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network monitor project

Posted 15 January 2007 - 07:11 AM

Hi all, is anyone able to help me out with this great task in java pls? I have tried my best but have just hit the brick wall. any responses greatly appreciated.  
  
Below is the specification ( couldnt attach it unfortunately)  
  
  
Code:  
  
**NETWORK MONITORING PROGRAM**   
  
The aim of this project is to create a network monitoring utility that will enable a network engineer / technician to inspect machines on his / her network and check for good operation. You will need to design and implement two programs.   
1. The main utility.  
2. The client program.   
  
**Main utility program.**   
  
This program must have a User Graphic Interface, that presents all computers currently attached on the network and allow the user to select and view information about a particular one if he/she so wishes. Also computers on the network should come up with a different icon or colour if there is a particular problem associated with them by the user of the utility. The main core function of the utility is to communicate with the client program in regular intervals and check for good operation. If the communication cannot be established or the client takes too long to answer or it sends back a predefined message of trouble then the user can identify that this particular machine is problematic. `  
  
------ The client utility’s function is to run in all computers on the network and periodically report back (or upon request) to the main utility computer the status of its operation. The client utility may contain information about the user of the terminal at that particular moment or simply report back in a set amount of time, indicating otherwise that there is a problem. This utility does not need to have a user interface, it may require however a settings interface if you so wish.   
  
I’m assessed based on the following:  
  
• Graphics Interface  
• Networking   
• Use of objects, Methods, good understanding of java basics o Solid use of Java o Object Oriented Programming principles o Proper identification of variables o Flow diagrams o Simplicity o Functionality   
  
Tips: use Java’s coding conventions.  
• Write well-structured and readable code with appropriate comments in the right places. hints and tips:   
• Keep the fundamentals of Object Orientation in mind when you write your code i.e. reuse objects, don’t write unnecessarily long programs if you can split the work into different classes, try and use constructors to initialize your programs and don’t burden your main class with variable assignments, etc.   
•  
  
  
------------**this was my attempt with assistance before hitting the brick wall**

[view source](http://www.dreamincode.net/forums/topic/22941-network-monitor-project/#viewSource)



[print](http://www.dreamincode.net/forums/topic/22941-network-monitor-project/#printSource)[?](http://www.dreamincode.net/forums/topic/22941-network-monitor-project/#about)

|  |  |
| --- | --- |
| 001 | Server: |
| 002 | //\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | |

|  |  |  |
| --- | --- | --- |
| 003 | /\* | |
| 004 | \* |

|  |  |  |
| --- | --- | --- |
| 005 | \*program description | |
| 006 | \*author etc |

|  |  |
| --- | --- |
| 007 | \* |
| 008 | \*/ | |

|  |  |  |
| --- | --- | --- |
| 009 | //\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | |
| 010 |  |

|  |  |  |
| --- | --- | --- |
| 011 | // TCP server which sends a message to client - non threaded | |
| 012 | import java.io.\*; |

|  |  |  |
| --- | --- | --- |
| 013 | import java.util.\*; | |
| 014 | import java.net.\*; |

|  |  |
| --- | --- |
| 015 |  |
| 016 |  |

|  |  |  |
| --- | --- | --- |
| 017 | public class Server | |
| 018 | { |

|  |  |  |
| --- | --- | --- |
| 019 | public static void main(String args[]) | |
| 020 | { |

|  |  |  |
| --- | --- | --- |
| 021 | BufferedReader in = new BufferedReader(new InputStreamReader(System.in)); | |
| 022 |  |

|  |  |  |
| --- | --- | --- |
| 023 | // port to receive TCP connections | |
| 024 | int receivePort=9000; |

|  |  |  |
| --- | --- | --- |
| 025 | Socket socket=null; | |
| 026 | try |

|  |  |
| --- | --- |
| 027 | { |
| 028 | System.out.println("TCP server starting...: IP address " | |

|  |  |  |
| --- | --- | --- |
| 029 | + InetAddress.getLocalHost().toString() + " port " + receivePort ); | |
| 030 |  |

|  |  |  |
| --- | --- | --- |
| 031 | ServerSocket serverSocket = new ServerSocket(receivePort); | |
| 032 |  |

|  |  |
| --- | --- |
| 033 | // Wait for client to connect. |
| 034 | socket = serverSocket.accept(); | |

|  |  |  |
| --- | --- | --- |
| 035 | System.out.println("Client connection detected from IP address " + socket.getInetAddress() | |
| 036 | + " port " + socket.getPort()); |

|  |  |
| --- | --- |
| 037 |  |
| 038 | // open writer to the client and  send  a message | |

|  |  |
| --- | --- |
| 039 | PrintWriter pw = new PrintWriter(socket.getOutputStream()); |
| 040 | pw.println("Hello " + socket.getInetAddress() + " on port " + socket.getPort()); |

|  |  |  |
| --- | --- | --- |
| 041 | //System.out.println("enter text to send to client"); | |
| 042 | // loop sending messages to client |

|  |  |  |
| --- | --- | --- |
| 043 | while(true) | |
| 044 | try |

|  |  |
| --- | --- |
| 045 | { |
| 046 | pw.flush(); | |

|  |  |  |
| --- | --- | --- |
| 047 | String line = in.readLine(); | |
| 048 | pw.println(line); |

|  |  |
| --- | --- |
| 049 | } |
| 050 | catch (Exception se) {System.err.println("closing connection"); break;} | |

|  |  |
| --- | --- |
| 051 | pw.close(); |
| 052 | serverSocket.close(); | |

|  |  |
| --- | --- |
| 053 | } |
| 054 |  | |

|  |  |
| --- | --- |
| 055 |  |
| 056 | catch (Exception se) {System.err.println( se); } | |

|  |  |  |
| --- | --- | --- |
| 057 | } | |
| 058 | } |

|  |  |
| --- | --- |
| 059 |  |
| 060 |  |

|  |  |
| --- | --- |
| 061 | --------Client |
| 062 | // TCP client which receives a message from  server | |

|  |  |
| --- | --- |
| 063 |  |
| 064 | import java.io.\*; | |

|  |  |  |
| --- | --- | --- |
| 065 | import java.util.\*; | |
| 066 | import java.net.\*; |

|  |  |
| --- | --- |
| 067 |  |
| 068 |  |

|  |  |  |
| --- | --- | --- |
| 069 | class IPgenerator2 | |
| 070 | { |

|  |  |  |
| --- | --- | --- |
| 071 | String view\_host; | |
| 072 | String accept; |

|  |  |
| --- | --- |
| 073 | int choice; |
| 074 | String ip = "148.197.67."; | |

|  |  |
| --- | --- |
| 075 |  |
| 076 | String ipmethd() | |

|  |  |  |
| --- | --- | --- |
| 077 | { | |
| 078 |  |

|  |  |
| --- | --- |
| 079 |  |
| 080 | KeyboardInput in = new KeyboardInput(); | |

|  |  |
| --- | --- |
| 081 |  |
| 082 | for(int i = 1; i < 10; i++) { | |

|  |  |
| --- | --- |
| 083 | System.out.print(i); |
| 084 | System.out.print(". "); | |

|  |  |
| --- | --- |
| 085 | //System.out.print(); |
| 086 | System.out.println(ip + i); | |

|  |  |
| --- | --- |
| 087 | } |
| 088 | System.out.println(); | |

|  |  |
| --- | --- |
| 089 |  |
| 090 | //enter a different network id or hit enter to continue | |

|  |  |  |
| --- | --- | --- |
| 091 | //to allow user to enter a different netwrok portion | |
| 092 | //hitting enter implies network is same |

|  |  |
| --- | --- |
| 093 |  |
| 094 | //System.out.print("Enter your network part or press enter to proceed: "); | |

|  |  |  |
| --- | --- | --- |
| 095 | //String network = in.readString(); | |
| 096 |  |

|  |  |
| --- | --- |
| 097 | //test |
| 098 | //.out.println(network); | |

|  |  |
| --- | --- |
| 099 |  |
| 100 | //if enter is pressed - same network | |

|  |  |  |
| --- | --- | --- |
| 101 | //    if("".equals(network)) | |
| 102 | //{ |

|  |  |
| --- | --- |
| 103 |  |
| 104 | System.out.print("SELECT A MACHINE TO VIEW FROM LIST: "); | |

|  |  |  |
| --- | --- | --- |
| 105 | int choice = in.readInteger(); | |
| 106 |  |

|  |  |  |
| --- | --- | --- |
| 107 |  | |
| 108 |  |

|  |  |
| --- | --- |
| 109 | //  } |
| 110 | //  else | |

|  |  |
| --- | --- |
| 111 |  |
| 112 | //pass new network part to ip string variable | |

|  |  |  |
| --- | --- | --- |
| 113 | //  ip = network; | |
| 114 |  |

|  |  |
| --- | --- |
| 115 |  |
| 116 |  |

|  |  |
| --- | --- |
| 117 |  |
| 118 | //real switch | |

|  |  |  |
| --- | --- | --- |
| 119 | switch (choice) | |
| 120 | { |

|  |  |
| --- | --- |
| 121 |  |
| 122 | case 1: | |

|  |  |
| --- | --- |
| 123 | view\_host = "148.197.67.211"; |
| 124 | //System.out.println("You selected to view machine with IP: " + view\_host); | |

|  |  |  |
| --- | --- | --- |
| 125 | //return view\_host = "192.168.2.1"; | |
| 126 | break; |

|  |  |
| --- | --- |
| 127 |  |
| 128 | case 2: | |

|  |  |
| --- | --- |
| 129 | view\_host = "148.197.67.212"; |
| 130 | //System.out.println("You selected to view machine with IP: " +  view\_host); | |

|  |  |  |
| --- | --- | --- |
| 131 | //return view\_host = "192.168.2.2"; | |
| 132 | break; |

|  |  |
| --- | --- |
| 133 |  |
| 134 | case 3: | |

|  |  |
| --- | --- |
| 135 | view\_host = "148.197.67.213"; |
| 136 | //System.out.println("You selected to view machine with IP: " +  view\_host); | |

|  |  |  |
| --- | --- | --- |
| 137 | //return view\_host = "192.168.2.3"; | |
| 138 | break; |

|  |  |
| --- | --- |
| 139 |  |
| 140 | case 4: | |

|  |  |
| --- | --- |
| 141 | view\_host = "148.197.67.214"; |
| 142 | //System.out.println("You selected to view machine with IP: " +  view\_host); | |

|  |  |  |
| --- | --- | --- |
| 143 | //return view\_host = "192.168.2.4"; | |
| 144 | break; |

|  |  |
| --- | --- |
| 145 |  |
| 146 | case 5: | |

|  |  |
| --- | --- |
| 147 | view\_host = "148.197.67.215"; |
| 148 | //System.out.println("You selected to view machine with IP: " +  view\_host); | |

|  |  |  |
| --- | --- | --- |
| 149 | //return view\_host = "192.168.2.4"; | |
| 150 | break; |

|  |  |
| --- | --- |
| 151 |  |
| 152 | case 6: | |

|  |  |
| --- | --- |
| 153 | view\_host = "148.197.67.216"; |
| 154 | //System.out.println("You selected to view machine with IP: " +  view\_host); | |

|  |  |  |
| --- | --- | --- |
| 155 | //return view\_host = "192.168.2.4"; | |
| 156 | break; |

|  |  |  |
| --- | --- | --- |
| 157 |  | |
| 158 |  |

|  |  |
| --- | --- |
| 159 | default: |
| 160 | System.out.println("This machine doesnt exist, please choose a valid host"); | |

|  |  |
| --- | --- |
| 161 |  |
| 162 | //return view\_host; | |

|  |  |
| --- | --- |
| 163 | } |
| 164 |  | |

|  |  |  |
| --- | --- | --- |
| 165 | return view\_host; | |
| 166 |  |

|  |  |  |
| --- | --- | --- |
| 167 | } | |
| 168 | } |

|  |  |
| --- | --- |
| 169 |  |
| 170 |  |

|  |  |
| --- | --- |
| 171 |  |
| 172 |  |

|  |  |  |
| --- | --- | --- |
| 173 | //client program starts here | |
| 174 |  |

|  |  |  |
| --- | --- | --- |
| 175 | public class Client | |
| 176 | { |

|  |  |
| --- | --- |
| 177 |  |
| 178 | public static void main(String args[]) | |

|  |  |
| --- | --- |
| 179 | { |
| 180 | //initialisation | |

|  |  |
| --- | --- |
| 181 | String view\_host; |
| 182 | IPgenerator2 ip = new IPgenerator2(); | |

|  |  |
| --- | --- |
| 183 |  |
| 184 | //call ipgenerator | |

|  |  |  |
| --- | --- | --- |
| 185 | //ip.ipmethd(); | |
| 186 |  |

|  |  |
| --- | --- |
| 187 |  |
| 188 | //server IP address | |

|  |  |  |
| --- | --- | --- |
| 189 | //String remoteIPaddress="192.168.2.4"; | |
| 190 | // int remotePort=9000; |

|  |  |
| --- | --- |
| 191 |  |
| 192 |  |

|  |  |
| --- | --- |
| 193 |  |
| 194 | //array to hold list of client IPs say registered | |

|  |  |
| --- | --- |
| 195 | //array enables me select the client to connect to |
| 196 | // String remoteIPaddress[]={"192.168.2.4","192.168.2.5","192.168.2.6"}; | |

|  |  |  |
| --- | --- | --- |
| 197 | //call ip generator and assign it | |
| 198 |  |

|  |  |  |
| --- | --- | --- |
| 199 | String remoteIPaddress =ip.ipmethd(); | |
| 200 | int remotePort=9000; |

|  |  |
| --- | --- |
| 201 |  |
| 202 | //for(int index=0; index<3;index++) | |

|  |  |
| --- | --- |
| 203 |  |
| 204 | try | |

|  |  |
| --- | --- |
| 205 | { |
| 206 | // connect to server with remoteIPaddress on remotePort | |

|  |  |
| --- | --- |
| 207 | //Socket socket1 = new Socket( remoteIPaddress, remotePort ); |
| 208 | //here I have selected to connect to just the first client - index 0 |

|  |  |  |
| --- | --- | --- |
| 209 | Socket socket1 = new Socket( remoteIPaddress, remotePort ); | |
| 210 |  |

|  |  |
| --- | --- |
| 211 |  |
| 212 | //timeout after 3sec of inactivity | |

|  |  |  |
| --- | --- | --- |
| 213 | //socket1.setSoTimeout(3000); | |
| 214 |  |

|  |  |
| --- | --- |
| 215 | // open reader to receive messages from server |
| 216 | BufferedReader inFromServer = new BufferedReader(new InputStreamReader( socket1.getInputStream())); | |

|  |  |  |
| --- | --- | --- |
| 217 | System.out.println("Server contacted OK "); | |
| 218 |  |

|  |  |
| --- | --- |
| 219 |  |
| 220 | // loop reading messages from server | |

|  |  |  |
| --- | --- | --- |
| 221 | while(true) | |
| 222 | { |

|  |  |
| --- | --- |
| 223 |  |
| 224 | String line = inFromServer.readLine(); | |

|  |  |  |
| --- | --- | --- |
| 225 | System.out.println("From server " + line); | |
| 226 | } |

|  |  |  |
| --- | --- | --- |
| 227 |  | |
| 228 | } |

|  |  |
| --- | --- |
| 229 |  |
| 230 | catch(UnknownHostException e){ | |

|  |  |  |
| --- | --- | --- |
| 231 | System.err.println("Don't know about host ...."); | |
| 232 | } |

|  |  |
| --- | --- |
| 233 |  |
| 234 | //predefined message is returned if server cannot be contacted | |

|  |  |
| --- | --- |
| 235 | catch(ConnectException e){ |
| 236 | System.err.println("Unreachable node!, failure in connecting to server"); | |

|  |  |  |
| --- | --- | --- |
| 237 | } | |
| 238 |  |

|  |  |  |
| --- | --- | --- |
| 239 | catch (IOException e) {System.err.println("TCP client error " +  e); } | |
| 240 |  |

|  |  |  |
| --- | --- | --- |
| 241 | //if server suddenly shutsdown for instance | |
| 242 |  |

|  |  |  |
| --- | --- | --- |
| 243 | } | |
| 244 | } |

|  |  |
| --- | --- |
| 245 |  |

It mustnt be with the GUI. coding that works will be very helpful indeed.  
  
many thanks for responses in advance pls im stuck...[indent]

This post has been edited by **fresher**: 15 January 2007 - 07:13 AM