

```
1 import components.set.Set;
2
3 /**
4  *
5  * @author Vaishnavi Kasabwala
6  *
7  */
8 public final class HW21 {
9
10     /**
11      * Private constructor so this utility class cannot be instantiated.
12      */
13     private HW21() {
14     }
15
16     /**
17      * Generates the set of characters in the given {@code String} into the
18      * given {@code Set}.
19      *
20      * @param str
21      *     the given {@code String}
22      * @param charSet
23      *     the {@code Set} to be replaced
24      * @replaces charSet
25      * @ensures charSet = entries(str)
26      */
27     private static void generateElements(String str, Set<Character> charSet) {
28         int count = 0;
29         char var = 'a';
30         charSet.clear();
31
32         while (count < str.length()) {
33             if (!charSet.contains(str.charAt(count))) {
34                 var = str.charAt(count);
35                 charSet.add(var);
36             }
37             count++;
38         }
39     }
40
41     /**
42      * Returns the first "word" (maximal length string of characters not in
43      * {@code separators}) or "separator string" (maximal length string of
44      * characters in {@code separators}) in the given {@code text} starting at
45      * the given {@code position}.
46      *
47      * @param text
48      *     the {@code String} from which to get the word or separator
49      *     string
50      * @param position
51      *     the starting index
52      * @param separators
53      *     the {@code Set} of separator characters
54      * @return the first word or separator string found in {@code text} starting
55      *     at index {@code position}
56      * @requires 0 <= position < |text|
57      * @ensures <pre>
```

```

58  * nextWordOrSeparator =
59  *   text[position, position + |nextWordOrSeparator|) and
60  *   if entries(text[position, position + 1)) intersection separators = {}
61  * then
62  *   entries(nextWordOrSeparator) intersection separators = {} and
63  *   (position + |nextWordOrSeparator| = |text| or
64  *   entries(text[position, position + |nextWordOrSeparator| + 1))
65  *   intersection separators /= {})
66  * else
67  *   entries(nextWordOrSeparator) is subset of separators and
68  *   (position + |nextWordOrSeparator| = |text| or
69  *   entries(text[position, position + |nextWordOrSeparator| + 1))
70  *   is not subset of separators)
71  * </pre>
72  */
73  private static String nextWordOrSeparator(String text, int position,
74  Set<Character> separators) {
75
76      String word = "";
77      char A = text.charAt(position);
78      int count = position;
79
80      if (separators.contains(A)) {
81          while (separators.contains(A)) {
82              word += A;
83              count++;
84              A = text.charAt(count);
85          }
86
87      } else {
88          while (!separators.contains(A)) {
89              word += A;
90              count++;
91              A = text.charAt(count);
92          }
93
94      }
95
96      return word;
97  }
98  }

```