

Indian Institute of Technology Kharagpur

Programming Language Lab (MA49015/MA69003)

Assignment-10

1. Given a positive integer, write a function to find if it is a power of four or not.
2. Write a C program to return position of first 1 from right to left, in binary representation of an Integer.
I/P: 18 (Binary Representation 010010)
O/P: 2
3. Given a positive integer, check whether it has alternating bits: namely, if two adjacent bits will always have different values.
Example: I/p =5 o/p true because 101 I/p =7 o/p False because 111 (not alternate 1 and 0)
4. Find Duplicate element in array using bit operator. Array contain only one duplicate element.(Hint: EX-OR operator).
Example: I/p = 2 5 7 3 1 3 8
O/p=3
5. Given two variables, x, and y, swap the two variables without using a third variable. (Hint: Use Bitwise XOR)
6. Given two signed integers, write a function that returns true if the signs of given integers are different, otherwise false. (The function should not use any of the arithmetic operators.)
For example: The function should return true -1 and +100, and should return false for -100 and -200.
7. Given two numbers 'a' and 'b'. Write a program to count number of bits needed to be flipped to convert 'a' to 'b'.
Example : I/P: a=10 , b=20
O/P: 4
8. Given a number N, the task is to check whether the number is even or odd using Bitwise Operators.
Example: N = 11
O/P: Odd