EXP - 8

VENKATA KRISHNA GIRI KONERU
IBM18CS123

Question: implement CRC - 16 in a program

Ans:

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code: import hashlib

def xor(a,b):
    result = []
    for i in range(1, len(b)):
        if a[i] == b[i]:
            result.append('0')
        else
            result.append('1')
    return ''.join(result)

def mod2div(dividend, divisor):
    pick = len(divisor)
    tem = dividend[0:pick]
    while pick < len(dividend):
        if tmp[0] == '1':
            tmp = xor(divisor, tmp) + dividend[pick]
        else:
            tmp = xor('0'*pick, temp) + dividend[pick]
        pick += 1
    if tmp[0] == '1':
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        tmp = xor(divisor, tmp)
    else:
        tmp = xor('0'*pick, tmp)
    checkword = tmp
    return checkword

def encodeData(data, key)
    l_key = len(key)

appended_data = data + '0'*(l-key-1)
remainder = mod2div(append_data, key)

code word = data + remainder
return codeword

def decodeData(code, key):
remainder = mod2div(code, key)
    return remainder

data = input("Enter data:")
print("datawords:" + str(data))

key = "10001000000100001"
print("generating polynomial:" + key)
codeword = encodData(data, key)
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print ("checksum :", codeword)
print ("transmitted codeword :" + str(codeword))
code = input ("enter transmitted codeword :")

recieved_data = int(decodeData(code, key))
if recieved_data == 0;
print ("NO ERROR")
else
   print("ERROR")
   print(recieved_data)
```

K.V. Krishna giri