1. **Write a program using DatagramPacket and DatagramSocket to copy the contents of one file into other.**

   Program :

➢ **Sender Program :**

FileSender.java - Notepad

File Edit Format View Help

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

public class FileSender {

    public static void main(String[] args) {
        String sourceFileName = "source.txt"; // Change this to your source file

        try {
            File sourceFile = new File(sourceFileName);

            DatagramSocket socket = new DatagramSocket();

            FileInputStream fileInputStream = new FileInputStream(sourceFile);
            byte[] data = new byte[(int) sourceFile.length()];
            fileInputStream.read(data);
            fileInputStream.close();

            InetAddress address = InetAddress.getLocalHost();
            int port = 12345;
            DatagramPacket packet = new DatagramPacket(data, data.length, address, port);
            socket.send(packet);

            socket.close();

            System.out.println("File sent successfully.");
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

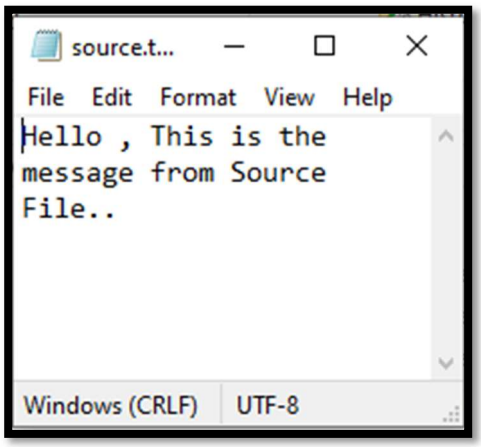
➢ Receiver Program :

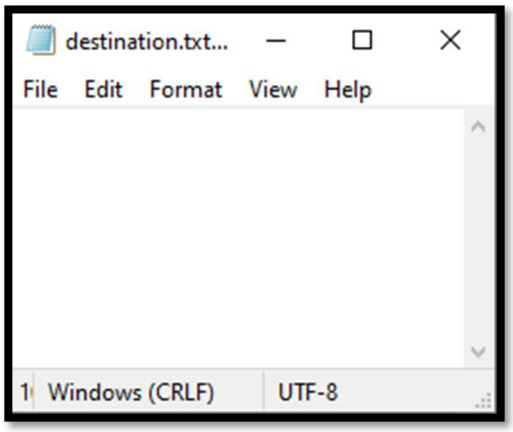
FileReceiver.java - Notepad

File Edit Format View Help

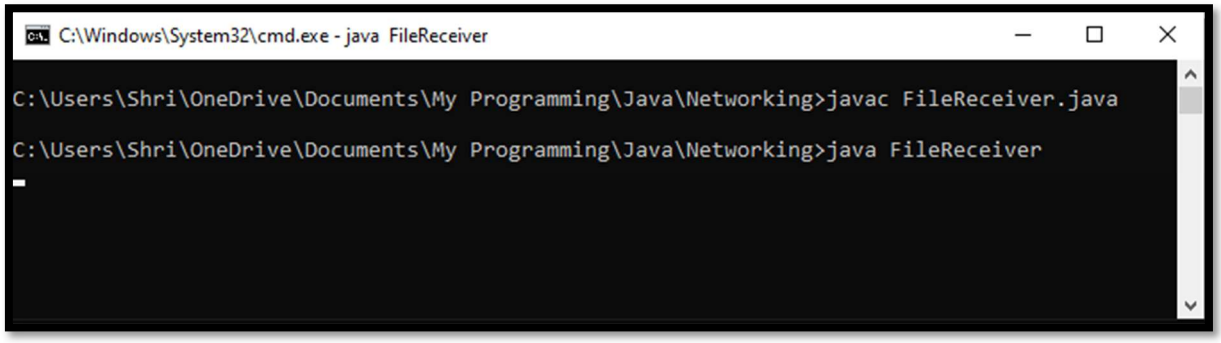
```
import java.io.*;
import java.net.*;

public class FileReceiver {

    public static void main(String[] args) {
        String destinationFileName = "destination.txt"; // Change this to your destination file

        try {
            File destinationFile = new File(destinationFileName);

            DatagramSocket socket = new DatagramSocket(12345); // Change this to the port you're listening on

            byte[] receiveData = new byte[1024];
            DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);
            socket.receive(receivePacket);

            FileOutputStream fileOutputStream = new FileOutputStream(destinationFile);
            fileOutputStream.write(receivePacket.getData(), 0, receivePacket.getLength());
            fileOutputStream.close();

            socket.close();

            System.out.println("File received successfully.");
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

Output:



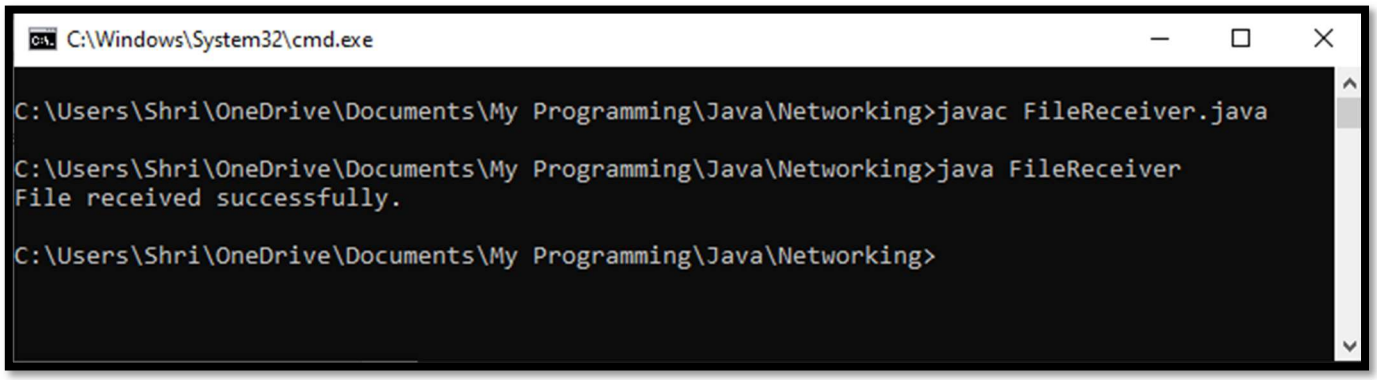


1.

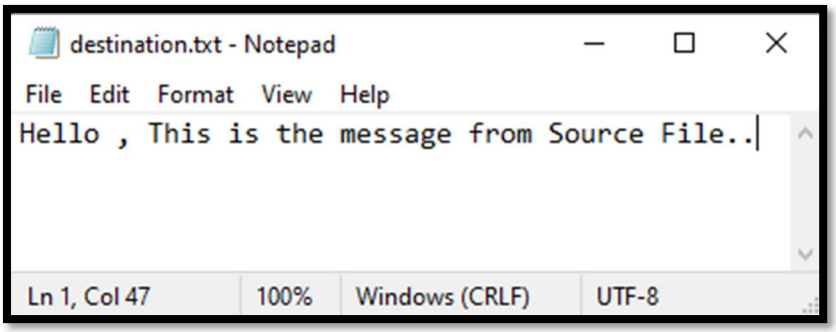


2.

3.



File Copied Successfully.



2. **Write a program using DatagramPacket and DatagramSocket to transfer the file from one location to another.**

- **Sender Program :**

FileTransfer.java - Notepad

File Edit Format View Help

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

public class FileTransfer {

    public static void main(String[] args) {
        String sourceFilePath = "C:\\Users\\Shri\\OneDrive\\Desktop\\Greet.txt";
        String destinationFilePath = "C:\\Users\\Shri\\Music\\Music\\received_Greet.txt";

        try {
            // Read data from source file
            File sourceFile = new File(sourceFilePath);
            byte[] data = new byte[(int) sourceFile.length()];
            FileInputStream fileInputStream = new FileInputStream(sourceFile);
            fileInputStream.read(data);
            fileInputStream.close();

            // Open a DatagramSocket
            DatagramSocket socket = new DatagramSocket();

            // Destination address and port
            InetAddress address = InetAddress.getLocalHost(); // Change this to the destination address
            int port = 12345; // Change this to the destination port

            // Send data
            DatagramPacket packet = new DatagramPacket(data, data.length, address, port);
            socket.send(packet);

            // Close socket
            socket.close();

            System.out.println("File sent successfully.");
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

➢ Reciever Program

FileReceiverT.java - Notepad

File Edit Format View Help

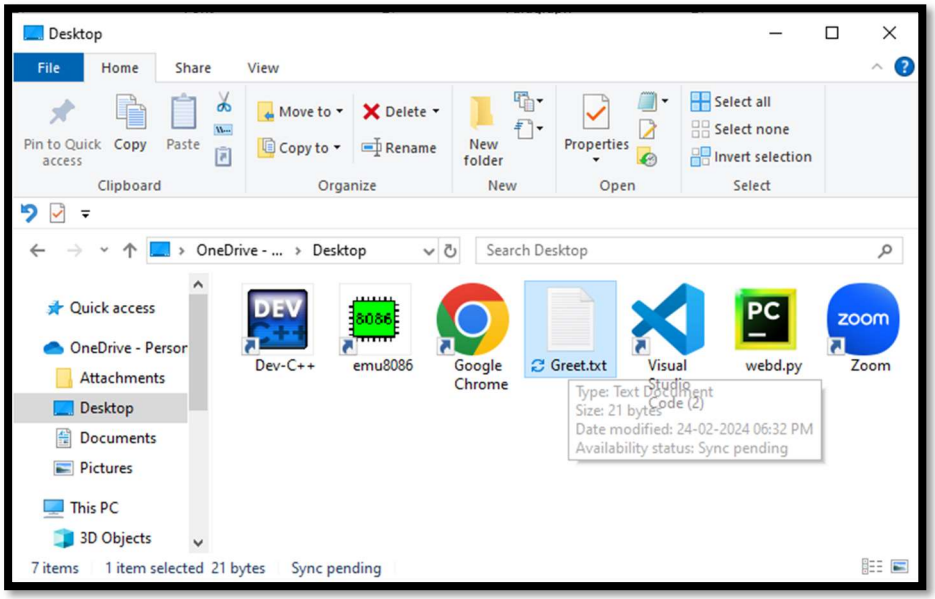
```
import java.io.*;
import java.net.*;

public class FileReceiverT {

    public static void main(String[] args) {
        String destinationFilePath = "C:\\Users\\Shri\\Music\\Music\\received_Greet.txt";

        try {
            // Create a DatagramSocket
            DatagramSocket socket = new DatagramSocket(12345); // Listen on port 12345

            // Receive data
            byte[] receiveData = new byte[1024]; // Buffer size
            DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);
            socket.receive(receivePacket);

            // Write received data to destination file
            File destinationFile = new File(destinationFilePath);
            FileOutputStream fileOutputStream = new FileOutputStream(destinationFile);
            fileOutputStream.write(receivePacket.getData(), 0, receivePacket.getLength());
            fileOutputStream.close();

            // Close socket
            socket.close();

            System.out.println("File received successfully.");
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

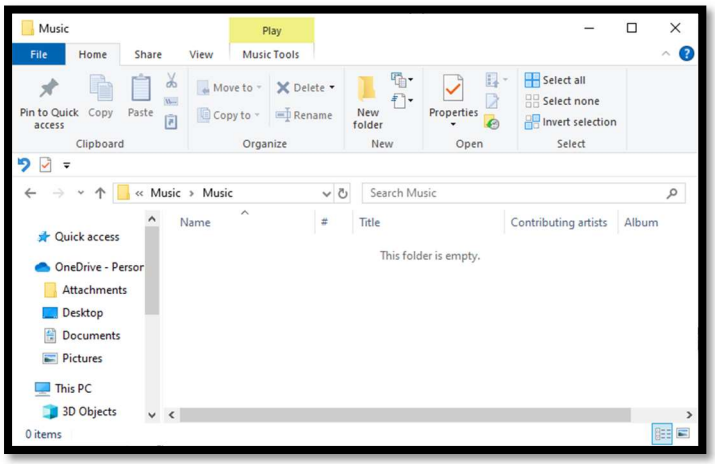
Output :

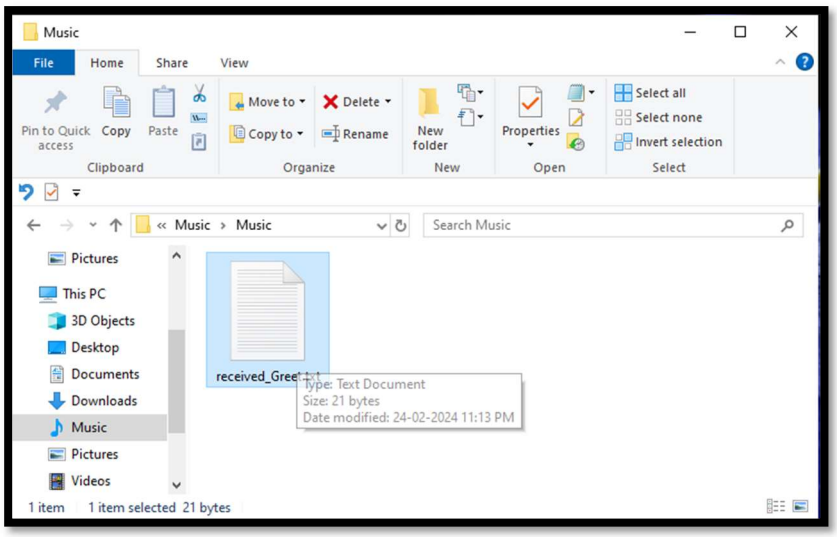
C:\Windows\System32\cmd.exe

```
Microsoft Windows [Version 10.0.19045.4046]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac FileReceiverT.java

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java FileReceiverT
File received successfully.

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>
```

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.4046]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac FileTransfer.java

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java FileTransfer
File sent successfully.

C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>
```







TCP Client/Server :

Client Program :

ClientDemo.java - Notepad

File Edit Format View Help

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

class ClientDemo {
     public static void main(String args[]) throws Exception {
          Socket s = new Socket("localhost", 9090);
          BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
          DataInputStream din = new DataInputStream(s.getInputStream());
          DataOutputStream dout = new DataOutputStream(s.getOutputStream());
          String str1 = "";
          while (!str1.equals("bye")) {
               str1 = br.readLine();
               dout.writeUTF(str1);
               str1 = din.readUTF();
               System.out.println("Server says:" + str1);
          }
          s.close();
     }
}
```

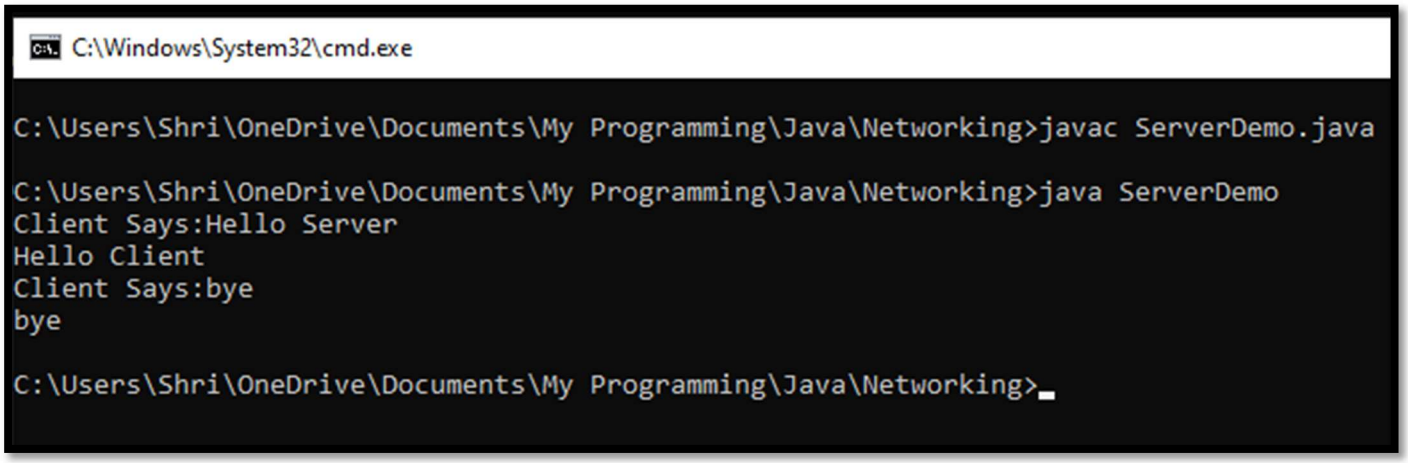
Server Program :

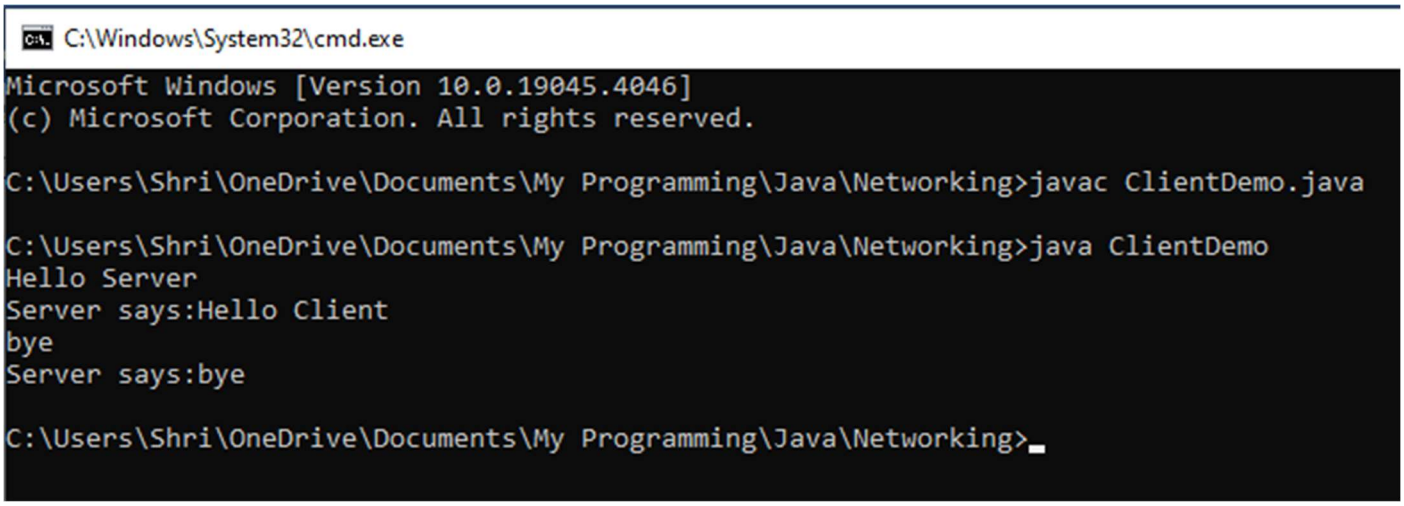
ServerDemo.java - Notepad

File Edit Format View Help

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

class ServerDemo {
    public static void main(String args[]) throws Exception {
        ServerSocket ss = new ServerSocket(9090);
        Socket s = ss.accept();
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        DataInputStream din = new DataInputStream(s.getInputStream());
        DataOutputStream dout = new DataOutputStream(s.getOutputStream());
        String str1 = "";
        while (!str1.equals("bye")) {
            str1 = din.readUTF();
            System.out.println("Client Says:" + str1);
            str1 = br.readLine();
            dout.writeUTF(str1);
        }
        ss.close();
        ss.close();
    }
}
```

Output :


C:\Windows\System32\cmd.exe
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac ServerDemo.java
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java ServerDemo
Client Says:Hello Server
Hello Client
Client Says:bye
bye
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19045.4046]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac ClientDemo.java
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java ClientDemo
Hello Server
Server says:Hello Client
bye
Server says:bye
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>

UDP Client/Server :

Server Program :

UDPServerDemo.java - Notepad

File Edit Format View Help

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

class UDPServerDemo {
    public static void main(String args[]) throws Exception {
        DatagramSocket serverSocket = new DatagramSocket(9090);
        byte[] receiveData = new byte[1024];
        byte[] sendData = new byte[1024];

        while (true) {
            DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);
            serverSocket.receive(receivePacket);
            String receivedSentence = new String(receivePacket.getData(), 0, receivePacket.getLength());
            System.out.println("Client Says: " + receivedSentence);

            BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
            String response = br.readLine();
            sendData = response.getBytes();
            InetAddress clientAddress = receivePacket.getAddress();
            int clientPort = receivePacket.getPort();
            DatagramPacket sendPacket = new DatagramPacket(sendData, sendData.length, clientAddress, clientPort);
            serverSocket.send(sendPacket);
            if (response.equals("bye"))
                break;
        }
        serverSocket.close();
    }
}
```

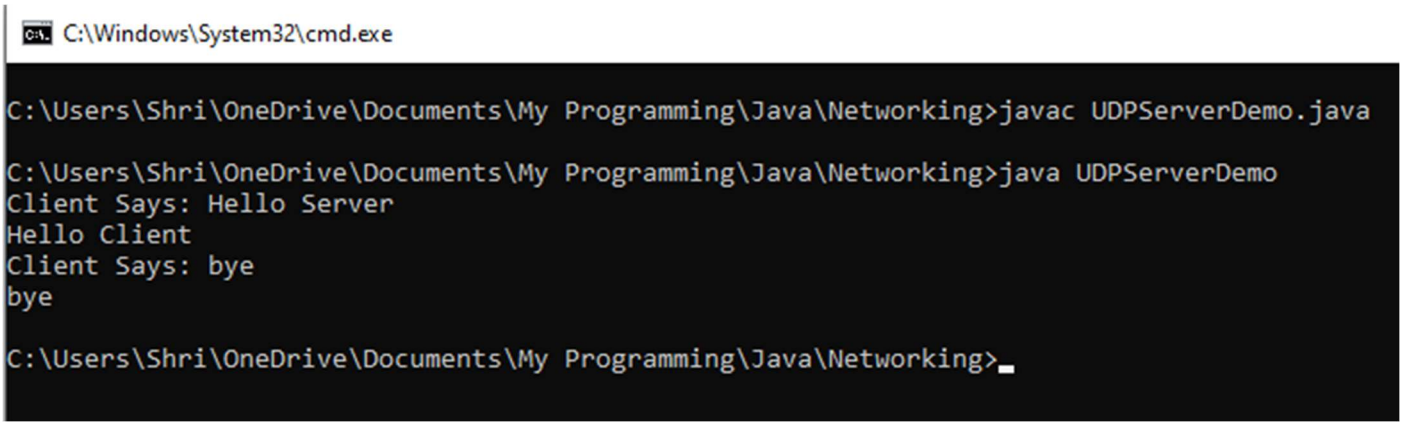
Client Program :

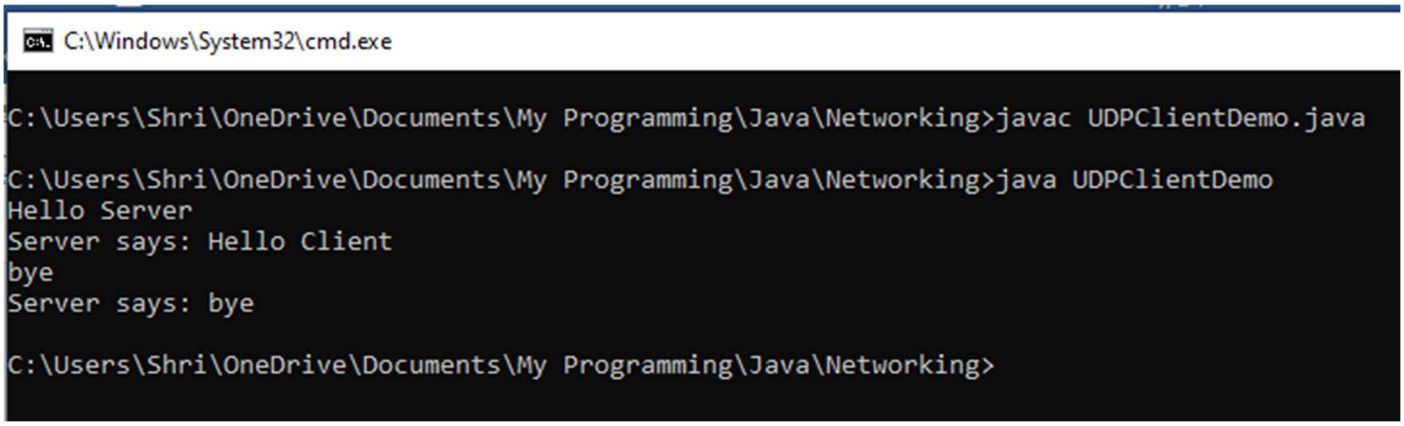
UDPClientDemo.java - Notepad

File Edit Format View Help

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

class UDPClientDemo {
    public static void main(String args[]) throws Exception {
        DatagramSocket clientSocket = new DatagramSocket();
        InetAddress serverAddress = InetAddress.getByName("localhost");
        byte[] sendData = new byte[1024];
        byte[] receiveData = new byte[1024];
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

        String sentence = "";
        while (!sentence.equals("bye")) {
            sentence = br.readLine();
            sendData = sentence.getBytes();
            DatagramPacket sendPacket = new DatagramPacket(sendData, sendData.length, serverAddress, 9090);
            clientSocket.send(sendPacket);

            DatagramPacket receivePacket = new DatagramPacket(receiveData, receiveData.length);
            clientSocket.receive(receivePacket);
            String receivedSentence = new String(receivePacket.getData(), 0, receivePacket.getLength());
            System.out.println("Server says: " + receivedSentence);
        }
        clientSocket.close();
    }
}
```

Output :


C:\Windows\System32\cmd.exe
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac UDPServerDemo.java
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java UDPServerDemo
Client Says: Hello Server
Hello Client
Client Says: bye
bye
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>


C:\Windows\System32\cmd.exe
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>javac UDPClientDemo.java
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>java UDPClientDemo
Hello Server
Server says: Hello Client
bye
Server says: bye
C:\Users\Shri\OneDrive\Documents\My Programming\Java\Networking>