CSE 102 : Online on 1D Array & Function (B2)

Given an integer n ($1 \leq n \leq 1000$) followed by n integers, you have to sort them. But the logic of sorting is not simply comparing their values, rather it is a bit complex. This is what you need to do.

a. If number of 1's in the binary representation of a number, x is less than that of another number y, x should be placed before y.
b. If number of 1's in the binary representation of y is less than that of x, y should be placed before x.
c. If number of 1's in binary representation of x and y are equal,
    i. if x has more factors than y then it should be placed before y.
    ii. if y has more factors than x then it should be placed before x.
    iii. if x and y have equal number of factors, the smaller, number should be placed before the larger one.

Sample Input	Sample Output
5 1 2 3 4 5	4 2 1 3 5
4 1 2 4 8	8 4 2 1
3 3 5 6	6 3 5

You must write at least two function, one for finding number of 1's in the binary representation of a number and another for factor counting. Figure out their parameters and return types by yourself.