

BCSE308P COMPUTER NETWORKS

ASSIGNMENT

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CONCURRENT CLIENT-SERVER CHAT PROGRAM

Client Program

```
import java.net.*;
import java.io.*;
public class IterativeClient
{
    private Socket socket = null;
    private DataInputStream input = null;
    private DataInputStream in = null;
    private DataOutputStream out = null;
    public IterativeClient(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[])
{
    IterativeClient client = new IterativeClient("127.0.0.1",
5000);
}
}
```

Server Program

```
import java.net.*;
import java.io.*;
public class IterativeServer
{
    private Socket socket = null;
    private ServerSocket server = null;
    private DataInputStream input = null;
    private DataInputStream in = null;
    private DataOutputStream out = null;
    public IterativeServer(int port)
    {
        int count = 1, flag = 1;
        try
        {
            server = new ServerSocket(port);
            System.out.println("Server started\nWaiting for a client
...");
            while (true)
            {
                socket = server.accept();
                System.out.println("Client accepted");
                String line = "";
                in = new DataInputStream(new
BufferedInputStream(socket.getInputStream()));
                out = new
DataOutputStream(socket.getOutputStream());
                input = new DataInputStream(System.in);
                while (!line.equals("Over"))
                {
                    System.out.printf("From client %d: ", count);
                    line = in.readUTF();
                    if (line.equals("Over"))
                    {
                        count++;
                        flag = 0;
                        break;
                    }
                }
                System.out.println(line);
                System.out.printf("To client %d: ", count);
                line = input.readLine();
                out.writeUTF(line);
            }
            if (flag == 1)
                count++;
            in.close();
            out.close();
            System.out.print("Closing connection...");
            socket.close();
        }
    }
}
```

```
    }  
    catch(IOException i)  
    {  
        System.out.println(i);  
    }  
}  
public static void main(String args[])  
{  
    IterativeServer server = new IterativeServer(5000);  
}  
}
```

Output

```
Windows PowerShell X + v
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Server> javac IterativeServer.java
Note: IterativeServer.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 IterativeServer
Server started
Waiting for a client ...
Client accepted
From client 1: Hey Server
To client 1: Hello Client 1
From client 1: Can you do something?
To client 1: What's that Client 1?
From client 1: Help run this program
To client 1: Okay
From client 1: Closing connection...Client accepted
From client 2: Thanks Server
To client 2: No problem Client 2
From client 2: Goodbye
To client 2: Over
Closing connection...

Windows PowerShell X + v
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> javac IterativeClient.java
Note: IterativeClient.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 IterativeClient
Connected
To server: Hey Server
From server: Hello Client 1
To server: Can you do something?
From server: What's that Client 1?
To server: Help run this program
From server: Okay
To server: Over
From server: java.io.EOFException
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client>

Windows PowerShell X + v
PS C:\Users\RISHAAN\Desktop\VIT\W 2022-23\G - Computer Networks\Client> java IterativeClient
Connected
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>
```