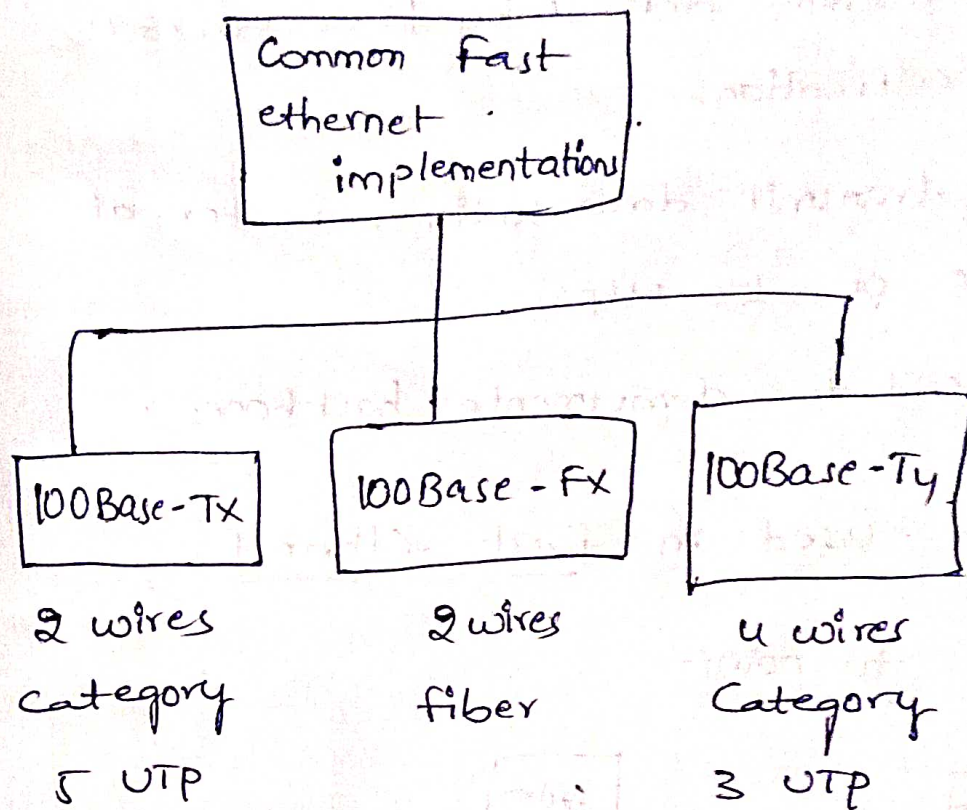
1. point to point



2. Star



Varieties of fast ethernet implements cables :-



③ Gigabit ethernet :-

It has the potential to transmit data upto 1 Gbps which makes use of all 4 copper wires in category 5.

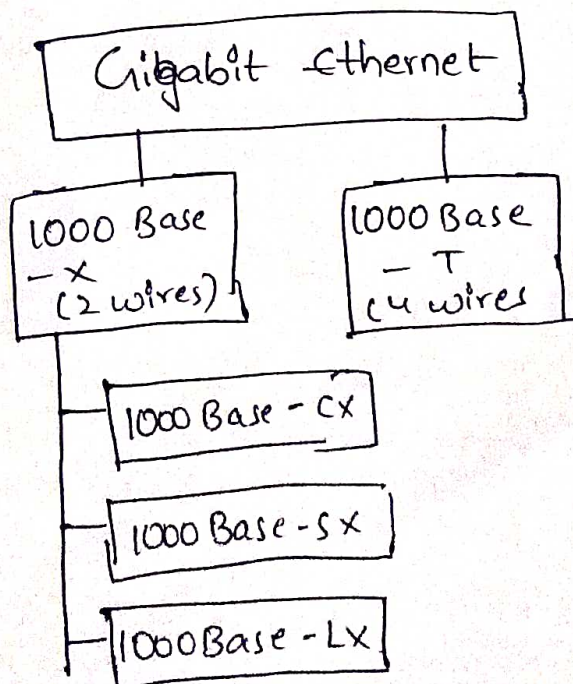
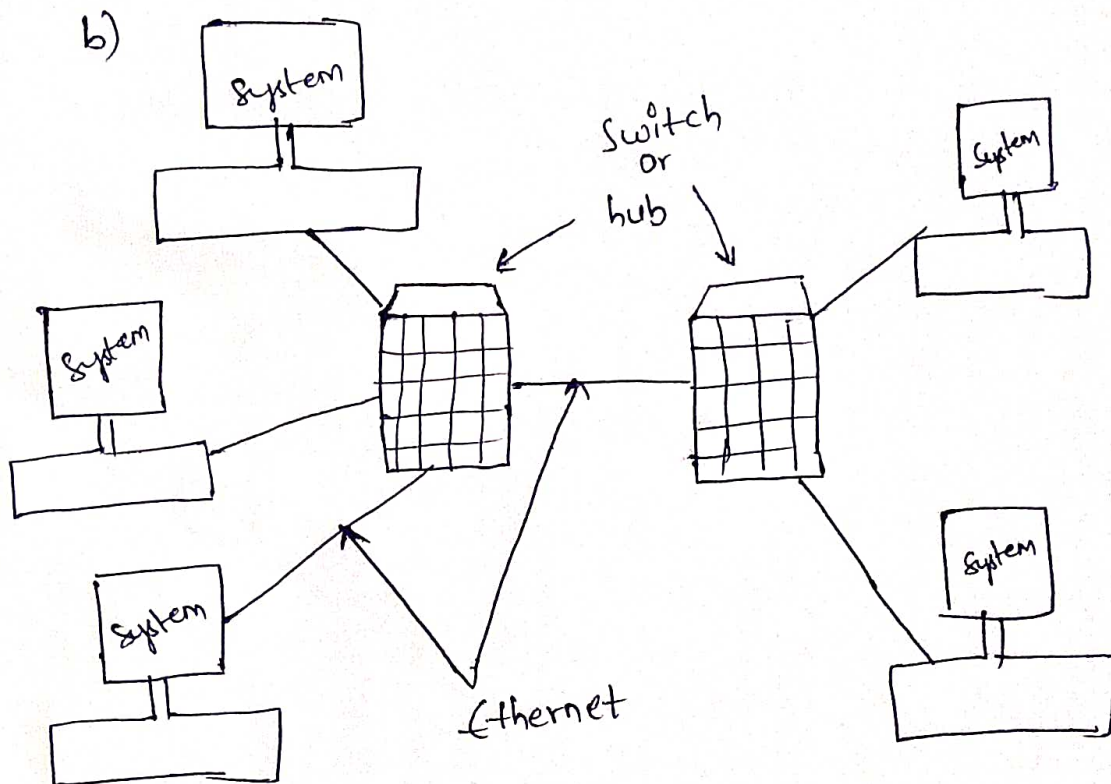
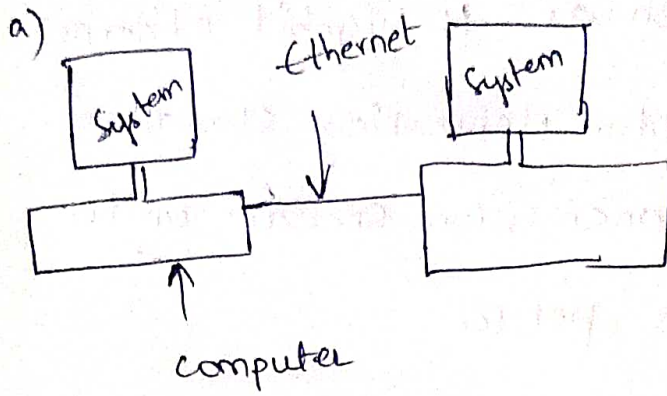
* It supports 2 different modes of operation

→ full duplex mode

→ half duplex mode.

* It uses same address, frame format

Topology used in GigaBit Ethernet



④

10 Gb Ethernet

It is also known as 10 Gigabit Ethernet

* It is a computer networking standard that provides transmission speeds up to 10 billion bits per sec