

Our Solution(s)	Run Code
Solution 1	
<pre>1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved. 2 3 import java.util.*; 4 5 class Program { 6 static class MinHeap { 7 List<Integer> heap = new ArrayList<Integer>(); 8 9 public MinHeap(List<Integer> array) { 10 heap = buildHeap(array); 11 } 12 13 // O(n) time O(1) space 14 public List<Integer> buildHeap(List<Integer> array) { 15 int firstParentIdx = (array.size() - 2) / 2; 16 for (int currentIdx = firstParentIdx; currentIdx >= 0; currentIdx--) { 17 siftDown(currentIdx, array.size() - 1, array); 18 } 19 return array; 20 } 21 22 // O(log(n)) time O(1) space 23 public void siftDown(int currentIdx, int endIdx, List<Integer> 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 = childTwoIdx <= endIdx && heap.get(childTwoIdx) < heap.get(childOneIdx) ? childTwoIdx : childOneIdx; 28 if (idxToSwap != -1) { 29 heap.set(currentIdx, heap.get(idxToSwap)); 30 heap.set(idxToSwap, heap.get(currentIdx)); 31 } 32 currentIdx = idxToSwap; 33 } 34 } 35 } 36 }</pre>	

Your Solutions			Run Code
Solution 1	Solution 2	Solution 3	
<pre>1 import java.util.*; 2 3 // Do not edit the class below except for the buildHeap, 4 // siftDown, siftUp, peek, remove, and insert methods. 5 // Feel free to add new properties and methods to the class. 6 class Program { 7 static class MinHeap { 8 List<Integer> heap = new ArrayList<Integer>(); 9 10 public MinHeap(List<Integer> array) { 11 heap = buildHeap(array); 12 } 13 14 public List<Integer> buildHeap(List<Integer> array) { 15 // Write your code here. 16 return null; 17 } 18 19 public void siftDown(int currentIdx, int endIdx, List<Integer> heap) { 20 // Write your code here. 21 } 22 23 public void siftUp(int currentIdx, List<Integer> heap) { 24 // Write your code here. 25 } 26 27 public int peek() { 28 // Write your code here. 29 return -1; 30 } 31 32 public int remove() { 33 // Write your code here. 34 } 35 } 36 }</pre>			

