16/08/24

scueus mode in a AIM: MIA wente a perogram to implement verson detection and correction using HAMMINU cocle concept. Make a test seen to supert data steeram and revery lever coverction code.

tevor concetton at Data Link Layors.

Hamming code is a set of everor conviction codes that can be used to detect and correlat the beverous that can occur when datais teransmits, from the sender to eccious. It is a technique developed by R.W. Hamming for lever correction.

coulate sender prorjeram with bellow feautrus :-

1. Input to sender file should be a tent of any length. Perceyean should convert the tent to birary. 2. Applying hamming code concept on binary data

and add redundant leits to it. 3. douce this output in a file called channel.

Receate a receiver proegram with below feautres: 10 Receiver proejecum should read the input ferom

2. Apply houning code on leinary data to check

30 If there is every, display the position of every to teles sumore the seductant lorts and convert the binary data to ascii and display the output.

student observations. code: impact math def char-to-bin(ch); suctorin [int(69+) for bet in format (ord (ch), '08 b)] def rate partity (Grade, n, v); fort in erange (x): P-pas = 2 * * 1; of passing != 0 Pacety = 0 fort 9 in erange (1- pos, n+1; 2 + P- pos); fork in erange (3, min (3+ b- pas, n+1)); Paertyn = h cade [k]. h code [b] bast = basity a compress of the def eyen-hamming (data); feel 3 in sounds (8): m = len (data) 2487 stob - nd = 1 10 charas applied (charces) m=n while n+ Y+172+ +83 308 00 mentage 1+=1 tel maine (): Enquit - Ober = Popus C. Enter John Lings In code = [o]* (n+1) Din-dadar I (for evange (1, n+1): Ital and (As) 9=0 130 permon of 1 = = 2 + + k: 1 = 11, about A cook [P] Find Here & State House 1K+ = 1((([: 1] a) a)4 else hode [1] = data [9] to de sopress calc-paerty (hook, n, v) Justivin heades in town powers to tone Cupy Brosch

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def detect and correct (harde, h, v):
        lover-pas = D
    for in sange (V:
                           imposet math
     P- Pas = 2 * * P (Cha) nid at works file
 forty = 0
forty in marge (P. pas, n+1, 2 + P. Pos):
       for K in Marge (8, min (8+ tres, n+1);
           party 1 = heade [x] sprane of 9 post
       4 paraty != 0: 21 ** = 309 9
          lover-pas += P pas
   def bin- to chan (bln-data);
       Chars []
     for & for range (0, len (b) ne data), 8):
        del eyer hamming (data); O= do
      fort 3 in example (8):
         ch 1= 6n-data [9+5] 22(7-9)
           Charis. append (cher (ch))
        sutuem 2 3. 30in (charis) 1+ x + a distant
    def mam();
        Anput - Stel = " nput ("Entre Input strang: ")
         bin-data[] (1+1) *[0] = des) }
         bin data extend (chan to bin Cahi)
         h code, n = eyen - hamming (bin-date)
      petent ("bure rated Hamming code: "? " Sontmap (stor)
                 heade [1:7])
     ever-pos = host (injust ( leter position to ever).
    If any (ever-pob = = 2 + +9 for 9 in stange Cint
                   ( Canatho log 2 (n)) +1)):
    Peant (f'190000 cannot implement at redudant paenty bit")
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elif 0 × eur-pos x=n; heade [ever-pas] = 1 - hoade [ever-pas] point ("Hamming code with levroy:", "Soin (map (ster, heads [1:]))) detected_evr_pos = detect_and-coevered (h code, n, int c math. lag 2 (n+1)). El detected lever-pos = = 0;
perint ("No vecnos sletected") else:
peint (+" revious detected at pastion: Electros") hoode [detected was pos] = 1 - hoode [detalted evor pos] Print ("rowacted Hamming code; ", " ! Son(map (sta) h Lode [12])). Print C+ "Lovoucted but position & detected - 1001- pos3 I h cade [detected ever- pos] 3"). o Kowacted - data = [] to tup? at noting & Councerpted Herming Leale? $\beta = 0$ K = 0 for in Marge (1, n + 1):trababel 91 = 2 ** Kin to 3k nothern soly converted - data append Chade [1] less at position to K+= 1 Coevected_star = bin = to chase (caseovected_data) punt ("corrected string:", corrected sta) 26 - hame - = = !'main _ " : maine), Early Results-This program is executed and suspect in secretica successfully.

Dutput: chit ox were por zoni * Enter the input steeling: good brevered Hamming code: 0100110101110111 0111101101111010100100. Enter position to stimulate 1001001:5 Hamming cade with wegon: 0100010101110111 D111101101111010100100 Econo detected at possition: 5 coevided Hamming code: 0 100110101110111 011110110111010100100 Loevected bit at possition to sourceted steering : youd. 3/ cate I districted were your ? * Enter the Enput string: Good Gunerated Hamming code: 010011010111 0111101101111010100100 Enter position to stimulate cerose 2 4 teoroes cannot be implemented in eveludant lest at position 4. no were detected. Loeverched Steering: egood his was 2/ - home = = "main-": Thus program is executed and output is Dusput: Result: receiving successfully.