Input
You will be given two lines. The first line will contain the array A, the second line will contain the search key k. The size of the array will not be more than 100000. The array will be sorted. So, you have to use binary search for best performance.

Output
Output will consist of two lines. The first line will denote how many times the search key appears in the array. The second line will denote the range where the search key appears in the form of $start -> end$. If the search key is not present in the array then the second line will consist of only one number, -1.

Example

No.	Input	Output
1	1 2 2 3 4 5 5 5 6 7 8 5	3 5 -> 7
2	10 15 15 18 20 25 25 25 28 30 32 22	0 -1
3	10 15 15 18 20 25 25 25 28 30 32 20	1 4 -> 4

Explanation

In the first input, the search key 5 appears in the array 3 times, from index 5 to index 7.

In the second input, the search key 22 is not present in the array. Hence the output is 0 and -1.

In the third input, the search key 20 appears only once in the array, from index 4 to index 4.