Homework 19

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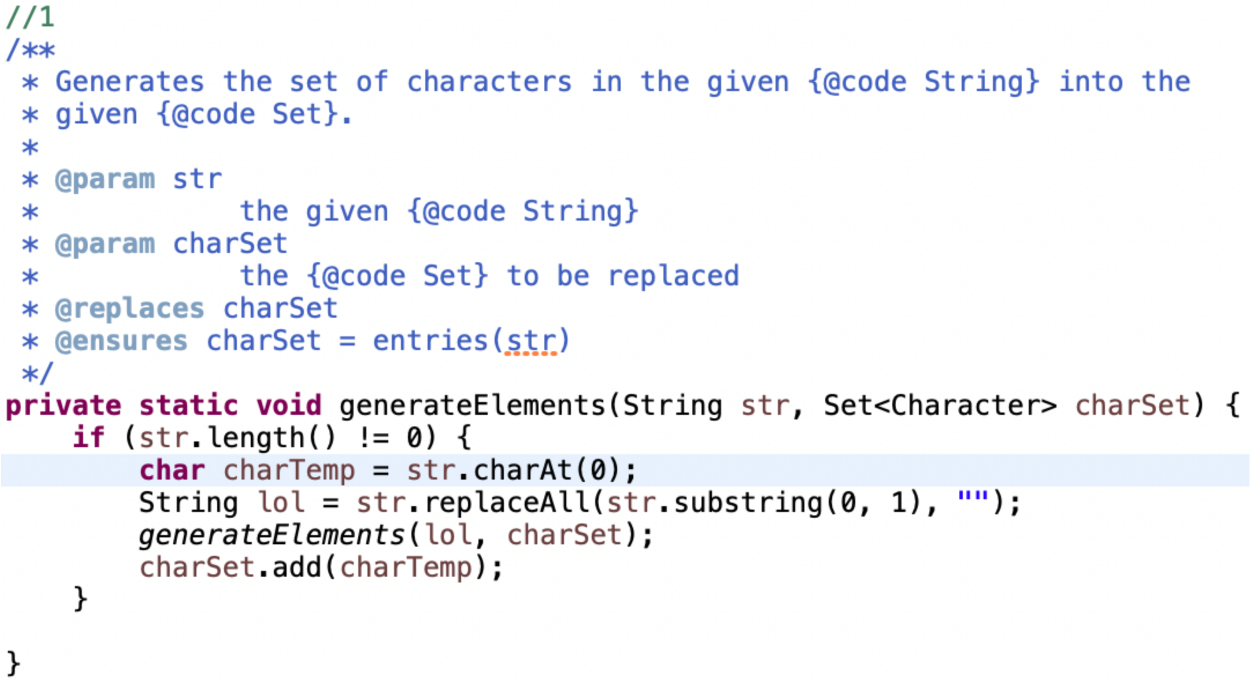
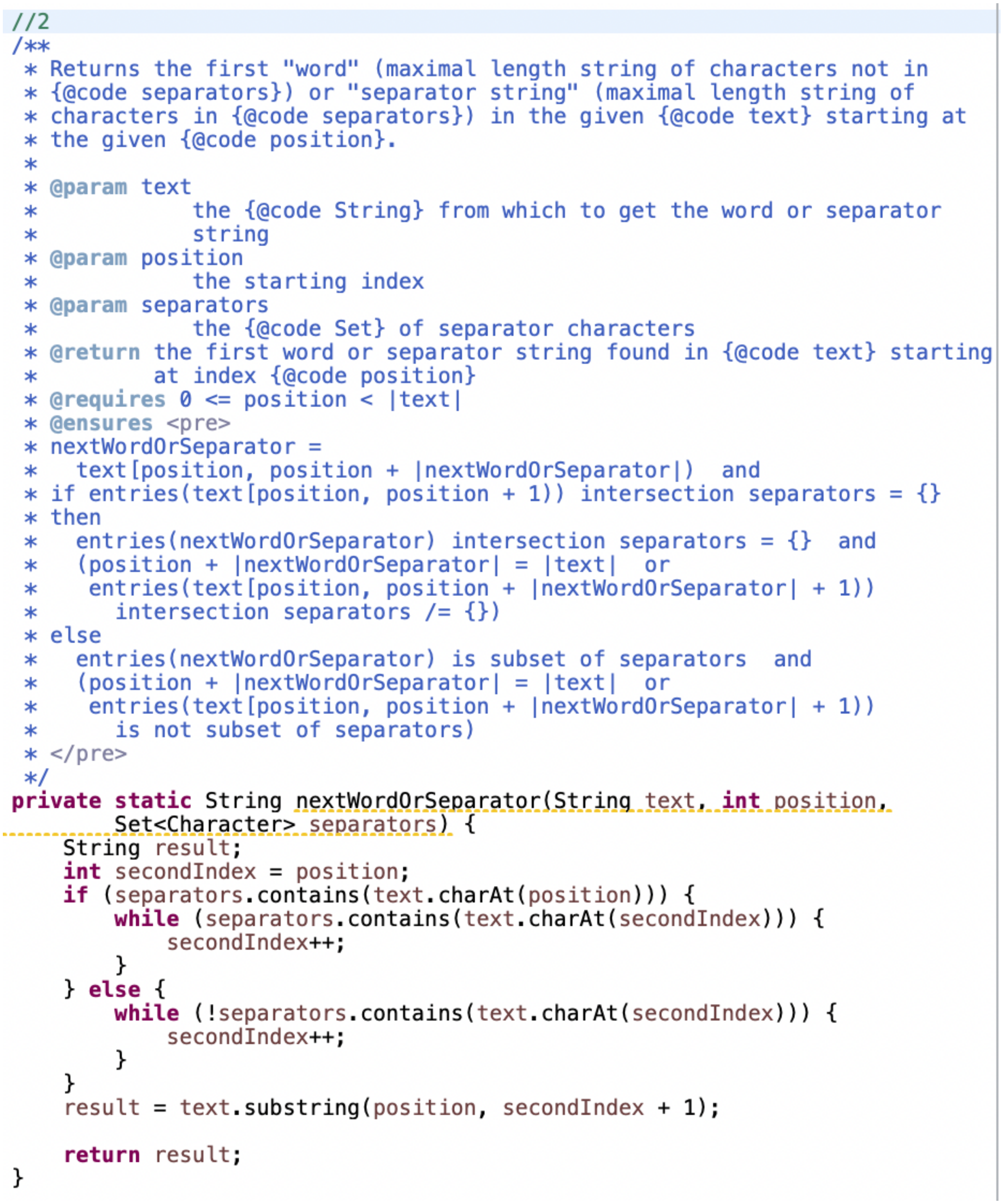


```
//1
/**
 * Generates the set of characters in the given {@code String} into the
 * given {@code Set}.
 *
 * @param str
 *            the given {@code String}
 * @param charSet
 *            the {@code Set} to be replaced
 * @replaces charSet
 * @ensures charSet = entries(str)
 */
private static void generateElements(String str, Set<Character> charSet) {
    if (str.length() != 0) {
        char charTemp = str.charAt(0);
        String lol = str.replaceAll(str.substring(0, 1), "");
        generateElements(lol, charSet);
        charSet.add(charTemp);
    }

}
```



```
//2
/**
 * Returns the first "word" (maximal length string of characters not in
 * {@code separators}) or "separator string" (maximal length string of
 * characters in {@code separators}) in the given {@code text} starting at
 * the given {@code position}.
 *
 * @param text
 *            the {@code String} from which to get the word or separator
 *            string
 * @param position
 *            the starting index
 * @param separators
 *            the {@code Set} of separator characters
 * @return the first word or separator string found in {@code text} starting
 *         at index {@code position}
 * @requires 0 <= position < |text|
 * @ensures <pre>
 * nextWordOrSeparator =
 *   text[position, position + |nextWordOrSeparator|)  and
 * if entries(text[position, position + 1)) intersection separators = {}
 * then
 *   entries(nextWordOrSeparator) intersection separators = {}  and
 *   (position + |nextWordOrSeparator| = |text|  or
 *    entries(text[position, position + |nextWordOrSeparator| + 1))
 *      intersection separators /= {})
 * else
 *   entries(nextWordOrSeparator) is subset of separators  and
 *   (position + |nextWordOrSeparator| = |text|  or
 *    entries(text[position, position + |nextWordOrSeparator| + 1))
 *      is not subset of separators)
 * </pre>
 */
private static String nextWordOrSeparator(String text, int position,
        Set<Character> separators) {
    String result;
    int secondIndex = position;
    if (separators.contains(text.charAt(position))) {
        while (separators.contains(text.charAt(secondIndex))) {
            secondIndex++;
        }
    } else {
        while (!separators.contains(text.charAt(secondIndex))) {
            secondIndex++;
        }
    }
    result = text.substring(position, secondIndex + 1);

    return result;
}
```