

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 # Best: O(nlog(n)) time | O(1) space
4 # Average: O(nlog(n)) time | O(1) space
5 # Worst: O(nlog(n)) time | O(1) space
6 def heapSort(array):
7     buildMaxHeap(array)
8     for endIdx in reversed(range(1, len(array))):
9         swap(0, endIdx, array)
10        siftDown(0, endIdx - 1, array)
11    return array
12
13
14 def buildMaxHeap(array):
15     firstParentIdx = (len(array) - 2) // 2
16     for currentIdx in reversed(range(firstParentIdx + 1)):
17         siftDown(currentIdx, len(array) - 1, array)
18
19
20 def siftDown(currentIdx, endIdx, heap):
21     childOneIdx = currentIdx * 2 + 1
22     while childOneIdx <= endIdx:
23         childTwoIdx = currentIdx * 2 + 2 if currentIdx * 2 + 2 <= endI
24         if childTwoIdx > -1 and heap[childTwoIdx] > heap[childOneIdx]:
25             idxToSwap = childTwoIdx
26         else:
27             idxToSwap = childOneIdx
28         if heap[idxToSwap] > heap[currentIdx]:
29             swap(currentIdx, idxToSwap, heap)
30             currentIdx = idxToSwap
31             childOneIdx = currentIdx * 2 + 1
32     else:
33         return
```

Solution 1

Solution 2

Solution 3

```
1 def heapSort(array):
2     # Write your code here.
3     pass
4
```

Our Tests

Custom Output

Submit Code

```
1 def heapSort(array):
2     # Write your code here.
3     pass
4
```

```
1 def heapSort(array):
2     # Write your code here.
3     pass
4
```

Custom Output

Submit Code

```
18 # test, pass, fail
19 test assertEqual(sorted(heapSort(25, 40, 25, 40)
20
21 # test, pass, fail
22 test assertEqual(sorted(heapSort(25, 40, 25, 40)
23
24 # test, pass, fail
25 test assertEqual(sorted(heapSort(25, 4, 40, 25, 4, 40)
26
27 # test, pass, fail
28 test assertEqual(sorted(heapSort(25, 4, 40, 25, 4, 40)
29
30 # test, pass, fail
31 test assertEqual(sorted(heapSort(25, 4, 40, 25, 4, 40)
```

Run or submit code when you're ready.