Insertion Sort - Part 1

by HackerRank

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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 in the rightmost cell, can you write some simple code to *insert* 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 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 .

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

$$1 \leq Size \leq 1000$$
$$-10000 \leq e \leq 10000, e \in Arr$$

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.

Submissions:

48545

Max Score:

30

Difficulty:

Easy