Computer Organization and Assembly Language - Lab
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Bit Manipulation Assignment

Question 1. Suppose you're given an integer. First count how many minimum logical shifts are required to make it a 0. Then do shifting and make it equal to 0.

Example 1:
Input: 00000100
Output: 3
Reason: 3 shifts are required to make it 00000000

Example 2:
Input: 01000000
Output: 2
Reason: 2 shifts are required to make it 00000000

NOTE: Select type of logical shift wisely.

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Question 2. Suppose you're given an array of integers. Using only TEST instruction check which integer is even or odd and count the number of evens and odds.

Example:
Input: 2, 3, 6, 4, 8, 67, 32
Output: Evens - 5, Odds - 2

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Question 3. Suppose you're given an array of integers. Integers on even indices should be modified in a way that they become integer+1. Integers on odd indices should be modified in a way that they become integer-1.

Example:
Input: 23, 65, 12, 6, 45, 38, 44, 9, 87, 100
Output: 24, 64, 13, 5, 46, 37, 45, 8, 88, 99

NOTE: You're supposed to use OR, AND, NOT for bit manipulation. Other than bit manipulation, all methods used will be marked as 0.