

CS240, Fall 2021 – HW4
Due: midnight Mon Nov 29, 2021

Instructions

1. Submit your code to the contest website (the link is on the class website)
2. Your submission will be automatically graded.
3. You can submit unlimited times and the highest grade among all submissions will be taken.
4. The input and output of your code must be stdin and stdout, respectively. The system's judge test consists of 10 pairs of input/output files. Your program will be tested with our input and the judge test will compare your output with our output. If they match for each test case, you earn 10 points. If they match for all 10 cases, you earn 100 points.
5. You should test your code locally and make sure it builds correctly before submitting.

Problem Description: doubly linked list

Input: an array of numbers, sorted in the ascending order and another number. The input has the following format:

- + line 1 contains a nonnegative number, indicating the number of elements in the array.
- + line 2 contain the array of numbers, each is separated from other by a white space.
- + line 3 contain a number x
- + note that the last line does not contain '\n'

Output: two arrays of numbers in the following format:

- + line 1: the input array and x in the ascending order
- + line 2: the input array and x in the descending order

Requirement:

- + use doubly linked list for this problem
- + do not operate any sorting on any arrays.

Examples:

Input1

```
5
1 3 5 7 9
2
```

Output1

```
1 2 3 5 7 9
9 7 5 3 2 1
```

Input2

```
5
1 3 5 7 9
10
```

Output2

```
1 3 5 7 9 10
10 9 7 5 3 1
```

Input3

```
5
1 3 5 7 9
```

0

Output3

0 1 3 5 7 9

9 7 5 3 1 0

Input4

0

10

Output4

10

10

Input5

1

10

10

Output5:

10 10

10 10