Ese Not 0 6 did trademilion at mouse suls. A Date: 7:8.2424 of rotals provide alt of ours Write a program to implement error détection Alm: and correction using Hamming lade concept. Make a fest sun to input data stream and venify croos consection failure. of include < statio. h > Error Correction at Data Link Layer: Hamming Code is a set of leason - correction codes that can be used to detect and correct the crooss that can owns when data is transmitted from & the sender to the receiver the sof Create Sendu Program with 1. Input to sender file should be test of any belan features! length: Program should convert the teset of binary 2. Apply the hamming code concept on the binary data and add redundant bits to it breate a receiver program with below Peatures 1. Receiver program should read the Input from the channel file 2 Apply homning code ion, the binary data to cheek for errors. 3), 91 than 16 an error, die play position of the error.

Eleve remove the redundant bits and convert the binary data to Asch and display the output. dudent Observation; primarie de miles moites cos a deep som to input data stronger or Code ! · emist nothon forms. # include < stdio. h> of include < string. h > start start to northward read + Include 2 math hit toll

Yord char To Bilinary: ( char ch, inter binary [], Int " lidy

Yord char To Bilinary: ( char ch, inter binary [], Int " lidy i- 7; 17-0; (20) fold 250519 binary [ (\* index )++) = (ch> > it) & Up Void Calculate Parity Bits (Int. hamming Code (1), 1int n, for ( first 1 = 0.1) E & Si Litt ) 3th (197) in int parity pos so (Int) pow (2, i): int parety = 0 for ( Into i = parity Pos > 1 2= n; 1/+= 2 \* parity por for link K-J; KKJ J. parity pos we keen; ky parity 1 - hamming code [K];

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( continuity of hamning Code [KJ isi)
Int generate Hamming ade (int data Bit [], int m,
  Int hamming code []) }
            int 8-0; } (0+1 (hing) 4
       ohile ( n++ x 2 pow (200)) 2
     y
     for ( fint 'i = 1) = 0 = 1 = 0 ; i = n ; i++) 2
        ay (1== ( Int / pow (2, 4)) 20011
                Lamming tode Eij Lottigtud reds
       else l'hamming Code [i] = data Bits []++]:
 Calculate parsity Bits ( hamming Code. n. 8);
 Int detect And Convert 28 808 ( Int homming Code [], Into,
             Int lemorpas = 0;
           ( Int i=0; (20) (
                Int bantabor = (Int) bom (5'1);
                 Int party =0; in
```

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for ( int ) - hours long
for for (int K-1; K<1+ bamily bor 50 K<-1; KH)
           parity ~ = hamming lode [we]: de sono
      33
       i) (parity 1-0) & : m - 1 + m
          chearbart = abonytabors
 setum to ersorbor;
     Binary To Char (Int binary [] int length,
char output [Ja]: E and prime of
         ind index = 0>
  for fintais of it length; it = 8) of
         charch-o;
     · for ( int 1-0: 1 < 8; j++) {
             ch 1= (binony [it+j.] << [7-j))
output [index++] = 1/0 1
  int main () {
          chan input string [ ] 2];
 int binary [256]
           int data Bite [256]
```

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înt [ hamming Code [ 512] ]
       point for source input string: );
         int index= 0:
       int index= 0;

for lint i=0;

terstalan ("hput stoing): ++){
          chow To Birary ( inputsting [i], birary. Linder)
   Por (int i=0; i coulnder; it+) il tuqui.

Por (int i=0; i coulnder; it+) il tuqui.

Billiooo oo 11 data Bite [i] = binary [i]: at refore.
or of int he generate Hamming lode (data Bite, indeso,
      print ( " Generated Hamming Coole").
 hamming code);
      for (int "i=111): i<=n; i+) & : (60009
    all allo opernt fol "1. d" hamningløde [i] " out
                        If islay primared bythese
     intercorrected Databita [256]
          for ( tot i= 1; i < b; (++) for 6 so and
                                   11160110 ,010
                if (i!= lint) bom (5, 12)) f
                   Corrected Datablite [j++] = hamming vode [i]:
     Jelse L'in boilgie il voiterred
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char loorected string[32]: 24 binary To char ( wrected gatab) kins i wrated string corrected string: 1.5 mi Pour topp | mot corrected string ) charte returnso: [i] Electrical ) hours of work Input & output: Enter the input string: Kello-1: 0=1 +13 Generated Hamining Code ! 11011 1110, 1100 000 1110 01010110 11000 111 00 11 1000 1111. enter the position to simulate error 10 pook Hamining Coole with error : 1111-1110 0110 0111 0110 0100 0000 0010 1000 1110 zonor detatal at position: 3 Corrected hamming lode: 1101 110 11000001 0 101 0110 0111 0001 1101 100011001100 1111. Corrected bit at position 8:000, 40 corrected string; hello. Result! The hamming code detection and correction is applied and verified.