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1 package proj5;
2
3 /**
4  * Uses a thesaurus and word frequencies to replace
   overused words in a text document with random
   synonyms.
5  *
6  * "I affirm that I have carried out the attached
   academic endeavors with full academic honesty, in
7  * accordance with the Union College Honor Code and
   the course syllabus."
8  * author: Son Nguyen (Kyrie)
9  * version: 6/3/2020
10 */
11 public class GrammarChecker {
12
13     // ASCII integers
14     private int a_ASCII = 97;
15     private int z_ASCII = 122;
16     private int A_ASCII = 65;
17     private int Z_ASCII = 90;
18
19     // instance variable
20     private Thesaurus thesaurus;
21     private int threshold;
22     private WordCounter wc;
23     private LineReader paragraph;
24     private String[] currentLine;
25
26     /**
27      * Non-default constructor.
28      * @param thesaurusFile path to comma-separated
   file used to build a thesaurus
29      * @param threshold a word is considered "
   overused" if it appears more than
30      * (but not equal to) this many
   times in a text document
31      */
32     public GrammarChecker(String thesaurusFile, int
   threshold) {
33         thesaurus = new Thesaurus(thesaurusFile);
34         this.threshold = threshold;
35         wc = new WordCounter();
36         paragraph = null;

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37         currentLine = null;
38     }
39
40     /**
41      * helper method to slice a word including
punctuation to its content only
42      * @param word
43      * @return word's content
44      */
45     private String splitWord(String word) {
46         String toReturn = word;
47         char firstChar = word.charAt(0);
48         if (!Character.isLetter(firstChar)) {
49             if (toReturn.length() == 1) {
50                 return "";
51             }
52             toReturn = toReturn.substring(1);
53         }
54
55         int lastChar = word.charAt(word.length() - 1
56 );
57         if (!Character.isLetter(lastChar)) {
58             if (toReturn.length() == 1) {
59                 return "";
60             }
61             toReturn = toReturn.substring(0, toReturn
62 .length() - 1);
63         }
64         return toReturn;
65     }
66
67     /**
68      * Given a text file, replaces overused words
with synonyms.
69      * Finished text is printed to the console.
70      * @param textfile file with original text
71      */
72     public void improveGrammar(String textfile) {
73         System.out.println(splitWord("--"));
74         wc.findFrequencies(textfile);
75         paragraph = new LineReader(textfile, " ");
76         currentLine = paragraph.getNextLine();
77         while (currentLine != null) {
78             for (String rawWord: currentLine) {

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77         char firstChar = rawWord.charAt(0);
78         char lastChar = rawWord.charAt(
rawWord.length() - 1);
79         String currentWord = splitWord(
rawWord.toLowerCase());
80         String replacement = "";
81         int currentFrequency = wc.
getFrequency(currentWord);
82         if (currentFrequency > threshold) {
83             replacement = thesaurus.
getSynonymFor(currentWord);
84         }
85         if (replacement != "") {
86             if (firstChar < a_ASCII ||
firstChar > z_ASCII) {
87                 if (firstChar >= A_ASCII &&
firstChar <= Z_ASCII) {
88                     replacement = Character.
toUpperCase(replacement.charAt(0)) + replacement.
substring(1);
89                 }
90                 else {
91                     replacement = firstChar
+ replacement;
92                 }
93             }
94             if (lastChar < a_ASCII ||
lastChar > z_ASCII) {
95                 replacement += lastChar;
96             }
97         }
98         else {
99             replacement = rawWord;
100        }
101        System.out.print(replacement + " ");
102    }
103    currentLine = paragraph.getNextLine();
104 }
105 paragraph.close();
106 }
107 }
108

```