CHAPTER-10

CHECKSUM: Checksum is an Error detection technique that can be applied to a message of any length.

Process: At the source, the message is first delivered into m-bits. The generator added an extra m-bits called checksum, which is sent with the message. The Receiver accepts the message if the new checksum is all 0's Otherwise discarded it.

Example: The sender sends 7, 11, 12, 0, 6 .....

Now,

$2^4 = 16$

$2^3 = 8$

$$\begin{array}{r} 7 \\ 11 \\ 12 \\ 0 \\ 6 \\ \hline 36 \end{array} = \begin{array}{r} 100100 \\ +1 \\ \hline 00101 \\ \hline 1010 \end{array}$$

7, 11, 12, 0, 6, 10 = 46 (101110)

+1

1111

0000

No error occured.

Exmple- 2, 3, 6, 8, 5 ---- (4-bit checksum)

Now,

2
3
6
8
5

24 = 11000

+1

1001 (1's com)

0110

= 6 [checksum)

So, Sender sends (2, 3, 6, 8, 5, 6)

Now,

2
3
6
8
5
6

30 = 11110

+1

1111

0000 No error.

Ans!

Error

Single bit Error

Ex –

10010
1[1]010

Burst error.

[10]1010
[01]1010

more than 1 bit error