JAVA Assignment 2: MODULE 2

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1.Write a simple of Java socket programming where client sends a text and server receives and prints it.

Server.java:-

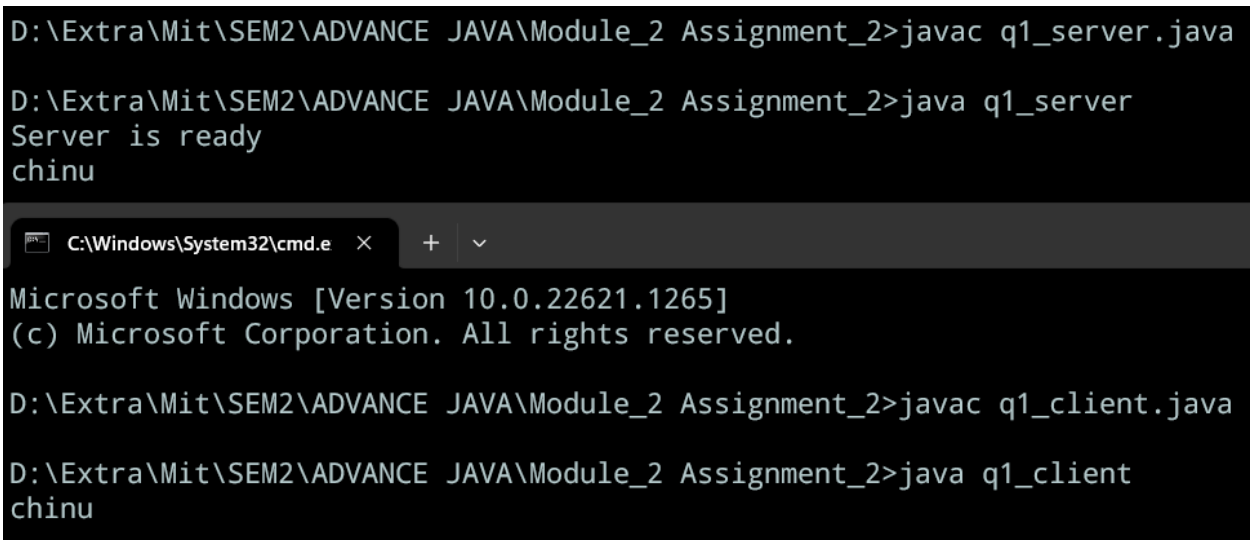
```
import java.io.*;
import java.net.*;

public class q1_server {
    public static void main(String[] args) {
        try {
            ServerSocket listener = new ServerSocket(1880);
            System.out.println("Server is ready");
            Socket serverSocket = listener.accept();
            InputStream input = serverSocket.getInputStream();
            DataInputStream dis = new DataInputStream(input);
            System.out.println(dis.readUTF());
            listener.close();

        } catch (IOException ie) {
            ie.printStackTrace();
        }
    }
}
```

Client.java:-

```
import java.io.*;
import java.net.*;
import java.util.InputMismatchException;
import java.util.Scanner;

public class q1_client {
    public static void main(String[] args) {
        try {
            Socket clientSocket = new Socket("localhost", 1880);
            OutputStream os = clientSocket.getOutputStream();
            DataOutputStream dos = new DataOutputStream(os);

            try (Scanner sc = new Scanner(System.in)) {
                String msg = sc.nextLine();

                dos.writeUTF(msg);
```

```
            } catch (InputMismatchException ie) {
                ie.printStackTrace();
            }
            clientSocket.close();

        } catch (UnknownHostException ue) {
            ue.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

OUTPUT:-



2.Write a program to for client Server chat application

Server.java:-

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

public class q2_server {
    public static void main(String[] args) {
        try {
            ServerSocket serverSocket = new ServerSocket(8000);
            System.out.println("Chat server started on port 8000");

            Socket clientSocket = serverSocket.accept();
            System.out.println("Client connected: " +
clientSocket.getInetAddress().getHostAddress());

            try (BufferedReader in = new BufferedReader(new
InputStreamReader(clientSocket.getInputStream()));
                    PrintWriter out = new
PrintWriter(clientSocket.getOutputStream(), true);
                    BufferedReader stdIn = new BufferedReader(new
InputStreamReader(System.in))) {

                String inputLine;
                String outputLine;

                // Start the conversation with the client
                out.println("Welcome to the chat server!");
                while ((inputLine = in.readLine()) != null) {
                    System.out.println("Client says: " + inputLine);
                    if (inputLine.equals("exit")) {
                        out.println("Goodbye!");
                        break;
                    } else {
                        System.out.print("Server says: ");
                        outputLine = stdIn.readLine();
                        out.println(outputLine);
                    }
                }
            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

Client.java:-

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

```
public class q2_client {
    public static void main(String[] args) {
        try {
            Socket socket = new Socket("localhost", 8000);
            System.out.println("Connected to server");

            try (BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));
                    PrintWriter out = new
PrintWriter(socket.getOutputStream(), true);
                    BufferedReader stdIn = new BufferedReader(new
InputStreamReader(System.in))) {

                String inputLine;
                while ((inputLine = in.readLine()) != null) {
                    System.out.println("Server says: " + inputLine);
                    if (inputLine.equals("Goodbye!")) {
                        break;
                    }
                    System.out.print("Client says: ");
                    String outputLine = stdIn.readLine();
                    out.println(outputLine);
                }
            } catch (UnknownHostException ue) {
                ue.printStackTrace();
            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

OUTPUT:-

```
D:\Extra\Mit\SEM2\ADVANCE JAVA\Module_2 Assignment_2>java q2_server
Chat server started on port 8000
Client connected: 127.0.0.1
Client says: hello
Server says: hi
```

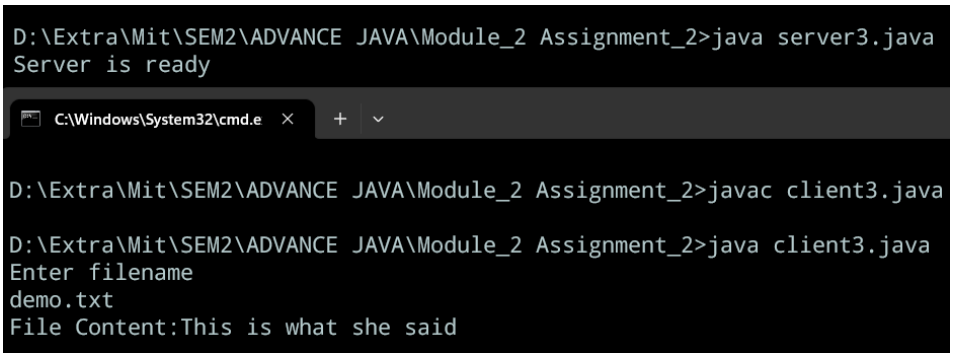
```
D:\Extra\Mit\SEM2\ADVANCE JAVA\Module_2 Assignment_2>java q2_client
Connected to server
Server says: Welcome to the chat server!
Client says: hello
Server says: hi
Client says:
```

3. Write a Server-side socket program to accept file name
from client. Server will reverse the contents and send as a response.

Server.java:-

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

public class q3_server {
    public static void main(String[] args) {
        try {
            ServerSocket listener = new ServerSocket(1800);
            System.out.println("Server is ready");
            Socket serverSocket = listener.accept();
            InputStream input = serverSocket.getInputStream();
            DataInputStream dis = new DataInputStream(input);
            OutputStream os = serverSocket.getOutputStream();
            DataOutputStream dos = new DataOutputStream(os);
            try {
                String filename = dis.readUTF();
                FileInputStream fi = new FileInputStream(filename);
                BufferedReader br = new BufferedReader(new
FileReader(filename));
                String st;

                while ((st = br.readLine()) != null) {
                    dos.writeUTF("File Content:" + st);
                }

                listener.close();
            } catch (FileNotFoundException fe) {
                fe.printStackTrace();
            }
        } catch (IOException ie) {
            ie.printStackTrace();
        }
    }
}
```

OUTPUT:-



4. Write client-side
socket program to accept filename from user and send to server. Display the response received from server.

Client.java:-

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

public class q4_client {
    public static void main(String abc[]) {
        try {
            Socket clientSocket = new Socket("localhost", 1990);
            OutputStream os = clientSocket.getOutputStream();
            DataOutputStream dos = new DataOutputStream(os);
            InputStream is = clientSocket.getInputStream();
            DataInputStream dis = new DataInputStream(is);

            // for (int i = 0; i < 1; i++) {
            Scanner scan = new Scanner(System.in);
            System.out.println("Enter filename");
            String msg = scan.nextLine();
            dos.writeUTF(msg);
            System.out.println(dis.readUTF());
        } catch (UnknownHostException ue) {
            ue.printStackTrace();
        } catch (IOException ie) {
            ie.printStackTrace();
        }

    }
}
```

OUTPUT:-

```
D:\Extra\Mit\SEM2\ADVANCE JAVA\Module_2 Assignment_2>java q4_server
Server is ready

D:\Extra\Mit\SEM2\ADVANCE JAVA\Module_2 Assignment_2>
```

```
D:\Extra\Mit\SEM2\ADVANCE JAVA\Module_2 Assignment_2>java q4_client.java
Enter filename
demo.txt
File Content:txt omed a si sihT
```

5. Write a program to accept string from client and replace duplicate characters with X.
Refer
https://www.javatpoint.com/socket-programming

Server.java:-

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

public class q5_server {
    public static String replaceDuplicateCharsWithX(String
inputString) {
        HashSet<Character> seen = new HashSet<>();
        StringBuilder output = new StringBuilder();
        for (char c : inputString.toCharArray()) {
            if (seen.contains(c)) {
                output.append('x');
            } else {
                output.append(c);
                seen.add(c);
            }
        }
        return output.toString();
    }

    public static void main(String[] args) {
        try {
            ServerSocket listener = new ServerSocket(1990);
            System.out.println("Server is ready");
            Socket serverSocket = listener.accept();
            InputStream input = serverSocket.getInputStream();
            DataInputStream dis = new DataInputStream(input);
            OutputStream os = serverSocket.getOutputStream();
            DataOutputStream dos = new DataOutputStream(os);
            try {
                String filename = dis.readUTF();
                String outputString =
replaceDuplicateCharsWithX(filename);
                dos.writeUTF("OUTPUT:" + outputString);
                listener.close();
            } catch (FileNotFoundException fe) {
                fe.printStackTrace();
            }
        } catch (IOException ie) {
            ie.printStackTrace();
        }
    }
}
```

Client.java:-

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

public class q5_client {
    public static void main(String abc[]) {
        try {
            Socket clientSocket = new Socket("localhost", 1990);
            OutputStream os = clientSocket.getOutputStream();
            DataOutputStream dos = new DataOutputStream(os);
            InputStream is = clientSocket.getInputStream();
            DataInputStream dis = new DataInputStream(is);
            Scanner scan = new Scanner(System.in);
            System.out.println("Enter string");
            String msg = scan.nextLine();
            dos.writeUTF(msg);
            System.out.println(dis.readUTF());
        } catch (UnknownHostException ue) {
            ue.printStackTrace();
        } catch (IOException ie) {
            ie.printStackTrace();
        }

    }
}
```

OUTPUT:-