

EAST WEST UNIVERSITY



Coures : CSE110 , Object Oriented Programming

Assignment : 10

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Submitted To

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Problem – 1

Code :

```
import java.io.*;
import java.net.*;

public class Server {
    public static void main(String[] args) {
        try {
            ServerSocket serverSocket = new ServerSocket(12345);
            System.out.println("Server is waiting for Client 1...");

            Socket client1Socket = serverSocket.accept();
            System.out.println("Client 1 connected.");

            BufferedReader client1Reader = new BufferedReader(new
InputStreamReader(client1Socket.getInputStream()));
            char receivedChar = client1Reader.readLine().charAt(0);

            char decrementedChar = (char) (receivedChar - 1);

            client1Socket.close();
            System.out.println("Client 1 disconnected.");

            System.out.println("Server is waiting for Client 2...");
            Socket client2Socket = serverSocket.accept();
            System.out.println("Client 2 connected.");

            PrintWriter client2Writer = new PrintWriter(client2Socket.getOutputStream(), true);
            client2Writer.println(decrementedChar);

            client2Socket.close();
            System.out.println("Client 2 disconnected.");

            serverSocket.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

import java.io.*;
import java.net.*;

public class Client1 {
```

```

public static void main(String[] args) {
    try {
        Socket client1Socket = new Socket("localhost", 12345);

        PrintWriter writer = new PrintWriter(client1Socket.getOutputStream(), true);
        writer.println("B");

        client1Socket.close();
    } catch (IOException e) {
        e.printStackTrace();
    }
}

```

```

import java.io.*;
import java.net.*;

public class Client2 {
    public static void main(String[] args) {
        try {
            Socket client2Socket = new Socket("localhost", 12345);

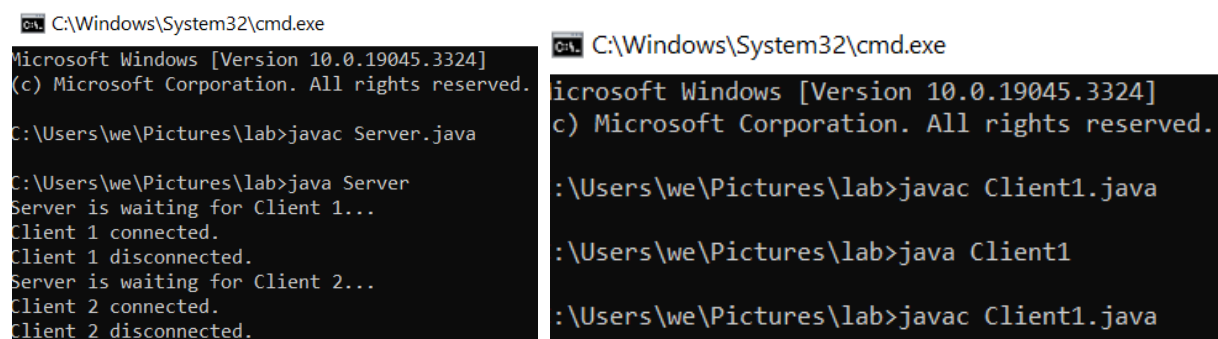
            BufferedReader reader = new BufferedReader(new
InputStreamReader(client2Socket.getInputStream()));
            String result = reader.readLine();

            System.out.println("Client 2 received: " + result);

            client2Socket.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

```

OutPut :



```

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

C:\Users\we\Pictures\lab>javac Server.java

C:\Users\we\Pictures\lab>java Server
Server is waiting for Client 1...
Client 1 connected.
Client 1 disconnected.
Server is waiting for Client 2...
Client 2 connected.
Client 2 disconnected.

```

```

C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

:\Users\we\Pictures\lab>javac Client1.java

:\Users\we\Pictures\lab>java Client1

:\Users\we\Pictures\lab>javac Client1.java

```

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

C:\Users\we\Pictures\lab>javac Client2.java

C:\Users\we\Pictures\lab>java Client2
java.net.ConnectException: Connection refused: connect
    at java.base/sun.nio.ch.Net.connect0(Native Method)
    at java.base/sun.nio.ch.Net.connect(Net.java:580)
    at java.base/sun.nio.ch.Net.connect(Net.java:569)
    at java.base/sun.nio.ch.NioSocketImpl.connect(NioSocketImpl.java:576)
    at java.base/java.net.SocksSocketImpl.connect(SocksSocketImpl.java:327)
    at java.base/java.net.Socket.connect(Socket.java:666)
    at java.base/java.net.Socket.connect(Socket.java:600)
    at java.base/java.net.Socket.<init>(Socket.java:500)
    at java.base/java.net.Socket.<init>(Socket.java:289)
    at Client2.main(Client2.java:7)
```

Problem – 2

Code :

```
import java.io.*;
import java.net.*;

public class Server {
    public static void main(String[] args) {
        try {
            ServerSocket serverSocket = new ServerSocket(12345);
            System.out.println("Server is waiting for Client 1...");

            Socket client1Socket = serverSocket.accept();
            System.out.println("Client 1 connected.");

            BufferedReader client1Reader = new BufferedReader(new
InputStreamReader(client1Socket.getInputStream()));
            int randomNumber = Integer.parseInt(client1Reader.readLine());

            String result = (randomNumber % 2 == 0) ? "even" : "odd";

            client1Socket.close();
            System.out.println("Client 1 disconnected.");

            System.out.println("Server is waiting for Client 2...");
            Socket client2Socket = serverSocket.accept();
            System.out.println("Client 2 connected.");

            PrintWriter client2Writer = new PrintWriter(client2Socket.getOutputStream(), true);
            client2Writer.println(result);

            client2Socket.close();
```

```

        System.out.println("Client 2 disconnected.");

        serverSocket.close();
    } catch (IOException e) {
        e.printStackTrace();
    }
}
}

```

```

import java.io.*;
import java.net.*;
import java.util.Random;

public class Client1 {
    public static void main(String[] args) {
        try {
            Socket client1Socket = new Socket("localhost", 12345);

            int randomNumber = generateRandomNumber();

            PrintWriter writer = new PrintWriter(client1Socket.getOutputStream(), true);
            writer.println(randomNumber);

            client1Socket.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    private static int generateRandomNumber() {
        Random rand = new Random();
        return rand.nextInt(100); // Generates a random number between 0 and 99
    }
}

```

```

import java.io.*;
import java.net.*;

public class Client2 {
    public static void main(String[] args) {
        try {
            Socket client2Socket = new Socket("localhost", 12345);

            BufferedReader reader = new BufferedReader(new
InputStreamReader(client2Socket.getInputStream()));
            String result = reader.readLine();

            System.out.println("Client 2 received: The next number is " + result);

```

```
        client2Socket.close();
    } catch (IOException e) {
        e.printStackTrace();
    }
}
```

OutPut :

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

C:\Users\we\Pictures\lab>javac Server.java

C:\Users\we\Pictures\lab>java Server
Server is waiting for Client 1...
Client 1 connected.
Client 1 disconnected.
Server is waiting for Client 2...
Client 2 connected.
Client 2 disconnected.

C:\Users\we\Pictures\lab>
```

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

C:\Users\we\Pictures\lab>javac Client1.java

C:\Users\we\Pictures\lab>java Client1

C:\Users\we\Pictures\lab>
```

```
C:\Users\we\Pictures\lab>javac Client2.java

C:\Users\we\Pictures\lab>java Client2
Client 2 received: The next number is odd

C:\Users\we\Pictures\lab>
```