```java
public class SequentialHeap<T> implements PQueue<T> {
  private static final int ROOT = 1;
  int next;
  HeapNode<T>[] heap;
  public SequentialHeap(int capacity) {
    next = ROOT;
    heap = (HeapNode<T>[]) new HeapNode[capacity + 1];
    for (int i = 0; i < capacity + 1; i++) {
      heap[i] = new HeapNode<T>();
    }
  }
  public void add(T item, int score) {
    int child = next++;
    heap[child].init(item, score);
    while (child > ROOT) {
      int parent = child / 2;
      int oldChild = child;
      if (heap[child].score < heap[parent].score) {
        swap(child, parent);
        child = parent;
      } else {
        return;
      }
    }
  }
  ...
}
```

FIGURE 15.6 The SequentialHeap class: inner node class and add() method.