ExpNO. 5 Date: 1.8.25

AIM: Woulte a pologram to emplement error detection and correction using HAMIMINET code concept!

Esiour correction at Data Link Layer:

Hamming code es a set of evercorrection codes that can be used to detect and correct the errors that can occur when the data is transmitted from the sender to the succeiver.

: (It) spend of I da. sender Program:

- Apply hamming code concept on the benary data and add redundant bets to it.

det hamming-code (data):

insert_bits (data): (how - forth was)

E JO DATE OF MY

len (data)

there auter

where (2** 91) < (m+ 91+1):

ports on the lines to be to

n = m for 2thong 1 pting - show - show

result = ['O'] * n

J = 0

: steb presser () tugos = tugoso

PRIME (Hawaning code = " the 19 shor primared.

for P in stange (1, n+1): continue l'is most Herult [-i] = bots data[-1j+1)] to the time of the of 3 = = m: break son francis L'éction résult, N', et le 100 100 100 100 det calc-parity (pdata, si): n=ten (Pdata) Dies on result = paata [:] for p in stange (91): parity - pos = (2 * * ; pourty val = 00 primation plans for K in range (1) n+1): if k y parity-pos: partty-val = int (result [-K]) stesut (-parity-pos] = str (parity-val) return result

phits, n, st = insert_bits (data) code = calc-party (pbpts, se) detuin (1. goin (code)

vinput = Proput ('Eriter bonary data:') pount l'Hanning code = 1, hamming-code (vo. ...t)

Receiver Program

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- Apply hamming code on the behavy data to check for errors
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- If there is any error, desplay the position of the error

det hamming-check (hammingcode):

n = len L hamming code)

while (2** 91) < n+1 %

91+=1

syn = 0

parity = [7

for i in stange (91):

parity - pos = 2 * * ?

parity_val = 0

for k in scange (1, n+1):

if k a parity_pos:

parety_val 1 = ent (hamming code

[-kJ)

parity. append (parity_val <2)

synbits = 1. join (str(x) for x in reversed (partity))

code = 'nput l'Enter received hamming code: ")
sies, error = hamming_check (code)

print ('Error bits:', res)

COURT PLACE IND if error ==0: pount (No error detected) ecre for chili else: pouent l'Error detected at bit position: error) SUP A NEW AND STUDENT OBSERVATION. Input and Output RESTART: C:\Users\blink\Desktop\assignment.py Enter binary data: 1001101 Hamming code = 10011100101 ton. Note the second of all in a small or second === RESTART: C:\Users\blink\Desktop\assignment.py ====== Enter received Hamming code: 10010100101 Error syndrome bits: 0111 Error detected at bit position: 7 bactification of the Chesting of the Enter received Hamming code: 10011100101

Error syndrome bits: 0000 No error detected. TOV WHATCH ! W No Carly And Willy all RESULT! sender and succeiver purgetam hamming code concept was executed and the output.