**Ques 2.** Implement the error detecting code.

Ans:-

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def hamming\_check(code):

# Calculate the number of parity bits.

n = len(code)

r = 0

while 2\*\*r <= n:

r += 1

# Generate the syndrome.

syndrome = 0

for i in range(r):

pos = 2\*\*i - 1

bit = 0

for j in range(pos, n, 2\*pos + 2):

for k in range(pos + 1):

if j + k >= n:

break

if (k != pos):

bit = bit ^ int(code[j + k])

syndrome += bit \* (2\*\*i)

# If the syndrome is non-zero, an error has occurred.

if syndrome > 0:

return True

return False

code = input("Enter code : ")

if hamming\_check(code):

print("Errors detected!")

else:

print("No errors detected.")

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