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/\*References:

\*https://codinginfinite.com/java-tcp-client-server-chat-application-sockets/

\*https://www.tutorialspoint.com/javaexamples/net\_multisoc.htm

\*https://www.javatpoint.com/socket-programming

\*https://edn.embarcadero.com/article/31995

\*https://youtu.be/dlacc6831zw

\*https://youtu.be/dlacc6831zw

\*/

import java.io.DataInputStream;

import java.io.DataOutputStream;

import java.net.ServerSocket;

import java.net.Socket;

import java.util.HashMap;

import java.util.Iterator;

import java.util.Set;

import java.util.StringTokenizer;

import javax.swing.DefaultListModel;

public class Server extends javax.swing.JFrame

{

ServerSocket ss; //Socket Declaration

HashMap clientColl = new HashMap(); //Initialize a HashMap

DefaultListModel dlm2 = new DefaultListModel();

public Server()

{

try

{

initComponents();

ss = new ServerSocket(2089);

this.sStatus.setText("Server Started.");

active\_list.setModel(dlm2);

new ClientAccept().start();

}

catch (Exception ex)

{

ex.printStackTrace();

}

}

class ClientAccept extends Thread

{

public void run()

{

while (true)

{

try

{

Socket s = ss.accept();

String i = new DataInputStream(s.getInputStream()).readUTF();

if (clientColl.containsKey(i))

{

DataOutputStream dout = new DataOutputStream(s.getOutputStream());

dout.writeUTF("Username not available. Please try another username.");

}

else

{

clientColl.put(i, s); //Adds a user

msgBox.append(i + " --> Joined\n");

dlm2.addElement(i);

DataOutputStream dout = new DataOutputStream(s.getOutputStream());

dout.writeUTF("");

new MsgRead(s, i).start();

new PrepareClientList().start();

}

}

catch (Exception ex)

{

ex.printStackTrace();

}

}

}

}

class MsgRead extends Thread

{

Socket s;

String ID;

MsgRead(Socket s, String ID)

{

this.s = s;

this.ID = ID;

}

public void run()

{

while (!clientColl.isEmpty())

{

try

{

String i = new DataInputStream(s.getInputStream()).readUTF();

if (i.equals("exit\_window")) //Upon clicking exit window button

{

clientColl.remove(ID);

msgBox.append(ID + " --> Left\n");

dlm2.removeElement(ID);

new PrepareClientList().start();

Set k = clientColl.keySet();

Iterator itr = k.iterator();

while (itr.hasNext())

{

String key = (String) itr.next();

if (!key.equalsIgnoreCase(ID))

{

try

{

new DataOutputStream(((Socket) clientColl.get(key)).getOutputStream()).writeUTF(ID + " --> Left Chat");

}

catch (Exception ex)

{

clientColl.remove(key);

msgBox.append(key + " --> Left");

dlm2.removeElement(key);

new PrepareClientList().start();

}

}

}

}

else if (i.contains("#4344554@@@@@67667@@"))

{

i = i.substring(20);

StringTokenizer st = new StringTokenizer(i, ":");

String id = st.nextToken();

i = st.nextToken();

try

{

new DataOutputStream(((Socket) clientColl.get(id)).getOutputStream()).writeUTF("< " + ID + " to " + id + " >" + i);

}

catch (Exception ex)

{

clientColl.remove(id);

msgBox.append(id + " --> Left");

dlm2.removeElement(id);

new PrepareClientList().start();

}

}

else

{

Set k = clientColl.keySet();

Iterator itr = k.iterator();

while (itr.hasNext())

{

String key = (String) itr.next();

if (!key.equalsIgnoreCase(ID))

{

try

{

new DataOutputStream(((Socket) clientColl.get(key)).getOutputStream()).writeUTF("< " + ID + " to All > " + i);

}

catch (Exception ex)

{

clientColl.remove(key);

msgBox.append(key + " --> Left");

dlm2.removeElement(key);

new PrepareClientList().start();

}

}

}

}

}

catch (Exception ex)

{

ex.printStackTrace();

}

}

}

}

class PrepareClientList extends Thread

{

public void run()

{

try

{

String ids = "";

Set k = clientColl.keySet();

Iterator itr = k.iterator();

while (itr.hasNext())

{

String key = (String) itr.next();

ids += key + ",";

}

if (ids.length() != 0)

{

ids = ids.substring(0, ids.length() - 1);

}

itr = k.iterator();

while (itr.hasNext())

{

String key = (String) itr.next();

try

{

new DataOutputStream(((Socket) clientColl.get(key)).getOutputStream()).writeUTF(":;.,/=" + ids);

}

catch (Exception ex)

{

clientColl.remove(key);

msgBox.append(key + " --> Left");

dlm2.removeElement(key);

}

}

}

catch (Exception ex)

{

ex.printStackTrace();

}

}

}

/\*\*

\* This method is called from within the constructor to initialize the form.

\* WARNING: Do NOT modify this code. The content of this method is always

\* regenerated by the Form Editor.

\*/

@SuppressWarnings("unchecked")

// <editor-fold defaultstate="collapsed" desc="Generated Code">

private void initComponents() {

jPanel1 = new javax.swing.JPanel();

jScrollPane1 = new javax.swing.JScrollPane();

msgBox = new javax.swing.JTextArea();

jLabel1 = new javax.swing.JLabel();

sStatus = new javax.swing.JLabel();

jLabel2 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

jScrollPane3 = new javax.swing.JScrollPane();

active\_list = new javax.swing.JList<>();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

setTitle("MyServer");

jPanel1.setBackground(new java.awt.Color(255, 255, 102));

msgBox.setColumns(20);

msgBox.setRows(5);

jScrollPane1.setViewportView(msgBox);

jLabel1.setFont(new java.awt.Font("Bookman Old Style", 1, 14)); // NOI18N

jLabel1.setText("Server Status:");

sStatus.setFont(new java.awt.Font("Bookman Old Style", 1, 14)); // NOI18N

sStatus.setText(".....................");

jLabel2.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N

jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);

jLabel2.setText("User Logs");

jLabel3.setFont(new java.awt.Font("Tahoma", 1, 12)); // NOI18N

jLabel3.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);

jLabel3.setText("Active Users");

jScrollPane3.setViewportView(active\_list);

javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);

jPanel1.setLayout(jPanel1Layout);

jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()

.addGap(25, 25, 25)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()

.addGap(10, 10, 10)

.addComponent(jLabel1)

.addGap(30, 30, 30)

.addComponent(sStatus, javax.swing.GroupLayout.PREFERRED\_SIZE, 190, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGroup(jPanel1Layout.createSequentialGroup()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jScrollPane1)

.addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGap(63, 63, 63)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jScrollPane3, javax.swing.GroupLayout.PREFERRED\_SIZE, 0, Short.MAX\_VALUE)

.addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT\_SIZE, 154, Short.MAX\_VALUE))))

.addContainerGap(25, Short.MAX\_VALUE))

);

jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(jPanel1Layout.createSequentialGroup()

.addGap(27, 27, 27)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 27, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(sStatus, javax.swing.GroupLayout.PREFERRED\_SIZE, 27, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(31, 31, 31)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel2)

.addComponent(jLabel3))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jScrollPane1, javax.swing.GroupLayout.DEFAULT\_SIZE, 283, Short.MAX\_VALUE)

.addComponent(jScrollPane3))

.addContainerGap(32, Short.MAX\_VALUE))

);

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());

getContentPane().setLayout(layout);

layout.setHorizontalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

);

pack();

}// </editor-fold>

/\*\*

\* @param args the command line arguments

\*/

public static void main(String args[]) {

/\* Set the Nimbus look and feel \*/

//<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">

/\* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.

\* For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html

\*/

try {

for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {

if ("Nimbus".equals(info.getName())) {

javax.swing.UIManager.setLookAndFeel(info.getClassName());

break;

}

}

} catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(Server.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(Server.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(Server.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(Server.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

}

//</editor-fold>

/\* Create and display the form \*/

java.awt.EventQueue.invokeLater(new Runnable() {

public void run() {

new Server().setVisible(true);

}

});

}

// Variables declaration - do not modify

private javax.swing.JList<String> active\_list;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JPanel jPanel1;

private javax.swing.JScrollPane jScrollPane1;

private javax.swing.JScrollPane jScrollPane3;

private javax.swing.JTextArea msgBox;

private javax.swing.JLabel sStatus;

// End of variables declaration

}