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1 // foj/10/Juno/LoginInterpreter.java
2 //
3 //
4 // Copyright 2003 Ethan Bolker and Bill Campbell
5 import java.util.*;
6
7 /**
8  * Interpreter for Juno login commands.
9  */
10 * There are so few commands that if-then-else logic is OK.
11 *
12 * @version 1.0
13 */
14
15 public class LoginInterpreter
16 implements InterpreterInterface
17 {
18     private static final String LOGIN_COMMANDS =
19         "help, register, <username>, exit";
20
21     private Juno system; // the Juno object
22     private OutputInterface console; // where output goes
23
24     /**
25      * Construct a new LoginInterpreter for interpreting
26      * login commands.
27      *
28      * @param system the system creating this interpreter.
29      * @param console the terminal used for input and output.
30      */
31
32     public LoginInterpreter( Juno system, OutputInterface console)
33     {
34         this.system = system;
35         this.console = console;
36     }
37
38     /**
39      * Set the console for this interpreter. Used by the
40      * creator of this interpreter.
41      *
42      * @param console the Terminal to be used for input and output.
43      */
44
45     public void setConsole( OutputInterface console)
46     {
47         this.console = console;
48     }
49
50     /**
51      * Simulates behavior at login: prompt.
52      */
53
54     public void CLILogin()
55     {
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57         welcome();
58         boolean moreWork = true;
59         while( moreWork ) {
60             moreWork = interpret(((InputInterface)console).
61                 readLine( "Juno login: " ) );
62         }
63
64     /**
65      * Parse user's command line and dispatch appropriate
66      * semantic action.
67      *
68      * @param inputLine the User's instructions.
69      * @return true except for "exit" command
70      * or null inputLine.
71      */
72
73     public boolean interpret( String inputLine )
74     {
75         if (inputLine == null) {
76             return false;
77         }
78         StringTokenizer st =
79             new StringTokenizer( inputLine );
80         if (st.countTokens() == 0) {
81             return true; // skip blank line
82         }
83         String visitor = st.nextToken();
84         if (visitor.equals( "exit" )) {
85             return false;
86         }
87         if (visitor.equals( "register" )) {
88             register( st );
89         }
90         else if (visitor.equals( "help" )) {
91             help();
92         }
93         else {
94             String password;
95             try {
96                 if (console.isGUI()) {
97                     password = st.nextToken();
98                 }
99                 else {
100                     password = readPassword( "password: " );
101                 }
102                 User user = system.lookupUser( visitor );
103                 user.matchPassword( password );
104                 new Shell( system, user, console );
105             }
106             catch (Exception e) {
107                 // NullPointerException if no such user,
108                 // JunoException if password fails to match -
109                 // message to user doesn't give away which.
110
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113 // The sysadmin would probably want a log
114 // that did keep track.
115 //
116 // Other exceptions should be caught in shell()
117 console.println("sorry");
118 }
119 }
120 return true;
121 }
122 }
123 // Register a new user, giving him or her a login name and a
124 // home directory on the system.
125 //
126 // StringTokenizer argument contains the new user's login name
127 // followed by full real name.
128 private void register( StringTokenizer line )
129 {
130     String username = "";
131     String password = "";
132     String realname = "";
133     try {
134         username = line.nextToken();
135         password = line.nextToken();
136         realname = line.nextToken().trim();
137     } catch (NoSuchElementException e) {
138     }
139     if (username.equals("") || password.equals("") ||
140         realname.equals("")) {
141         console.println(
142             "please supply username, password, real name");
143         return;
144     }
145     User user = system.lookupUser(username);
146     if (user != null) { // user already exists
147         console.println("sorry");
148         return;
149     }
150     if (badPassword( password )) {
151         console.println("password too easy to guess");
152         return;
153     }
154     Directory home = new Directory( username, null,
155         system.getUserHomes() );
156     user = system.createUser( username, home, password, realname );
157     home.setOwner( user );
158 }
159 // test to see if password is unacceptable:
160 // fewer than 6 characters
161 // contains only alphabetic characters
162
163
164
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169 private boolean badPassword( String pwd )
170 {
171     if (pwd.length() < 6) {
172         return true;
173     }
174     int nonAlphaCount = 0;
175     for (int i=0; i < pwd.length(); i++) {
176         if (!Character.isLetter(pwd.charAt(i))) {
177             nonAlphaCount++;
178         }
179     }
180     return (nonAlphaCount == 0);
181 }
182 // Used for reading the user's password in CLI.
183 private String readPassword( String prompt )
184 {
185     String line =
186         ((InputInterface) console).readline( prompt );
187     StringTokenizer st = new StringTokenizer( line );
188     try {
189         return st.nextToken();
190     } catch ( NoSuchElementException e ) {
191         return ""; // keeps compiler happy
192     }
193 }
194 // Display a short welcoming message, and remind users of
195 // available commands.
196 private void welcome()
197 {
198     console.println( "Welcome to " + system.getHostname() +
199         " running " + system.getOS() +
200         " version " + system.getVersion() );
201     help();
202 }
203 // Remind user of available commands.
204 private void help()
205 {
206     console.println( LOGIN_COMMANDS );
207     console.println("");
208 }
209 }
210
211
212
213
214
215
216
217

```