

Pine White a program to implement across detection and Corosection using Hamminia code Concept Make a test own to input data Stream and Verify everon Correction feature

From Cornection at data Unic layer:

Hamming code is a set of evenon-connection

Codes that can be used to detect and connect the

evenone that can occur when the data is transmitted

from the senden to the stocking. It is a technique
developed by R.W. Hamming for evenon connection.

Create a Sendon program with below feature!

If Input to Sander file should be a text of any length program should convert the text to binary

2) Apply hamming code concept on the bloomy data and add widendant hits to it.

8] Same this amount in a file could channel,

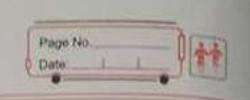
quate a trenduct program with below fortheres?

1) Received program should read the input from channel file.

27 Apply hamming code on the binary data to shock for ormans

3) To there is an everar display the position of

(1) Else oremove the oredundant ermon bits and display Convent the binary data to a soil and display the output



## Student observation

# unclude < Station h)

# include esting.h

# include < math ho

for cint i=2: 15:01 i-) &

bloomy CC+ index 2+17 = Cch >> 1284

3

for Cint 1=0 ic + 1418

int positypos = Cinto power 100

Int parely sa

for cint ) = pantypas; j <= n :) + = ( = \*pantypas) {

for cint k - j : k < j + pantypas le 1 < < n : k + + ) &

panty 1 = hamcoore [ k ] :

3

hamcode [ partypos] = party

-

int generate ham code Cint dbits co, int m, int hamoudo

while entry > powce roof

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3

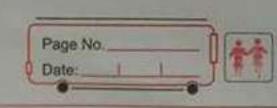
N= mtz

for Cint 1 = 4, j = 0, k=0, 1 <= n; id+ ) &

if ci = = cint 2 pow co, k >> &

hamcode DIJ + 0

10++



dbits CHO calespanityblis Champade 1, 7) int detand consernous Cint hamcode CJ, int n, int voic Int emapar = o' for Cint 1 =0; ic x; 14+12 int positypos= cint) pow(2,i); ind parity = a for ()nt j = portypos: je=n; j+= (0+ paritypos))2 pan Cint K=j: KCj+ paritypos 22 KC=n: K++)& parity 1 = hamcode CXJ' 4 (party ! = 9) & ervoupos + = partypas.

Vold bintochan Cint binary CJ, int length, Shar output CJDe

int Indix = 0;

for cint i=0; ic length: 1+=8) &

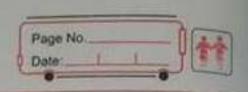
Chan ch = 0;

for cint j=0; je8: j+1) &

3 Output Cindent+ J = Chi

I output Cindex ++ J = et 10'

Q.



int man cos Chan Input string (92) Int browny [200] int day coop Ind hamode [BI2] prints O" Enter the input string: "" Scant C " 968" inputstring) int index = 0' for cint 1=0: is streen (inputstring): 1++>2 Charlis Binny Cinputstring [1], binary, & index? for cint i=0 is indox; i+122 databiticis = binary [1] int n= generalehamcode Colatabits index hamcode printf ("Generated Hamming Code: ") for Cint 1 = 1; 1 = n; 1+1) 8 of prints 6" You!" Ham code Ciss winty ("In") printe ("Enter the position to simulate erman") int ornan pas' Scanp ("Yod" Lerrorpos) if Cerusospos >0 && erusospos <= no & hamcode [ermenpos] : I hamcode [ormanpos] for Cint is is is in int)? y printe ("Tod" haming code Cid) printe ("In").



Int determonpos = detand con ernon Chamcode, n, leg 200 4 Odotomorpos == 0) P printf ("No error detacted In"). prints ("ermon detected at position. Ted In a determine int ong bit = ! ham node C determorpost; hamcooke Coldennanpos ] = anglist! pronty ("convected Hamming codo: ") for Cint 1= 1; 1 == n; 1++2€ bring ("Yed" homeon (1)) prints o" ini printy C' cornected bit at position % di "/ad In" del errompos, anglità int connected Databits (388) Int j=0, k=0; for C int 1= 1; ion: it+){ 4 cil = Cint) pow or loss Corrected batabits City = harmoods (1)

Chan canecated string (22);
binary Tetochan (corrected Data Bits. ) (corrected String);
prints ("corrected String! % 2) n'9, Corrected String);
Teturn 9.

>>>

output Enter the input string hey Gueratad Hamming code: 0001110110000111001010110 Extente position to stimulate owners : 3 Harring Code with man: 001111011000011100101010111001 Erona detected at position: 3 Constant Ende: 000111101100001110010101111001 Commeted bit position 3: 0 Cornected String: hey Rosult: Thus the program to implement HAMMING Cope even detection and Correction Is execut and output is vouped. Tours RANGE