```java
 1 import components.map.Map;
 2 import components.map.Map.Pair;
 3 import components.queue.Queue;
 4 import components.queue.Queue1L;
 5
 6 public class HW9_2231 {
 7
 8     public static void main(String[] args) {
 9         // TODO Auto-generated method stub
10
11     }
12
13     /**
14      * Finds pair with first component {@code key} and, if such exists, moves it
15      * to the front of {@code q}.
16      *
17      * @param <K>
18      *            type of {@code Pair} key
19      * @param <V>
20      *            type of {@code Pair} value
21      * @param q
22      *            the {@code Queue} to be searched
23      * @param key
24      *            the key to be searched for
25      * @updates q
26      * @ensures <pre>
27      * perms(q, #q)   and
28      * if there exists value: V (<(key, value)> is substring of q)
29      *  then there exists value: V (<(key, value)> is prefix of q)
30      * </pre>
31      */
32     private static <K, V> void moveToFront(Queue<Pair<K, V>> q, K key) {
33
34         Queue<Pair<K, V>> result = new Queue1L<>();
35         for (Map.Pair<K, V> each : q) {
36             if (key.equals(each.key())) {
37                 result.enqueue(each);
38             }
39         }
40         q.transferFrom(result);
41
42     }
43
44 }
45
```