

Homework 3

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Jane, Emma's best friend, wants to build an extraordinary logical machine. She tells Emma to ask her friend (you) to help her simulate this machine on a computer using your knowledge of the assembly language.

As input, your code will receive a sequence of (at most 100) positive integers. A "0" indicates the end of the sequence (The "0" is not part of the sequence). Going forward assuming you have saved the inputs as an array with indices $0, 1, 2, \dots, n-1$ you must XOR the number at index i with the one at index $n-i-1$. Notice that if n is odd, the middle number must be XORed with itself. After this, your code must count how many bits are valued 1 in each produced number then print the numbers from least to most.

Your code **must** comply with the following rules:

- You must use the memory/data segment (or BSS segment).
- You must use the `read_int`, `print_int`, and `print_char` functions (from the textbook) for I/O.
- You can only use the commands you have learned so far in the class.
- **You cannot use the XOR instruction!**

Please notice that your code will be checked for similarity. In the case of cheating the student will receive a negative point. It is your responsibility to protect your own code.

Please upload only the ".asm" file on courses.kntu.ac.ir.

You can use suggested algorithms in these documents or any other algorithm for executing XOR.

[Link 1](#) & [Link 2](#)

Example:

Input:

2 3 10 7 21 1 4 2 0

Output:

0 2 3 3