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Java program to create Instant Messenger application for communication between multiple clients

INSTANT MESSENGER

AIM

To write a java program for creating Instant Messenger application for communication between multiple clients.

ALGORITHM

Step 1: Start the process.

Step 2: Create the client module asclass Client by extending thread class.

Step 3: Create the Server module as class Server for accepting connection from clients.

Step 4: Create ClientThread class in Server module to make 10 clients to communuicate.

Step 5: Start the Server.

Step 6: After Server is ready, then run the clients to communicate with each other.

Step 6: Terminate the clients and Server respectively.

Step 7: Stop the process.

Source Code

Client.java

```
import java.io.*;
import java.net.*;
public class Client implements Runnable
{
static Socket socket=null;
static PrintStream output;
static BufferedReader input=null;
static BufferedReader userip=null;
static boolean flag=false;
public static void main(String[] args)
{
int port=1234;

 String host="localhost";

try
{
socket=new Socket(host,port);
userip=new BufferedReader(new InputStreamReader(System.in));
output=new PrintStream(socket.getOutputStream());
input=new BufferedReader(new InputStreamReader(socket.getInputStream()));
}
catch(Exception e)
{
System.err.println("Unknown host"+host);
}
if(socket!=null)
{
try
{
new Thread(new Client()).start();
while(!flag)
{
output.println(userip.readLine());
}
output.close();
input.close();
socket.close();
}
catch(Exception e1)
{
System.err.println("IOException"+e1);
}
}
}
public void run()
{
String msg;
try
{
while((msg=input.readLine())!=null)
System.out.println(msg);
flag=true;
}
catch(IOException e)
{
System.err.println("IOException" + e);
}
}
}
```

Server.java

```
import java.io.*;
import java.net.*;
public class Server
{
static ServerSocket server=null;
static Socket socket=null;
static ClientThread th[]=new ClientThread[10];
public static void main(String args[])
{
int port=1234;
System.out.println("Server started...");
System.out.println("[Press Ctrl C to terminate ]");
try
{
server=new ServerSocket (port);
}
catch(IOException e)
{
System.out.println("Exception for Input/Output");
}
while(true)
{
try
{
socket=server.accept();
for(int i=0;i<=9;i++)
{
if(th[i]==null)
{
(th[i]=new ClientThread(socket,th)).start();
break;
}
}
}
catch(IOException e)
{
System.out.println("Exception for Input/Output");
}
}
}
}
class ClientThread extends Thread
{
BufferedReader input=null;
PrintStream output=null;
```

```
Socket socket=null;
ClientThread th[];
public ClientThread(Socket socket,ClientThread[] th)
{
this.socket=socket;
this.th=th;
}
public void run()
{
String msg;
String username;
try
{
input = new BufferedReader(new InputStreamReader(socket.getInputStream()));
output = new PrintStream(socket.getOutputStream());
output.println("What is your Name?Enter it-");
username = input.readLine();
output.println(username + ":Welcome to chat room.");
output.println("To leave chat room type $$");
for (int i = 0; i <= 9; i++)
if (th[i] != null && th[i] != this)
th[i].output.println("------------A new user arrived in chat Room:" + username);
while (true)
{
msg = input.readLine();
if (msg.startsWith("$$"))
break;
for (int i = 0; i <= 9; i++)
if (th[i] != null)
th[i].output.println("<" + username + ">" + msg);
}
for (int k = 0; k <= 9; k++)
if (th[k] != null && th[k] != this)
th[k].output.println("------A user Leaving chat Room:" + username + "--------");
output.println("Press Ctrl C to return to prompt---");
for (int j = 0; j <= 9; j++)
if (th[j] == this)
th[j] = null;
input.close();
output.close();
socket.close();
}
catch (IOException e)
{
System.out.println("Exception for Input/Output");
}
}
}
```

Mohanraj

3 comments:

SchumyJanuary 4, 2013 at 4:02 PM

Hi. I have tested out the code and it only works with local IPs. It seems that it doesn't recognize/doesn't want to connect with normal IPs. How can I make it work with normal IPs(not locally)?

Reply

AnonymousNovember 19, 2013 at 2:30 AM

Initialise host with the IP address (in this code change the "localhost" to the IP address) to connect it to normal IP in Client.java

Reply

AnonymousDecember 27, 2013 at 12:00 PM

Nice. Helped me a lot.

Reply

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