

BCSE308P COMPUTER NETWORKS

ASSIGNMENT

NAME: RISHAAN JACOB KURIAKOSE

REG. NO.: 21BPS1394

CONCURRENT CLIENT-SERVER CHAT PROGRAM

Client Program

```
import java.net.*;
import java.io.*;
public class ConcurrentClient
{
    private Socket socket = null;
    private DataInputStream input = null;
    private DataInputStream in = null;
    private DataOutputStream out = null;
    public ConcurrentClient(String address, int port)
    {
        try
        {
            socket = new Socket(address, port);
            System.out.println("Connected");
            input = new DataInputStream(System.in);
            in = new DataInputStream(new
BufferedInputStream(socket.getInputStream()));
            out = new DataOutputStream(socket.getOutputStream());
        }
        catch(UnknownHostException u)
        {
            System.out.println(u);
        }
        catch(IOException i)
        {
            System.out.println(i);
        }
        String line = "";
        while (! line.equals("Over"))
        {
            try
            {
                System.out.print("To server: ");
                line = input.readLine();
                out.writeUTF(line);
                System.out.print("From server: ");
                line = in.readUTF();
                System.out.println(line);
            }
            catch(IOException i)
            {

```

```
        System.out.println(i);
    }
}
try
{
    input.close();
    in.close();
    out.close();
    socket.close();
}
catch(IOException i)
{
    System.out.println(i);
}
}
public static void main(String args[])
{
    ConcurrentClient client = new ConcurrentClient("127.0.0.1", 5000);
}
}
```

Server Program

```
import java.net.*;
import java.io.*;
class ThreadDemo implements Runnable
{
    private DataInputStream in = null;
    private DataOutputStream out = null;
    private DataInputStream input = null;
    private Socket s;
    ThreadDemo(Socket s)
    {
        this.s = s;
    }
    public void run()
    {
        String line = "";
        try
        {
            in = new DataInputStream(new
BufferedInputStream(s.getInputStream()));
            out = new DataOutputStream(s.getOutputStream());
            input = new DataInputStream(System.in);
            while (!line.equals("Over"))
            {
                System.out.print("From client: ");
                line = in.readUTF();
                if (line.equals("Over"))
                    break;
                System.out.println(line);
                System.out.print("To client: ");
                line = input.readLine();
                out.writeUTF(line);
            }
            in.close();
            out.close();
            System.out.print("Closing connection...");
            s.close();
        }
        catch(IOException i)
        {
            System.out.println(i);
        }
    }
}
public class ConcurrentServer
{
    private Socket socket = null;
    private ServerSocket server = null;
    public ConcurrentServer(int port)
    {

```

```
        try
        {
            server = new ServerSocket(port);
            System.out.println("Server started\nWaiting for a client
...");
            while (true)
            {
                socket = server.accept();
                System.out.println("Client accepted");
                ThreadDemo td = new ThreadDemo(socket);
                Thread t = new Thread(td);
                t.start();
            }
        }
        catch(IOException i)
        {
            System.out.println(i);
        }
    }
    public static void main(String args[])
    {
        ConcurrentServer server = new ConcurrentServer(5000);
    }
}
```

Output

```
Windows PowerShell
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Server> javac ConcurrentServer.java
Note: ConcurrentServer.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Server> java ConcurrentServer
Server started
Waiting for a client ...
Client accepted
From client: Client accepted
From client: Hey Server
To client: Hello Client 1
From client: Hey Server
To client: Hello Client 2
From client: Can you do something for us?
To client: What's that?
From client: Help run this program
To client: Okay
From client: Closing connection...Thanks Server
To client: No problem Client 2
From client: Goodbye
To client: Over
Closing connection...|
```

```
Windows PowerShell
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> javac ConcurrentClient.java
Note: ConcurrentClient.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> java ConcurrentClient
Connected
To server: Hey Server
From server: Hello Client 1
To server: Can you do something for us?
From server: What's that?
To server: Over
From server: java.io.EOFException
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client>
```

```
Windows PowerShell
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> java ConcurrentClient
Connected
To server: Hey Server
From server: Hello Client 2
To server: Help run this program
From server: Okay
To server: Thanks Server
From server: No problem Client 2
To server: Goodbye
From server: Over
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> |
```