

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     func heapSort(_ array: [Int]) -> [Int] {
8         var mutableArray = array
9
10        buildHeap(&mutableArray)
11
12        for index in stride(from: array.count - 1, to: 0, by: -1) {
13            swap(0, index, &mutableArray)
14
15            var startIndex = 0
16            var endIndex = index - 1
17
18            siftDown(&startIndex, &endIndex, &mutableArray)
19        }
20
21        return mutableArray
22    }
23
24    func buildHeap(_ array: inout [Int]) {
25        var firstParentIndex = Double((array.count - 2) / 2)
26        firstParentIndex = firstParentIndex.rounded(.down)
27
28        for var currentIndex in (0 ... Int(firstParentIndex)).reversed {
29            var endIndex = array.count - 1
30            siftDown(&currentIndex, &endIndex, &array)
31        }
32    }
33}
```

Solution 1 Solution 2 Solution 3

```
1 class Program {
2     func heapSort(_ array: [Int]) -> [Int] {
3         // Write your code here.
4         return []
5     }
6 }
7
```

Our Tests

```
1 class ProgramTests {
2     func test() {
3         let program = Program()
4         let result = program.heapSort([1, 2, 3, 4, 5, 6, 7, 8, 9, 10])
5         XCTAssertEqual(result, [1, 2, 3, 4, 5, 6, 7, 8, 9, 10])
6     }
7 }
```

Custom Output

Submit Code

```

18         self.event_handlers[2], self.program_handlers[2], 1000
19     )
20     self.event_handlers[2] = self.handlers = self.handlers
21     self.event_handlers[2], 10, self.program_handlers[2], 1000
22 )
23     self.event_handlers[2] = self.handlers = self.handlers
24     self.event_handlers[2], 10, 10, self.program_handlers[2], 10, 1000
25 )
26     self.event_handlers[2] = self.handlers = self.handlers
27     self.event_handlers[2], 10, 10, self.program_handlers[2], 10, 1000
28 )
29     self.event_handlers[2] = self.handlers = self.handlers
30     self.event_handlers[2], 10, 10, self.program_handlers[2], 10, 1000
31 )
32     self.event_handlers[2] = self.handlers = self.handlers

```

Run or submit code when you're ready.