## FEROR DETECTION & AT DATA LINK LAYER (HAMMING CON CORRECTION

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## code:

det string to brown (input string): entwer ' ' Join (format (ord (c), '086') for (in input string)

det binary- to-string (binary-data): Charle () A Michael to Seem. De set the

for i in marge (o, len (binavy-data), 8):

byte: binary-data [j: 1+1] char. apperd (char (int (byte,2))) setwar ".join (char)

the package do not you det caravate parity. bits (data):

n= len(data) special son de estero ano estero

the Olement house how of silvery a Day

while (2\*\* x) ((n+ +1): At= 1 m is the stay of the design of the stay of the

Astrolo de la como de

des trued parity wits (dato, on): " ... our our of n=lendatored of below with the state of the

at in estate mand d

have calmed day of 3 of

rockets to a course of description of hamming-code = [] secole .

Up of Marine of the for i in marge (1,m+1): I will deliver was drugged

1 1== 34 A 1 :

hamming-code append (0) Stall bearings it was to

ramming cade append tine (data (x)) the property that come to been the moderne for

netwin hamming-lade

```
detect and covered ever ( hamming ade, 4):
 det
      n: len (hamming ade)
      erross position : 0
       for i in stange ( or ):
           party-pos = 2 ** ;
            parity-val = 0
            fool I in mange (1, n+1):
                If f and parity-pos:
                     posity_val = hamming code [j-1]
           If paraty - val 1 = 0:
                 erron-position + = parity-pos
       of source position
            point (f'erros al ferror-position)")
            hamming-code [error-position - 1] = 1
            pount (f" coourted hamming code: {hamming_code}")
       else:
            print (" No error detected")
       eter-primmed now tere
det extract_data_from_hamming_code (hamming_code, r):
        1=0
        data = []
         for i in Mange (1, len (hamming-code)+1):
             "f "! = 2** j :
                  data append Chamming-code [i-1]
              else:
        estuan ' '. join (map (str, data))
det main():
        input_string = input (" Inter a string: ")
        binosy-data = string-to-binary (input string)
        posint (5" Binary is 'fingut-string': { binary data}")
       X= calculate - pavity - bits (bihavy -data)
        hamming-code = insert_parety-buts (binary-data, )
        hamming-code: calculate parity-values (hamming-code, 1)
```

print (f "hamming code: Thamming.code)")

print ("In Inductive error")

every bit : Int (input (f 'Exercise the bit position

(1-{ten(hamming.code)}):"))

humming and covers bit - 13°=1

Pount (1" hamming code with error: [hamming-code])

hamming-code = detect - and - error (hamming-code, r)

covered binary-data = extract data - from hamming(
hamming-code, r)

consulted\_string = binary\_to\_string (consulted\_binary\_dun)

print (f"final output after consulting "furrented\_string)"

if -- rame \_ = = " \_ main\_":

main()

Output:

Ender a string: hi

Binary sepresentation of 'hi' is 011010001101001

Hamming code with parity: [0,0,0,1,1,0,1,1,0,0,0,0,1,1,0,0,0]

Introducing a single bit over

Enter the a1(1-21), to introduce an everes: 2

Hamming code with error: [0,1,0,1,1,0,1,1,0,0,0,0,1,1,0,0,1,0,0]

Correcting hamming code: [0,0,0,1,1,0,1,1,0,0,0,0,0,1,1,0,0,1,0,0]

Final output after correcting 'hi'

## Result:

Thus the program of error convection at dotalink layer by transming code is succentrally societed and output it ionified

Q 18/29