1. Consider a data file of 1000 bytes and divide it into the frame of size 100 bytes with additional 48 bits each for source and destination adresses. The data and the header in a frame are organized as: Frame delimiter, source address, destination address, data, EDC, frame delimiter.

   *Perform error check*
   *Repeat for subsequent data*
   *Store different fields of different frames in a file*
   *Flip some bit of the file Identify erroneous frames using CRC*

2. Write a program in C\C++ using socket programming to send a text file (>1KB) from sender process to receiver process with UDP sockets. Following is the functionality required on sender and receiver processes.

   ***Sender***
   *1 Read a file*
   *2. Convert this file into 4+100 bytes packets .Each packet should have first 4 bytes for user generated sequence number for ordering packet and 100 bytes of data.*
   *3. Send these packets using UDP datagram sockets*
   *4. Collect the following information*
      *a) Number of packets generated from the file*
      *b) The order of packets sent.*

   ***Receiver***
   *1. Receive the packets*
   *2. Get the sequence number of each packets*
   *3. Perform ordering of the received packets*
   *4. Generate the file by merging the received packets and write file on the disk. Collect the following information*
      *a) Number of packets received.*
      *b) The order of packets received*

3. Implement the encoding schemes: AMI, NRZ, RZ, Polar, Bipolar, Manchester