#CRC code generation def CRC(data, poly):

data.extend([0] \* (len(poly) - 1))

for i in range(len(data) - len(poly) + 1): if data[i] == 1:

for j in range(len(poly)):

data[i + j] = data[i + j] ^ poly[j] crc = data[-len(poly) + 1:]

return crc

data = list(map(int, input("Enter the data bits:\n"))) dup\_data=data.copy()

poly = list(map(int, input("Enter the generator polynomial in binary form:\n")))

crc\_code = CRC(data,poly) dup\_data.extend(crc\_code)

print("CRC code:{}".format(''.join(map(str, dup\_data)) )) # error checking

def check():

data1 = list(map(int,input("Enter the data word received by you:

\n")))

data1\_dup=data1.copy()

poly1 = list(map(int,input("Enter your generator polynomial in binary form:\n")))

for i in range(len(data1) - len(poly1) + 1): if data1[i] == 1:

for j in range(len(poly1)):

data1[i + j] = data1[i + j] ^ poly1[j] crc = data1[-len(poly) + 1:]

count = 0

for i in range(len(poly1)-1): if crc[i]!=0:

count+=1 if count==0:

print("The codeword received has no error") print("The correct data bits are =",(data1\_dup[0:-

len(poly1)+1])) else:

print("The received code word is wrong\n")

check() '''

python -u "C:/Users/Rishab/OneDrive/Desktop/CN Experiments/import crc.py"

Enter the data bits:

110101

Enter the generator polynomial in binary form:

101

CRC code:11010111

Enter the data word received by you:

11010110

Enter your generator polynomial in binary form:

101

The received code word is wrong

python -u "C:/Users/Rishab/OneDrive/Desktop/CN Experiments/import crc.py"

Enter the data bits:

1101011

Enter the generator polynomial in binary form:

101

CRC code:110101110

Enter the data word received by you:

110101110

Enter your generator polynomial in binary form:

101

The codeword received has no error

The correct data bits are = [1, 1, 0, 1, 0, 1, 1]

'''