

```
1 import components.queue.Queue;
2 import components.queue.Queue2;
3 import components.simplereader.SimpleReader;
4
5 /**
6  * {@code Queue} represented as a {@code Sequence} of entries, with
7  * implementations of primary methods.
8  *
9  * @param <T>
10 *      type of {@code Queue} entries
11 * @correspondence this = $this.entries
12 */
13 public class HelloWorld {
14
15     public static void main(String[] args) {
16
17     }
18
19     /**
20      * Returns the first "word" (maximal length string of
21      * characters not in
22      * {@code SEPARATORS}) or "separator string" (maximal length
23      * string of
24      * characters in {@code SEPARATORS}) in the given {@code text}
25      * starting at
26      * the given {@code position}.
27      *
28      * @param text
29      *      the {@code String} from which to get the word or
30      *      separator
31      *      string
32      * @param position
33      *      the starting index
34      * @return the first word or separator string found in {@code
35      * text} starting
36      * at index {@code position}
37      * @requires 0 <= position < |text|
38      * @ensures <pre>
39      * nextWordOrSeparator =
40      * text[position, position + |nextWordOrSeparator|) and
41      * if entries(text[position, position + 1)) intersection
42      * entries(SEPARATORS) = {}
43      * then
44      * entries(nextWordOrSeparator) intersection
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    entries(SEPARATORS) = {} and
39     * (position + |nextWordOrSeparator| = |text| or
40     *     entries(text[position, position + |nextWordOrSeparator| +
    1))
41     *     intersection entries(SEPARATORS) /= {})
42     * else
43     *     entries(nextWordOrSeparator) is subset of
    entries(SEPARATORS) and
44     * (position + |nextWordOrSeparator| = |text| or
45     *     entries(text[position, position + |nextWordOrSeparator| +
    1))
46     *     is not subset of entries(SEPARATORS))
47     * </pre>
48     */
49     private static String nextWordOrSeparator(String text, int
    position) {
50         String result;
51         int secondIndex = position;
52         if (SEPARATORS.contains(text.charAt(position))) {
53             while (secondIndex < text.length()
54                 &&
55                 SEPARATORS.contains(text.charAt(secondIndex))) {
56                 secondIndex++;
57             } else {
58                 while (secondIndex < text.length()
59                     && !
60                     SEPARATORS.contains(text.charAt(secondIndex))) {
61                     secondIndex++;
62                 }
63             }
64             result = text.substring(position, secondIndex);
65             return result;
66         }
67
68         /**
69         * Tokenizes the entire input getting rid of all whitespace
    separators and
70         * returning the non-separator tokens in a {@code
    Queue<String>}.
71         *
72         * @param in
73         *     the input stream

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74     * @return the queue of tokens
75     * @requires in.is_open
76     * @ensures <pre>
77     * tokens =
78     *   [the non-whitespace tokens in #in.content] *
    <END_OF_INPUT> and
79     * in.content = <>
80     * </pre>
81     */
82     public static Queue<String> tokens(SimpleReader in) {
83         Queue<String> answer = new Queue2<String>();
84         while (!in.nextLine().equals(END_OF_INPUT)) {
85             String nextWord = nextWordOrSeparator(in.nextLine(),
0);
86                 if (!nextWord.contains(SEPARATORS)) {
87                     answer.enqueue(nextWord);
88                 }
89             }
90         return answer;
91     }
92 }
```