

# Insertion Sort - Part 1 ■



Problem	Submissions	Leaderboard	Discussions			
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#### Sorting

One common task for computers is to sort data. For example, people might want to see all their files on a computer sorted by size. Since sorting is a simple problem with many different possible solutions, it is often used to introduce the study of algorithms.

# **Insertion Sort**

These challenges will cover Insertion Sort, a simple and intuitive sorting algorithm. We will first start with an already sorted list.

#### Insert element into sorted list

Given a sorted list with an unsorted number e in the rightmost cell, can you write some simple code to *insert* e into the array so that it remains sorted?

Print the array every time a value is shifted in the array until the array is fully sorted. The goal of this challenge is to follow the correct order of insertion sort.

Guideline: You can copy the value of e to a variable and consider its cell "empty". Since this leaves an extra cell empty on the right, you can shift everything over until V can be inserted. This will create a duplicate of each value, but when you reach the right spot, you can replace it with e.

### **Input Format**

There will be two lines of input:

- Size the size of the array
- ullet the array containing Size-1 sorted integers and 1 unsorted integer e in the rightmost cell

#### **Output Format**

On each line, output the entire array every time an item is shifted in it.

## Constraints

 $\begin{aligned} &1 \leq Size \leq 1000 \\ &-10000 \leq e \leq 10000, e \in Arr \end{aligned}$ 

#### **Sample Input**

5 2 4 6 8 3

## **Sample Output**

2 4 6 8 8 2 4 6 6 8 2 4 4 6 8 2 3 4 6 8

# **Explanation**

**3** is removed from the end of the array.

In the  $1^{st}$  line 8 > 3, so 8 is shifted one cell to the right. In the  $2^{nd}$  line 6 > 3, so 6 is shifted one cell to the right.

In the  $3^{rd}$  line 4 > 3, so 4 is shifted one cell to the right.

In the  $4^{th}$  line 2 < 3, so 3 is placed at position 2.

# Task

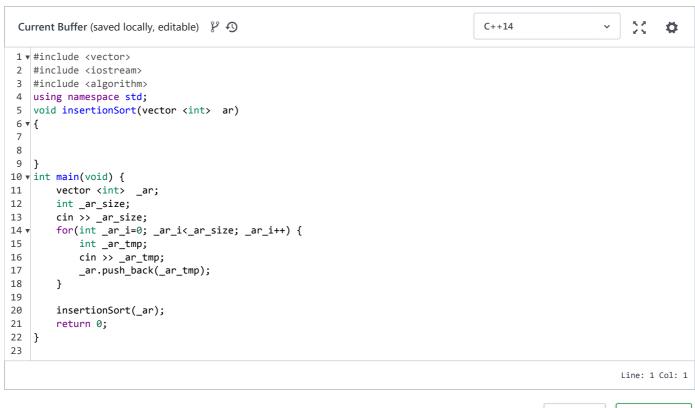
Complete the method insertionSort which takes in one parameter:

• Arr - an array with the value e in the right-most cell.

# **Next Challenge**

In the next Challenge, we will complete the insertion sort itself!

f in
Submissions:97803
Max Score:30
Difficulty: Easy
Rate This Challenge:
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```
Your code did not pass this test case.
Input (stdin)

5
2 4 6 8 3

Your Output (stdout)

~ no response on stdout ~

Expected Output

2 4 6 8 8
2 4 6 6 8
2 4 4 6 8
2 3 4 6 8

Compiler Message

Wrong Answer
```

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