

Insertion Sort - Part 1



Problem Submissions Leaderboard Discussions

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
- Arr the unsorted array of integers

Output Format

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

Constraints

 $1 \le Size \le 1000$

 $-10000 \le e \le 10000, e \in Arr$

Sample Input

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.

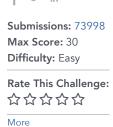
Task

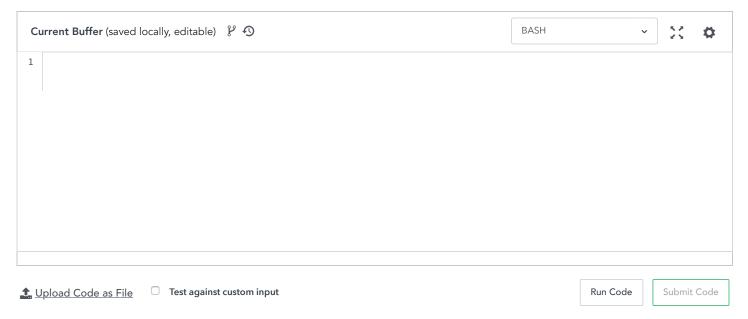
Complete the method insertionSort which takes in one parameter:

• 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!





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