

Week 10- Day 3 : Coding Challenge

(Maximum marks -15)

Q-1) Write a program to convert a string of binary number into a decimal number: (5 marks)

(Easy)

eg:

Sample Input

st = "101"

Sample output

5

Revise the lecture to see the algorithm to convert binary to decimal

Q-2) Number of 1 Bits: (5 marks)

(Medium)

<https://leetcode.com/problems/number-of-1-bits/>

Write a function that takes an unsigned integer and returns the number of '1' bits it has (also known as the Hamming weight).

Example 1:

Input: n = 00000000000000000000000000001011

Output: 3

Explanation: The input binary string 00000000000000000000000000001011 has a total of three '1' bits.

Q-3)Write a function to perform XOR between two positive integers: (5 marks), do not use the xor operator.

(Easy)

Sample Input:

A = 5

B = 3

Sample Output:

$$A^B = 6$$

explanation:

Take two inputs A and B as integers.

Convert them to binary,

perform XOR operation,

return resultant binary number as decimal number .

$$\Rightarrow A = 5, B = 3$$

$$\Rightarrow A = 101, B = 011$$

$$\Rightarrow A^B = 110$$

$$\Rightarrow (110)_2 = (6)_{10}$$

Marks distribution:

Question 1,2 and 3 carry 5 marks each.