

Site

```
1 package client;
2
3 import lamport.IValueManager;
4 import utils.Constants;
5
6 import java.net.MalformedURLException;
7 import java.rmi.Naming;
8 import java.rmi.NotBoundException;
9 import java.rmi.RemoteException;
10 import java.rmi.registry.LocateRegistry;
11 import java.rmi.registry.Registry;
12 import java.util.Scanner;
13 import java.util.logging.Level;
14 import java.util.logging.Logger;
15
16
17 /**
18  * This class represents the client side of the application.
19  * Communicates with the user and remote {@link IValueManager} to set or print the value.
20  *
21  * DESCRIPTION:
22  * - Every {@link Site} class has an {@link IValueManager} attributed to it and identified by the port on
23  * which
24  * the manager is listening. Ports must be passed as main program arguments to every {@link Site}.
25  * - When the {@link Site} is launched, it connects to the {@link lamport.ValueManager} attributed to it and
26  * displays the
27  * menu containing commands to be executed by the system (such as print or modify the value).
28  * REQUIREMENTS:
29  * - All the {@link IValueManager}s have to be launched before the {@link Site}s
30  * - The linking of the {@link IValueManager}s has to be requested by the user before printing or modifying
31  * the value
32  * (use "l" command)
33  *
34  * Authors: Samuel Mayor, Alexandra Korukova
35  */
36 public class Site {
37     private static final Logger LOG = Logger.getLogger(Site.class.getName());
38
39     private IValueManager valueManager;
40
41     /**
42      * @param args
43      * - args[0] - associated {@link lamport.ValueManager}'s port
44      * @throws RemoteException
45      * @throws NotBoundException
46      */
47     public static void main(String ...args) throws RemoteException, NotBoundException {
48         int port = Integer.parseInt(args[0]);
49         new Site(port);
50     }
51
52     /**
53      * Prints the menu and executes the tasks demanded by the user
54      * @throws RemoteException
55      */
56     public void userCommands() throws RemoteException {
57         boolean run = true;
58         boolean serversLinked = false;
59         while (run) {
60             System.out.println("Enter the command you would like to execute: \n" +
61                 "- tap \"l\" to link the nodes of the system between them\n" +
62                 "- tap \"p\" to print the current value\n" +
63                 "- tap \"w\" followed by an integer to set the new value\n" +
64                 "- tap \"q\" to quit the program");
65             if(!serversLinked) {
66                 System.out.println("NOTE: After all servers are launched, be sure you have linked " +
67                     "the servers between them to insure the system to be executed properly\n" +
68                     "use \"l\" command");
69             }
70             Scanner scanner = new Scanner(System.in);
71             String command = scanner.next();
72             switch (Character.toUpperCase(command.charAt(0))) {
73                 case Constants.PRINT: {
74                     int value = valueManager.getValue();
75                     System.out.println(value);
76                     break;
77                 }
78                 case Constants.WRITE: {
79                     String valueStr = scanner.next();
80                     try {
81                         int value = Integer.parseInt(valueStr);
82                         valueManager.setValue(value);
83                     } catch (NumberFormatException e) {
84                         System.out.println(valueStr);
85                         System.out.println(Constants.UNKNOWN_COMMAND);
86                     }
87                     break;
88                 }
89             }
90         }
91     }
92 }
```

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86         case Constants.LOOKUP: {
87             try {
88                 valueManager.lookup();
89             } catch (NotBoundException | MalformedURLException e) {
90                 LOG.log(Level.SEVERE, e.getMessage(), e);
91             }
92             serversLinked = true;
93             LOG.log(Level.INFO, "Value managers linked");
94             break;
95         }
96         case Constants.QUIT: {
97             run = false;
98             break;
99         }
100     default:
101         System.out.println(Constants.UNKNOWN_COMMAND);
102     }
103 }
104 }
105
106 /**
107  * Constructor
108  * @param port the associated remote {@link IValueManager}'s port
109  */
110 public Site(int port) {
111     try {
112         Registry registry = LocateRegistry.getRegistry(Constants.SERVER_HOST);
113         valueManager = (IValueManager) Naming.lookup("rmi://" + Constants.SERVER_HOST + ":" +
114             port + "/" + Constants.REMOTE_OBJ_NAME);
115         LOG.log(Level.INFO, () -> Constants.REMOTE_OBJ_NAME + " is found on port " + port);
116         userCommands();
117     } catch (RemoteException | NotBoundException | MalformedURLException e) {
118         LOG.log(Level.SEVERE, e.getMessage(), e);
119     }
120 }
121 }
122 }
```