**UDPServer.java :-**

// Java Program to illustrate Server Side implementation

// of Simple Calculator using UDP

import java.io.IOException;

import java.net.DatagramPacket;

import java.net.DatagramSocket;

import java.net.InetAddress;

import java.util.StringTokenizer;

public class UDPServer

{

public static void main(String[] args) throws IOException

{

// Create a socket to listen at port 1234

DatagramSocket ds = new DatagramSocket(1234);

byte[] buf = null;

DatagramPacket DpReceive = null;

DatagramPacket DpSend = null;

while (true)

{

buf = new byte[65535];

// create a DatgramPacket to receive the data.

DpReceive = new DatagramPacket(buf, buf.length);

// receive the data in byte buffer.

ds.receive(DpReceive);

String inp = new String(buf, 0, buf.length);

//To remove extra spaces.

inp=inp.trim();

System.out.println("Equation Received:- " + inp);

// Exit the server if the client sends "bye"

if (inp.equals("bye"))

{

System.out.println("Client sent bye.....EXITING");

break;

}

float result;

// Use StringTokenizer to break the

// equation into operand and operation

StringTokenizer st = new StringTokenizer(inp);

float oprnd1 = Float.parseFloat(st.nextToken());

String operation = st.nextToken();

float oprnd2 = Float.parseFloat(st.nextToken());

// perform the required operation.

if (operation.equals("+"))

result = oprnd1 + oprnd2;

else if (operation.equals("-"))

result = oprnd1 - oprnd2;

else if (operation.equals("\*"))

result = oprnd1 \* oprnd2;

else

result = oprnd1 / oprnd2;

System.out.println("Sending the result...");

String res = Float.toString(result);

// Clear the buffer after every message.

buf = res.getBytes();

// get the port of client.

int port = DpReceive.getPort();

DpSend = new DatagramPacket(buf, buf.length, InetAddress.getLocalHost(), port);

ds.send(DpSend);

}

}

}

**UDPClient.java :-**

// Java Program to illustrate Client Side implementation

// of Simple Calculator using UDP

import java.io.IOException;

import java.net.DatagramPacket;

import java.net.DatagramSocket;

import java.net.InetAddress;

import java.util.Scanner;

public class UDPClient

{

public static void main(String args[]) throws IOException

{

Scanner sc = new Scanner(System.in);

// Step 1:Create the socket object for carrying

// the data

DatagramSocket ds = new DatagramSocket();

InetAddress ip = InetAddress.getLocalHost();

byte buf[] = null;

// loop while user not enters "bye"

while (true)

{

System.out.print("Enter the equation in the format:");

System.out.println("'operand1 operator operand2'");

String inp = sc.nextLine();

buf = new byte[65535];

// convert the String input into the byte array.

buf = inp.getBytes();

// Step 2:Create the datagramPacket for sending the data.

DatagramPacket DpSend =

new DatagramPacket(buf, buf.length, ip, 1234);

// invoke the send call to actually send the data.

ds.send(DpSend);

// break the loop if user enters "bye"

if (inp.equals("bye"))

break;

buf = new byte[65535];

DatagramPacket DpReceive =

new DatagramPacket(buf, buf.length);

ds.receive(DpReceive);

System.out.println("Answer = " +

new String(buf,0,buf.length));

}

}

}

**Server Output :-**

C:\Users\Administrator\eclipse-workspace\UDPCal\src>javac UDPServer.java

C:\Users\Administrator\eclipse-workspace\UDPCal\src>java UDPServer

Equation Received:- 5 \* 6

Sending the result...

Equation Received:- 4 / 2

Sending the result...

Equation Received:- 2 + 9

Sending the result...

Equation Received:- 6 - 7

Sending the result...

Equation Received:- bye

Client sent bye.....EXITING

**Client Output :-**

C:\Users\Administrator\eclipse-workspace\UDPCal\src>javac UDPClient.java

C:\Users\Administrator\eclipse-workspace\UDPCal\src>java UDPClient

Enter the equation in the format:'operand1 operator operand2'

5 \* 6

Answer = 30.0

Enter the equation in the format:'operand1 operator operand2'

4 / 2

Answer = 2.0

Enter the equation in the format:'operand1 operator operand2'

2 + 9

Answer = 11.0

Enter the equation in the format:'operand1 operator operand2'

6 - 7

Answer = -1.0

Enter the equation in the format:'operand1 operator operand2'

bye