

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 class Program {
4     // Best: O(nlog(n)) time | O(1) space
5     // Average: O(nlog(n)) time | O(1) space
6     // Worst: O(nlog(n)) time | O(1) space
7     public static int[] heapSort(int[] array) {
8         buildMaxHeap(array);
9         for (int endIdx = array.length - 1; endIdx > 0; endIdx--) {
10             swap(0, endIdx, array);
11             siftDown(0, endIdx - 1, array);
12         }
13         return array;
14     }
15
16     public static void buildMaxHeap(int[] array) {
17         int firstParentIdx = (array.length - 2) / 2;
18         for (int currentIdx = firstParentIdx; currentIdx >= 0; currentIdx--) {
19             siftDown(currentIdx, array.length - 1, array);
20         }
21     }
22
23     public static void siftDown(int currentIdx, int endIdx, int[] heap) {
24         int childOneIdx = currentIdx * 2 + 1;
25         while (childOneIdx <= endIdx) {
26             int childTwoIdx = currentIdx * 2 + 2 <= endIdx ? currentIdx * 2 + 2 : -1;
27             int idxToSwap;
28             if (childTwoIdx != -1 && heap[childTwoIdx] > heap[childOneIdx]) {
29                 idxToSwap = childTwoIdx;
30             } else {
31                 idxToSwap = childOneIdx;
32             }
33             if (heap[idxToSwap] > heap[currentIdx]) {
```

Our Tests

Solution 1

```
1 class Program {
2     public static int[] heapSort(int[] array) {
3         // Write your code here.
4         return null;
5     }
6 }
7
```

Solution 2

Solution 3

Custom Output

Submit Code

```
19 #Print
20 #print testHeader()
21 testHeader = (10, 20)
22 testHeader = (10, 20)
23 #this is an example of a program that prints out testHeader()
24
25
26 #Print
27 #print testHeader()
28 testHeader = (10, 20)
29 testHeader = (10, 20)
30 #this is an example of a program that prints out testHeader()
31
32
```

Run or submit code when you're ready.