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1 // jol/3/textfiles/TextFile.java
2 //
3 //
4 // Copyright 2003 Bill Campbell and Ethan Bolker
5
6 import java.util.Date;
7
8 /**
9  * A TextFile mimics the sort of text file that one finds
10 * on a computer's file system. It has an owner,
11 * a create date (when the file was created),
12 * a modification date (when the file was last modified),
13 * and String contents.
14
15 * @version 3
16 */
17
18 public class TextFile
19 {
20     // Private Implementation
21
22     private String owner; // Who owns the file.
23     private Date   createdAt; // When the file was created.
24     private Date   modDate; // When the file was last modified.
25     private String contents; // The text stored in the file.
26
27     // Public Interface
28
29     /**
30      * Construct a new TextFile with given owner and
31      * contents; set the creation and modification dates.
32      *
33      * @param owner the user who owns the file.
34      * @param contents the file's initial contents.
35      */
36
37     public TextFile( String owner, String contents )
38     {
39         this.owner = owner;
40         this.contents = contents;
41         createdAt = new Date(); // date and time now
42         modDate = createdAt;
43     }
44
45     /**
46      * Replace the contents of the file.
47      *
48      * @param contents the new contents.
49      */
50
51     public void setContents( String contents )
52     {
53         this.contents = contents;
54         modDate = new Date();
55     }
56

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57     /**
58      * The contents of a file.
59      *
60      * @return String contents of the file.
61      */
62
63     public String getContents()
64     {
65         return contents;
66     }
67
68     /**
69      * Append text to the end of the file.
70      *
71      * @param text the text to be appended.
72      */
73
74     public void append( String text )
75     {
76         this.setContents( contents + text );
77     }
78
79     /**
80      * Append a new line of text to the end of the file.
81      *
82      * @param text the text to be appended.
83      */
84
85     public void appendline( String text )
86     {
87         this.setContents( contents + '\n' + text );
88     }
89
90     /**
91      * The size of a file.
92      *
93      * @return the integer size of the file
94      * (the number of characters in its String contents)
95      */
96
97     public int getSize()
98     {
99         int charCount;
100         charCount = contents.length();
101         return charCount;
102     }
103
104     /**
105      * The data and time of the file's creation.
106      *
107      * @return the file's creation date and time.
108      */
109
110     public String getCreateDate()
111     {
112         return createdAt.toString();
113     }

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113     }
114
115     /**
116     * The date and time of the file's last modification.
117     *
118     * @return the date and time of the file's last modification.
119     */
120
121     public String getModDate()
122     {
123         return modDate.toString();
124     }
125
126     /**
127     * The file's owner.
128     *
129     * @return the owner of the file.
130     */
131
132     public String getOwner()
133     {
134         return owner;
135     }
136
137     /**
138     * A definition of main(), used only for testing this class.
139     *
140     * Executing
141     * <pre>
142     * %> java TextFile
143     * </pre>
144     * produces the output:
145     * <pre>
146     * TextFile myTextFile contains 13 characters.
147     * Created by Bill, Sat Dec 29 14:02:37 EST 2001
148     * Hello, world.
149     *
150     * append new line "How are you today?"
151     * Hello, world.
152     * How are you today?
153     * TextFile myTextFile contains 32 characters.
154     * Modified Sat Dec 29 14:02:38 EST 2001
155     * </pre>
156     */
157
158     public static void main( String[] args )
159     {
160         Terminal terminal = new Terminal();
161         TextFile myTextFile
162             = new TextFile( "bill", "Hello, world." );
163         terminal.println( "TextFile myTextFile contains " +
164             myTextFile.getSize() +
165             " characters." );
166         terminal.println( "Created by " +
167             myTextFile.getOwner() + ", " +
168             myTextFile.getCreatedDate() );

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169         terminal.println( myTextFile.getContents() );
170         terminal.println();
171         terminal.println(
172             "append new line \"How are you today?\"");
173         myTextFile.appendLine( "How are you today?" );
174         terminal.println( myTextFile.getContents() );
175         terminal.println( "TextFile myTextFile contains " +
176             myTextFile.getSize() +
177             " characters." );
178         terminal.println( "Modified " +
179             myTextFile.getModDate() );
180     }
181 }

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