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ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

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Lab Assignment: 10

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

CODE:

UDPServer.java

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

public class UDPServer {
    private static final int PACKET_SIZE = 1024;
    private static final int PORT = 12346;

    public static void main(String[] args) {
        receiveFile("script.txt");
        receiveFile("text.txt");
        receiveFile("audio.mp3");
        receiveFile("video.mp4");
    }

    public static void receiveFile(String filename) {
        try {
            DatagramSocket socket = new DatagramSocket(PORT);
            byte[] buffer = new byte[PACKET_SIZE];

            // Receive file size
            DatagramPacket fileSizePacket = new DatagramPacket(buffer,
PACKET_SIZE);
            socket.receive(fileSizePacket);
            int fileSize = Integer.parseInt(new
String(fileSizePacket.getData()).trim());

            // Receive file content
            FileOutputStream fileOutputStream = new FileOutputStream(filename);
            while (true) {
                DatagramPacket packet = new DatagramPacket(buffer, PACKET_SIZE);
                socket.receive(packet);
                if (new String(packet.getData()).trim().equals("END")) {
                    break;
                }
                fileOutputStream.write(packet.getData(), 0, packet.getLength());
            }

            System.out.println("File " + filename + " received successfully.");
        }
    }
}
```

```

        fileOutputStream.close();
        socket.close();
    } catch (IOException e) {
        e.printStackTrace();
    }
}
}

```

UDPClient.java

```

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

public class Client2 {
    public static void main(String[] args) {
        try {
            Socket socket = new Socket("localhost", 12345); // Connect to the
server
            System.out.println("Connected to server");

            // Say Hello
            sayHello(socket);

            // File transfer
            receiveFile(socket);

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

    private static void sayHello(Socket socket) throws IOException {
        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);
        BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));

        System.out.println("Server: " + in.readLine());
        out.println("Hello, I'm the client!");
    }

    private static void receiveFile(Socket socket) throws IOException {
        InputStream inputStream = socket.getInputStream();
        BufferedReader userInput = new BufferedReader(new
InputStreamReader(System.in));
    }
}

```

```
System.out.print("Enter the name for the received file: ");
String filename = userInput.readLine();

try (FileOutputStream fileOutputStream = new FileOutputStream(filename)) {
    byte[] buffer = new byte[1024];
    int bytesRead;

    while ((bytesRead = inputStream.read(buffer)) != -1) {
        fileOutputStream.write(buffer, 0, bytesRead);
    }

    System.out.println("File received successfully.");
} catch (FileNotFoundException e) {
    System.out.println("Error receiving file: " + e.getMessage());
}
}
```

OutPut:

```
C:\Users\rames\Documents\CN>java UDPServer
File text.txt received successfully.
|
```

```
C:\Users\rames\Documents\CN\practical>java UDPFileTransfer
File text.txt sent successfully.
```