PROGRAMMING ASSIGNMENT SPECIFICATION

- ANAS MURTAZA [2019 BITE 072]

-MAYANK GUPTA [2019 BITE 040]

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1. TO IMPLEMENT CYCLIC REDUNDENCY CHECK

Language used :

C++

Input :

32 Bit(or more) data , Number of hops in Binary Symetric Channel(BSC) , Crossover Probability for BSC.

Procedure :

Data bits are tokenised into 16 bit dataword and are indivisually divided(modulo 2 division) by CRC-8 divisor to get remainder out of division. The resulting remainder is appended to dataword to obtain code word which is send to reciever.

Code word then transmits through binary symetric channel,in which er rors are induced with crossover probability p, in each bit .

At reciever side, modulo-2 division of recieved codeword is done with CRC-8 divisor. If remainder called syndrome is all 0,then there is no error(high probability) in recieved codeword,otherwise if remainder is non zero,then er ror is there in recieved codeword and it is discarded.

NOTE: If after tokenizing data into 16 bit Datawords, if one of resulting dataword has less than 16 bits then the program append ’0’ bit to begining of that dataword to make it to 16 bit , in order to to be encoded using same program code as for other 16 bit dataword.

References :

1. www.geekforgeeks.org
2. Data Communications and Networking by B. A. Forouzan

2. TO IMPLEMENT 7 BIT HAMMING CODE

Language Used:

C++

Input :

16 or more bit dataword

Procedure :

Tokenise it into 4-bit datawords, using even parity compute the codeword at the sender end. Now, use random error generation to generate a random error in the codeword and send that to the receiver end. At the receiver end, check if there has been an error and correct the error.

References :

1. www.wikipedia.in
2. www.geekforgeeks.org

We tried our best to complete the Assignment.

THANK YOU!