Prompt | Scratchpad | Solutions | Video Explanation

Difficulty: Easy **Category:** Sorting **Successful Submissions:** 52,045+

Bubble Sort

Write a function that takes in an array of integers and returns a sorted version of that array. Use the Bubble Sort algorithm to sort the array.

If you're unfamiliar with Bubble Sort, we recommend watching the Conceptual Overview section of this question's video explanation before starting to code.

Sample Input

```
array = [8, 5, 2, 9, 5, 6, 3]
```

Sample Output

```
[2, 3, 5, 5, 6, 8, 9]
```

Hints

Hint 1

Traverse the input array, swapping any two numbers that are out of order and keeping track of any swaps that you make. Once you arrive at the end of the array, check if you have made any swaps; if not, the array is sorted and you are done; otherwise, repeat the steps laid out in this hint until the array is sorted.

Optimal Space & Time Complexity

Best: O(n) time | O(1) space - where n is the length of the input array Average: O(n^2) time | O(1) space - where n is the length of the input array Worst: O(n^2) time | O(1) space - where n is the length of the input array

Your Solutions | Run Code

Solution 1 | Solution 2 | Solution 3

```python
def bubbleSort(array, reverse=False):
    # Algorithm
    # Bubble sort, sometimes referred to as sinking sort, is a simple sorting algorithm that repeatedly steps through the list,
    # compares adjacent elements and swaps them if they are in the wrong order.
    # The pass through the list is repeated until the list is sorted.
    # The algorithm, which is a comparison sort, is named for the way smaller or larger elements "bubble" to the top of the list.
    '''
    O(n**2) Time | O(1) Space: where n is the length of the input array
    '''
    for idx in range(len(array)):
        sorted = True
        for jdx in range(len(array)-idx-1):
            if reverse is True:
                if array[jdx] < array[jdx+1]:
                    array[jdx], array[jdx+1] = array[jdx+1], array[jdx]
                    sorted = False
            else:
                if array[jdx] > array[jdx+1]:
                    array[jdx], array[jdx+1] = array[jdx+1], array[jdx]
                    sorted = False

        if sorted:
            return array

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```

Custom Output | Raw Output | Submit Co

Yay, your code passed all the test cases!

19 / 19 test cases passed.

- Test Case 1 passed!
- Test Case 2 passed!
- Test Case 3 passed!
- Test Case 4 passed!
- Test Case 5 passed!
- Test Case 6 passed!
- Test Case 7 passed!
- Test Case 8 passed!
- Test Case 9 passed!
- Test Case 10 passed!
- Test Case 11 passed!
- Test Case 12 passed!
- Test Case 13 passed!
- Test Case 14 passed!
- Test Case 15 passed!
- Test Case 16 passed!
- Test Case 17 passed!
- Test Case 18 passed!