

```
1  public final class LazySkipList<T> {
2      static final int MAX_LEVEL = ...;
3      final Node<T> head = new Node<T>(Integer.MIN_VALUE);
4      final Node<T> tail = new Node<T>(Integer.MAX_VALUE);
5      public LazySkipList() {
6          for (int i = 0; i < head.next.length; i++) {
7              head.next[i] = tail;
8          }
9      }
10     ...
11     private static final class Node<T> {
12         final Lock lock = new ReentrantLock();
13         final T item;
14         final int key;
15         final Node<T>[] next;
16         volatile boolean marked = false;
17         volatile boolean fullyLinked = false;
18         private int topLevel;
19         public Node(int key) { // sentinel node constructor
20             this.item = null;
21             this.key = key;
22             next = new Node[MAX_LEVEL + 1];
23             topLevel = MAX_LEVEL;
24         }
25         public Node(T x, int height) {
26             item = x;
27             key = x.hashCode();
28             next = new Node[height + 1];
29             topLevel = height;
30         }
31         public void lock() {
32             lock.lock();
33         }
34         public void unlock() {
35             lock.unlock();
36         }
37     }
38 }
```

FIGURE 14.4 The LazySkipList class: constructor, fields, and Node class.