

#Problem 1:

Name: Upper and Lower Bound

Description:

Given a sorted array A of size N and a search value S, you have to find the upper and lower bound value for S.

In the first line, you will be given N and S. In the second line, you will be given N values denoting the sorted array.

You have to print the upper and lower bound respectively with a single blank space. Keep a new line character after each output. Print the answer using 0 based indexing.

Upper Bound: The index of the smallest value in the sorted array which is greater than S. For repeating such values consider the largest or the right-most index. If the largest value in the array is smaller than S. Then the upper bound is the size of the array.

Lower Bound: The index of the largest value in the sorted array which is smaller or equal to S. For repeating such values consider the smallest or the left-most index. If S is smaller than the smallest value in the array, consider the lower bound as 0.

Limits:

$1 \leq |A| \leq 100000$

Test Cases:

Input	Output
5 3 1 2 3 7 8	3 2
5 4 1 2 3 7 8	3 2
8 6 1 3 5 5 5 7 9 10	5 2
8 12 1 3 5 5 5 7 9 10	8 7
8 0 1 3 5 5 5 7 9 10	0 0
6 3 1 2 2 4 4 7	4 1
6 2 1 2 2 4 4 7	4 1

- First solve for non repeating elements
- Then consider the solution for repeating elements
- Try to write code using separate functions