Write a program using UDP Sockets to enable file transfer (Script, Text, Audio and Video one file each) between two machines.

1. **UDPServer.java**

import java.io.\*;

import java.net.\*;

public class UDPServer {

    private static final int BUFFER\_SIZE = 4096; // Size of each UDP packet buffer

    public static void main(String[] args) {

        DatagramSocket socket = null;

        FileOutputStream fileOutput = null;

        try {

            socket = new DatagramSocket(9876);

            System.out.println("Server is listening on port 9876...");

            byte[] buffer = new byte[BUFFER\_SIZE];

            DatagramPacket fileNamePacket = new DatagramPacket(buffer, buffer.length);

            socket.receive(fileNamePacket);

            String fileName = new String(fileNamePacket.getData(), 0, fileNamePacket.getLength());

            System.out.println("Receiving file: " + fileName);

            fileOutput = new FileOutputStream("received\_" + fileName);

            while (true) {

                DatagramPacket packet = new DatagramPacket(buffer, buffer.length);

                socket.receive(packet);

                if (packet.getLength() == 0) {

                    System.out.println("File transfer complete.");

                    break;

                }

                fileOutput.write(packet.getData(), 0, packet.getLength());

            }

        } catch (IOException e) {

            e.printStackTrace();

        } finally {

            try {

                if (fileOutput != null) {

                    fileOutput.close();

                }

                if (socket != null) {

                    socket.close();

                }

            } catch (IOException e) {

                e.printStackTrace();

            }

        }

    }

}

1. **UDPClient.java**

import java.io.\*;

import java.net.\*;

public class UDPClient {

    private static final int BUFFER\_SIZE = 4096;

    public static void main(String[] args) {

        DatagramSocket socket = null;

        FileInputStream fileInput = null;

        try {

            File file = new File("file\_to\_send.txt");

            String serverAddress = "localhost";

            int serverPort = 9876;

            socket = new DatagramSocket();

            InetAddress serverInetAddress = InetAddress.getByName(serverAddress);

            byte[] fileNameBytes = file.getName().getBytes();

            DatagramPacket fileNamePacket = new DatagramPacket(fileNameBytes, fileNameBytes.length, serverInetAddress,

                    serverPort);

            socket.send(fileNamePacket);

            fileInput = new FileInputStream(file);

            byte[] buffer = new byte[BUFFER\_SIZE];

            int bytesRead;

            while ((bytesRead = fileInput.read(buffer)) != -1) {

                DatagramPacket packet = new DatagramPacket(buffer, bytesRead, serverInetAddress, serverPort);

                socket.send(packet);

            }

            DatagramPacket endPacket = new DatagramPacket(new byte[0], 0, serverInetAddress, serverPort);

            socket.send(endPacket);

            System.out.println("File sent successfully!");

        } catch (IOException e) {

            e.printStackTrace();

        } finally {

            try {

                if (fileInput != null) {

                    fileInput.close();

                }

                if (socket != null) {

                    socket.close();

                }

            } catch (IOException e) {

                e.printStackTrace();

            }

        }

    }

}

**Output:**

D:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 9>java UDPServer

Server is listening on port 9876...

Receiving file: file\_to\_send.txt

File transfer complete.

D:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 9>java UDPClient

File sent successfully!