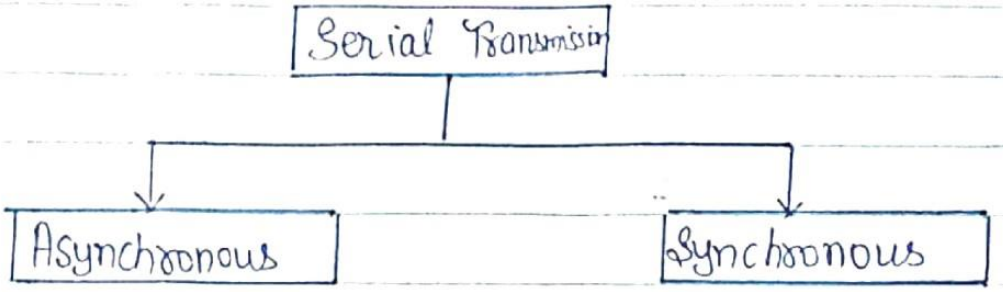
* Types of Serial Transmission

→ There are Two Types of Serial Transmission:-



→ Both These Transmissions are :- Bit Synchronization.

Bit Synchronization :- It is a function that is required to determine when the begining and end of the data transmission occurs.

1 = Asynchronous Transmission :-

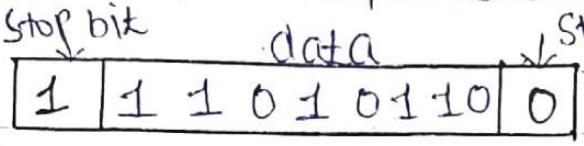
→ In this, data is sent in form of byte/characte

→ Asynchronous transmission sends only one character at a time, weather that character is number or alphabet.

→ It uses start and stop bits for transferring data.

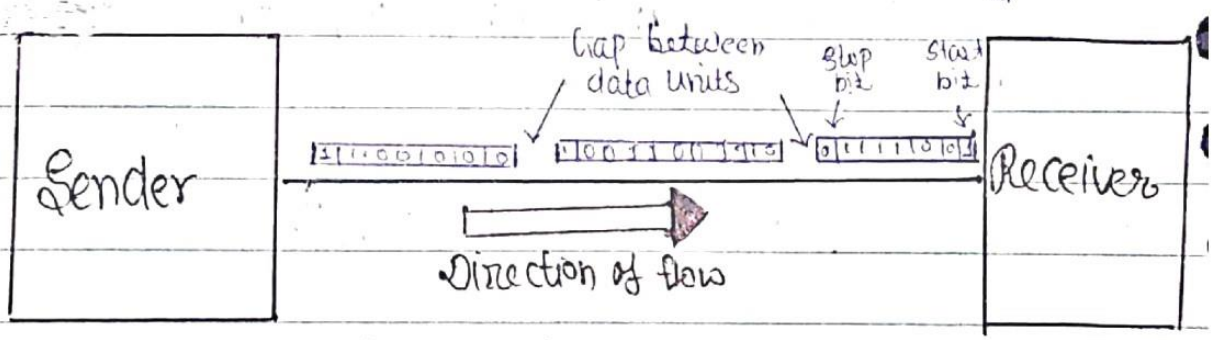
→ Start bit indicates the begining of data, A start bit usually 0 is added to the begining.

→ Stop bit indicates end of data, usually 1s are called Stop bits.



→ Addition of start and stop bits increase the number of bits.

→ It does not require a clock for Synchroniz



* Advantages:- 1. It doesn't need 2-way communication
2. It is striaght forward, cost effective.

* Disadvantages:- This method is less effient and slower than synchronous Transmission

2. Synchronous Transmission :-

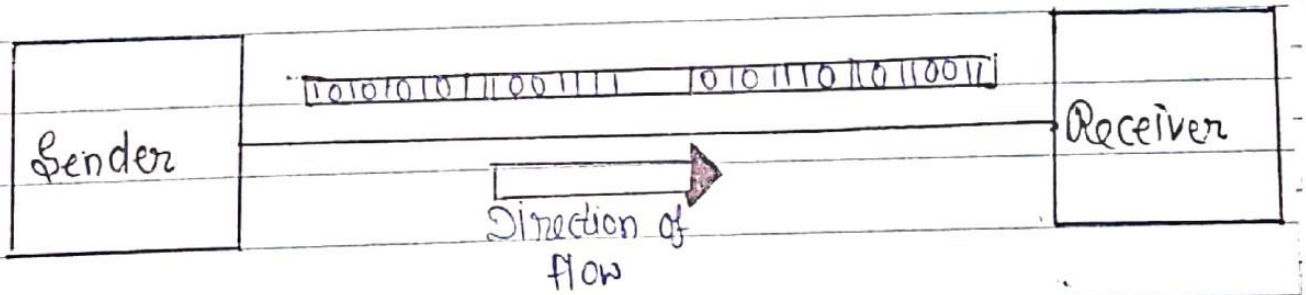
→ In Synchronous Transmission, data is sent in form of chunks or frames

→ A lot of data is sent in a block. Each block has multiple bits

→ There is no gap between the data.

→ Synchronous transmission does not use start and stop bits.

→ Between Sender and Receiver, Synchronization is compulsory.



→ It is more reliable than asynchronous transmission to transfer the large amount of data.

→ Synchronization is established between Sender and receiver by 'timing' the transmission of each bit.

* Advantages:-

→ This method is faster as compared to asynchronous.
  → as there are no extra bits.
  → also there is no gap between the individual data bytes.

* Disadvantages:-

→ It is costly as compared to asynchronous method.

→ Sender and Receiver have to operate at the same clock frequency.
  → It requires proper synchronization which makes the system complicated.

* Comparison between Asynchronous and Synchronous:

Sr no	factor	Asynchronous	Synchronous
1.	Defination	Transmits 1 byte or character at a time	Transmits data in the form of chunks.
2.	Data sent at one time	Usually 1 byte	Multiple bytes
3.	Speed of Transmission	Slow	Quick
4.	Start and Stop bits	Used	Not used.
5.	Cost	Low	High
6.	Gap between data units	Present	Not present
7.	Application	Transfer of data between keyboard and Computer.	Transfer of data between two computers.
8.	Examples	Email.	Telephonic conversation