

Prompt

Difficulty: Category: Searching Successful Submissions: 47,891+

Find Three Largest Numbers

Write a function that takes in an array of at least three integers and, without sorting the input array, returns a sorted array of the three largest integers in the input array.

The function should return duplicate integers if necessary; for example, it should return `[10, 10, 12]` for an input array of `[10, 5, 9, 10, 12]`.

Sample Input

```
array = [141, 1, 17, -7, -17, -27, 18, 541, 8, 7, 7]
```

Sample Output

```
[18, 141, 541]
```

Hints

Hint 1

Can you keep track of the three largest numbers in an array as you traverse the input array?

Hint 2

Following the suggestion in Hint #1, try traversing the input array and updating the three largest numbers if necessary by shifting them accordingly.

Optimal Space & Time Complexity

O(n) time | O(1) space - where n is the length of the input array

Your Solutions

Solution 1 **Solution 2** Solution 3

```
1  '''
2  O(n*m) Time | O(1) Space: where n is the length of the input array and,
3  m is the number of largest elements required
4
5  Runs in O(n) Time if m is fixed
6  '''
7  def get_n_largest(array, number):
8      if number > len(array):
9          return array
10
11     result = [None] * number
12
13     for idx in range(number):
14         largest = 0
15         for arr_idx in range(len(array) - idx):
16             if array[arr_idx] > array[largest]:
17                 largest = arr_idx
18
19         array[largest], array[len(array) - 1 - idx] = array[len(array) - 1 - idx], array[largest]
20         result[number - 1 - idx] = array[len(array) - 1 - idx]
21
22     return result
23
24
25
26 def findThreeLargestNumbers(array):
27     return get_n_largest(array, 3)
28
29
30 # Kunal Wadhwa
31
```

Custom Output Raw Output **Submit Code**

Yay, your code passed all the test cases!

8 / 8 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!