

```

1 import components.queue.Queue;
2 import components.simplewriter.SimpleWriter;
3 import components.simplewriter.SimpleWriter1L;
4
5 /**
6  * HW29
7  *
8  * @author Sam Espanioly
9  */
10 public final class HW29 {
11
12     /**
13      * Default constructor--private to prevent instantiation.
14      */
15     private HW29() {
16         // no code needed here
17     }
18
19     /**
20      * Evaluates a Boolean expression and returns its value.
21      *
22      * @param tokens
23      *         the {@code Queue<String>} that starts with a bool-expr string
24      * @return value of the expression
25      * @updates tokens
26      * @requires [a bool-expr string is a prefix of tokens]
27      * @ensures <pre>
28      *   valueOfBoolExpr =
29      *     [value of longest bool-expr string at start of #tokens] and
30      *     #tokens = [longest bool-expr string at start of #tokens] * tokens
31      * </pre>
32      */
33     public static boolean valueOfBoolExpr(Queue<String> tokens) {
34         boolean check = false;
35         if (tokens.length() > 0
36             && !tokens.front().equals("### END OF INPUT ###")) {
37             String token = tokens.dequeue();
38             if (token.equals("T")) {
39                 check = true;
40             } else if (token.equals("F")) {
41                 check = false;
42             } else if (token.equals("NOT")) {
43                 tokens.dequeue(); // for (
44                 check = valueOfBoolExpr(tokens);
45                 tokens.dequeue(); // for )
46             }
47             if (token.equals("(")) {
48                 check = valueOfBoolExpr(tokens);
49                 token = tokens.dequeue();
50                 if (token.equals("AND")) {
51                     check = check && valueOfBoolExpr(tokens);
52                 } else { // OR
53                     check = check || valueOfBoolExpr(tokens);
54                 }
55                 tokens.dequeue(); // for )
56             }
57         }
58         return check;
59     }

```

```
60
61  /**
62   * Main method.
63   *
64   * @param args
65   *         the command line arguments; unused here
66   */
67  public static void main(String[] args) {
68      SimpleWriter out = new SimpleWriter1L();
69      //out.println("Hello World!");
70      out.close();
71  }
72
73 }
74
```