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();
        }
    }
  }
}
```

2. 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!