47. Checksum

- The checksum is checking the sum of the data bits within the frame.

The working of the Checksum for the error tracing is as follows –

1. Break the original message into ‘k’ number of blocks with ‘n’ bits in each block.
2. Sum all the ‘k’ data blocks by placing it into rows and columns (Bitwise addition).
3. Add the carry to the sum, if any.
4. Do 1’s complement to the sum.
5. The bits generated will be the checksum added to the frame.

After this process the checksum is added at the trailer of the frame.

After the receiver receives the data, the step 1 to 5 is again carried out to calculate the checksum of the received data.

Then the checksum by Sender and checksum by receiver is compared.

If checksum matches, the frame is accepted by the receiver and further used. If not, the frame is rejected and an acknowledgement of the same is sent to the sender.