

21BCE1955  
VABHAV BANKA

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Programme	BTECH CSE	Slot	L1+L2
Course		Semester	IV

## EXP-2

### AIM:

To write a socket for implementing echo.

### COVERED

1. CLIENT-SERVER INTERACTION (ONE WAY)
2. CLIENT-SERVER INTERACTION (TWO WAY)

## 2a)

CLIENT :

```
import java.io.*;
import java.net.*;
public class ecclient {
    public static void main(String args[]) {
        Socket c=null;
        String line;
        DataInputStream is,is1;
        PrintStream os;
        try {
            c=new Socket("localhost",4125);
        }
        catch(IOException e) {
            System.out.println(e);
        }
        try {
            os=new PrintStream(c.getOutputStream());
            is=new DataInputStream(System.in);
            is1=new DataInputStream(c.getInputStream());
            do {
                System.out.println("client");
                line=is.readLine();
                os.println(line);
                if(!line.equals("exit"))
                    System.out.println("server:"+is1.readLine());
            }while(!line.equals("exit"));
        }
        catch(IOException e) {
            System.out.println("socket closed");
        }
    }
}
```

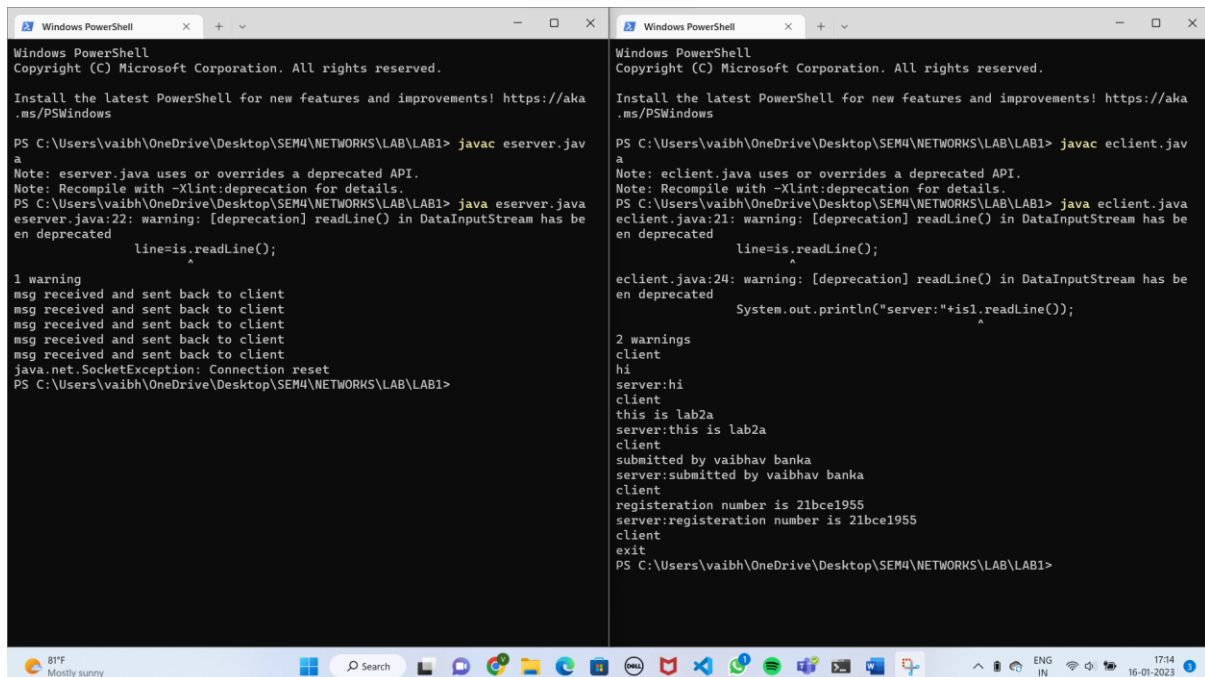
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```
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> javac eclient.java
Note: eclient.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> java eclient.java
eclient.java:21: warning: [deprecation] readLine() in DataInputStream has been deprecated
    line=is.readLine();
                ^
eclient.java:24: warning: [deprecation] readLine() in DataInputStream has been deprecated
    System.out.println("server:"+is.readLine());
                        ^
2 warnings
client
hi
server:hi
client
this is lab2a
server:this is lab2a
client
submitted by vaibhav banka
server:submitted by vaibhav banka
client
registration number is 21bce1955
server:registration number is 21bce1955
client
exit
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1>
```

SERVER:

```
import java.io.*;
import java.net.*;
import java.lang.*;
public class eserver{
    public static void main(String args[])throws IOException {
        ServerSocket s=null;
        String line;
        DataInputStream is;
        PrintStream ps;
        Socket c=null;
        try {
            s=new ServerSocket(4125);
        }
        catch(IOException e) {
            System.out.println(e);
        }
        try {
            c=s.accept();
            is=new DataInputStream(c.getInputStream());
            ps=new PrintStream(c.getOutputStream());
            while(true) {
                line=is.readLine();
                System.out.println("msg received and sent back to client");
                ps.println(line);
            }
        }
        catch(IOException e) {
            System.out.println(e);
        }
    }
}
```

```
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> javac eserver.java
a
Note: eserver.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> java eserver.java
eserver.java:22: warning: [deprecation] readLine() in DataInputStream has be
en deprecated
        line=is.readLine();
                ^
1 warning
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
java.net.SocketException: Connection reset
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1>
```



The screenshot shows two side-by-side Windows PowerShell windows. The left window displays the compilation and execution of a Java server program named 'eserver.java'. It shows a warning about a deprecated API, followed by five messages received and sent back to the client, and then a 'Connection reset' error. The right window shows the compilation and execution of a Java client program named 'eclient.java'. It also shows a warning about a deprecated API. The client sends the message 'hi' to the server, which responds with 'server:hi'. The client then sends 'this is lab2a', and the server responds with 'server:this is lab2a'. The client sends 'submitted by vaibhav banka', and the server responds with 'server:submitted by vaibhav banka'. The client sends 'registration number is 21bce1955', and the server responds with 'server:registration number is 21bce1955'. Finally, the client sends 'exit' and the server responds with 'exit'. The taskbar at the bottom shows the system clock as 17:34 on 16-01-2023.

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> javac eserver.java
a
Note: eserver.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> java eserver.java
eserver.java:22: warning: [deprecation] readLine() in DataInputStream has be
en deprecated
        line=is.readLine();
                ^
1 warning
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
msg received and sent back to client
java.net.SocketException: Connection reset
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1>

Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> javac eclient.java
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Note: eclient.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1> java eclient.java
eclient.java:21: warning: [deprecation] readLine() in DataInputStream has be
en deprecated
        line=is.readLine();
                ^
eclient.java:24: warning: [deprecation] readLine() in DataInputStream has be
en deprecated
        System.out.println("server:"+isl.readLine());
                        ^
2 warnings
client
hi
server:hi
client
this is lab2a
server:this is lab2a
client
submitted by vaibhav banka
server:submitted by vaibhav banka
client
registration number is 21bce1955
server:registration number is 21bce1955
client
exit
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB1>
```

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## 2b)

Client:

```
import java.io.*;
import java.net.*;
class UDPClient {
    public static void main(String args[]) throws Exception{
        BufferedReader inFromUser = new BufferedReader(new
InputStreamReader(System.in));
        DatagramSocket clientSocket = new DatagramSocket();
        InetAddress IPAddress = InetAddress.getLocalHost();
        while(true){
            byte[] sendData = new byte[1024];
            byte[] receiveData = new byte[1024];
            String sentence = inFromUser.readLine();
            sendData = sentence.getBytes();
            DatagramPacket sendPacket = new DatagramPacket(sendData,
sendData.length, IPAddress, 9876);
            clientSocket.send(sendPacket);
            DatagramPacket receivePacket = new DatagramPacket(receiveData,
receiveData.length);
            clientSocket.receive(receivePacket);
            String modifiedSentence = new String(receivePacket.getData());
            System.out.println("FROM SERVER:" + modifiedSentence);
        }
    }
}
```

```
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB2> javac UDPClient.j
ava
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB2> java UDPClient
hello
FROM SERVER:hi, who are you?
My name is Vaibhav Banka
FROM SERVER:Oo I am the server
I am doing my lab assignment for cn lab
FROM SERVER:oo that's cool
yes
FROM SERVER:whats your registration number?
its 21BCE1955
FROM SERVER:OH nice
bye, thank you
FROM SERVER:bye, welcome
```

Server:

```
import java.io.*;
import java.net.*;
class UDPServer {
    public static void main(String args[]) throws Exception {
        BufferedReader inFromUser = new BufferedReader(new
InputStreamReader(System.in));
        DatagramSocket serverSocket = new DatagramSocket(9876);
        int count = 0;
        while(true) {
            byte[] receiveData = new byte[1024];
            byte[] sendData = new byte[1024];
            DatagramPacket receivePacket = new DatagramPacket(receiveData,
receiveData.length);
            serverSocket.receive(receivePacket);
            String sentence = new String(receivePacket.getData());
            if(count%2 == 0){
                System.out.println("FROM CLIENT1: " + sentence);
                count++;
            }
            else{
                System.out.println("FROM CLIENT2: " + sentence);
                count++;
            }
            InetAddress IPAddress = receivePacket.getAddress();
            int port = receivePacket.getPort();
            String sentence1 = inFromUser.readLine();
            sendData = sentence1.getBytes();
            DatagramPacket sendPacket = new DatagramPacket(sendData,
sendData.length, IPAddress, port);
            serverSocket.send(sendPacket);
        }
    }
}
```

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```
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB2> javac UDPServer.j
ava
PS C:\Users\vaibh\OneDrive\Desktop\SEM4\NETWORKS\LAB\LAB2> java UDPServer
FROM CLIENT1: hello
hi, who are you?
FROM CLIENT2: My name is Vaibhav Banka
Oo I am the server
FROM CLIENT1: I am doing my lab assignment for cn lab
oo that's cool
FROM CLIENT2: yes
whats your registration number?
FROM CLIENT1: its 21BCE1955
OH nice
FROM CLIENT2: bye, thank you
bye, welcome
```