The data link layer has three types of framing approaches –

1. Bit oriented approach
2. Byte oriented approach
3. Clock oriented approach
4. Bit Oriented Approach –

* It simply views the frame as a collection of bits.
* In the bit oriented approach, the data is transmitted to the upper layers which can be displayed in the form of text as well as multimedia (audio, video, animations and images).
* The data link layer has a bit oriented approach which is known as Bit Oriented Protocol.
* Bit Oriented Protocol has the HDLC 🡪 High-level Data Link Control.

1. Byte Oriented approach –

- It is the oldest approach to framing.

- 8 bits is equal to 1 byte.

- When the data is represented in the collection of bytes (characters), it is the Byte Oriented approach.

- It is also known as character Oriented approach.

- Byte Oriented approach has 3 types of protocols –

1. P2P protocol – Point to Point Protocol.

2. BISYNC – Binary Synchronous Communication Protocol.

3. DDCMP – Digital Data Communication protocol.

1. Clock Based framing –

* The Clock based framing is for the Optical Networks.
* Protocol for the Optical Networks by Clock based framing is SONET
* SONET 🡪 Synchronous Optical Network.