**Practical 1**

**Aim:**

Write a java program using java.net library. Echo Client-Server. (UDP Protocol)

**Description:**

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Fig. 1. Concurrent Client Server scenario

**Program code:**

**EchoClient.java**

//TCP Client

**import** java**.**io**.\*;**

**import** java**.**net**.\*;**

public class EchoClient **{**

public static void main**(**String**[]** args**)** **throws** IOException **{**

String serverHostname **=** **new** String **(**"127.0.0.1"**);**

**if** **(**args**.**length **>** 0**)**

serverHostname **=** args**[**0**];**

System**.**out**.**println **(**"Attemping to connect to host " **+**

serverHostname **+** " on port 10007."**);**

Socket echoSocket **=** **null;**

PrintWriter out **=** **null;**

BufferedReader in **=** **null;**

**try** **{**

// echoSocket = new Socket("taranis", 7);

echoSocket **=** **new** Socket**(**serverHostname**,** 10007**);**

out **=** **new** PrintWriter**(**echoSocket**.**getOutputStream**(),** **true);**

in **=** **new** BufferedReader**(new** InputStreamReader**(**

echoSocket**.**getInputStream**()));**

**}** **catch** **(**UnknownHostException e**)** **{**

System**.**err**.**println**(**"Don't know about host: " **+** serverHostname**);**

System**.**exit**(**1**);**

**}** **catch** **(**IOException e**)** **{**

System**.**err**.**println**(**"Couldn't get I/O for "

**+** "the connection to: " **+** serverHostname**);**

e**.**printStackTrace**();**

System**.**exit**(**1**);**

**}**

BufferedReader stdIn **=** **new** BufferedReader**(**

**new** InputStreamReader**(**System**.**in**));**

String userInput**;**

System**.**out**.**print **(**"input: "**);**

**while** **((**userInput **=** stdIn**.**readLine**())** **!=** **null)** **{**

**if** **(**userInput**.**equals**(**"Bye."**))**

**break;**

out**.**println**(**userInput**);**

System**.**out**.**println**(**"echo: " **+** in**.**readLine**());**

System**.**out**.**print **(**"input: "**);**

**}**

out**.**close**();**

in**.**close**();**

stdIn**.**close**();**

echoSocket**.**close**();**

**}**

**}**

**EchoServer.java**

//TCP Server

**import** java**.**net**.\*;**

**import** java**.**io**.\*;**

public class EchoServer **{**

public static void main**(**String**[]** args**)** **throws** IOException **{**

ServerSocket serverSocket **=** **null;**

**try** **{**

serverSocket **=** **new** ServerSocket**(**10007**);**

**}** **catch** **(**IOException e**)**

**{**

System**.**err**.**println**(**"Could not listen on port: 10007."**);**

System**.**exit**(**1**);**

**}**

Socket clientSocket **=** **null;**

System**.**out**.**println**(**"Enroll: 130050131063"**);**

System**.**out**.**println **(**"Waiting for connection....."**);**

**try** **{**

clientSocket **=** serverSocket**.**accept**();**

**}** **catch** **(**IOException e**)**

**{**

System**.**err**.**println**(**"Accept failed."**);**

System**.**exit**(**1**);**

**}**

System**.**out**.**println **(**"Connection successful"**);**

System**.**out**.**println **(**"Waiting for input....."**);**

PrintWriter out **=** **new** PrintWriter**(**clientSocket**.**getOutputStream**(),** **true);**

BufferedReader in **=** **new** BufferedReader**(new** InputStreamReader**(**clientSocket**.**getInputStream**()));**

String inputLine**;**

**while** **((**inputLine **=** in**.**readLine**())** **!=** **null)**

**{**

System**.**out**.**println **(**"Server: " **+** inputLine**);**

out**.**println**(**inputLine**);**

//if (inputLine.equals("Bye."))

// break;

**}**

out**.**close**();**

in**.**close**();**

clientSocket**.**close**();**

serverSocket**.**close**();**

**}** **}**

**Input Output:**

