```java
1 package components.WaitingLine;
2
3
4 /**
5  * {@code WaitingLineKernal} enhanced with secondary methods.
6  *
7  * @param <T>
8  *            type of {@code WaitingLine} entries
9  * @mathdefinitions {@code
10  * IS_TOTAL_PREORDER (
11  *    r: binary relation on T
12  *   ) : boolean is
13  *   for all x, y, z: T
14  *    ((r(x, y) or r(y, x))  and
15  *     (if (r(x, y) and r(y, z)) then r(x, z)))
16  *
17  * IS_SORTED (
18  *    s: string of T,
19  *    r: binary relation on T
20  *   ) : boolean is
21  *   for all x, y: T where (<x, y> is substring of s) (r(x, y))
22  * }
23  */
24 public interface WaitingLine<T> extends WaitingLineKernal<T> {
25     /**
26      * Removes and returns the entry at given position.
27      *
28      * @param pos
29      *            position of the item being removed
30      * @return the entry removed
31      * @updates this
32      * @requires {@code this /= <>}
33      * @ensures {@code #this = <dequeue> * this}
34      */
35     T remove1(int pos);
36
37     /**
38      * Locates and returns the position of the given item
39      *
40      *@param x
41      *            item being found
42      * @return the location of the item
43      * @requires {@code this /= <>}
44      * @ensures length = |this|
45      */
```

```
46      int locate1(T x);
47
48 }
49
```