

## K Smallest Elements

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You are given with an integer  $k$  and an array of integers that contain numbers in random order. Write a program to find  $k$  smallest numbers from given array. You need to save them in an array and return it.

Time complexity should be  $O(n * \log k)$  and space complexity should not be more than  $O(k)$ .

Note: Order of elements in the output is not important.

### Input Format :

The first line of input contains an integer, that denotes the value of the size of the array. Let us denote it with the symbol  $N$ .

The following line contains  $N$  space separated integers, that denote the value of the elements of the array.

The following line contains an integer, that denotes the value of  $k$ .

### Output Format :

The first and only line of output print  $k$  smallest elements. The elements in the output are separated by a single space.

### Constraints:

Time Limit: 1 sec

### Sample Input 1 :

```
13
2 12 9 16 10 5 3 20 25 11 1 8 6
4
```

### Sample Output 1 :

```
1 2 3 5
```