Practical 8 (calculator rmi)

**MathServer.java -**

import java.rmi.\*;

import java.rmi.Naming.\*;

import java.rmi.server.\*;

import java.rmi.registry.\*;

import java.net.\*;

import java.util.\*;

interface mathInterface extends Remote {

public int add(int a, int b) throws RemoteException;

public int subt(int a, int b) throws RemoteException;

public int mult(int a, int b) throws RemoteException;

public int div(int a, int b) throws RemoteException;

}

public class MathServer extends UnicastRemoteObject implements mathInterface {

public MathServer() throws RemoteException {

System.out.println("Initializing Server");

}

public int add(int a, int b) {

return (a + b);

}

public int subt(int a, int b) {

return (a - b);

}

public int mult(int a, int b) {

return (a \* b);

}

public int div(int a, int b) {

return (a / b);

}

public static void main(String args[]) {

try {

MathServer ms = new MathServer();

java.rmi.Naming.rebind("MathServ", ms);

System.out.println("Server Ready");

} catch (RemoteException RE) {

System.out.println("Remote Server Error:" + RE.getMessage());

System.exit(0);

} catch (MalformedURLException ME) {

System.out.println("Invalid URL!!");

}

}

}

**MathClient.java -**

import java.rmi.\*;

import java.rmi.registry.\*;

import java.awt.\*;

import java.awt.event.\*;

public class MathClient extends Frame implements ActionListener {

Button B1 = new Button("Sum");

Button B2 = new Button("Subtract");

Button B3 = new Button("Multiply");

Button B4 = new Button("Divide");

Label l1 = new Label("Number 1");

Label l2 = new Label("Number 2");

Label l3 = new Label("Result");

TextField t1 = new TextField(20);

TextField t2 = new TextField(20);

TextField t3 = new TextField(20);

public MathClient() {

super("Calculator");

setLayout(null);

l1.setBounds(20, 50, 55, 25);

add(l1);

l2.setBounds(20, 100, 55, 25);

add(l2);

l3.setBounds(20, 150, 55, 25);

add(l3);

t1.setBounds(150, 50, 100, 25);

add(t1);

t2.setBounds(150, 100, 100, 25);

add(t2);

t3.setBounds(150, 150, 100, 25);

add(t3);

B1.setBounds(20, 200, 80, 25);

add(B1);

B2.setBounds(100, 200, 80, 25);

add(B2);

B3.setBounds(180, 200, 80, 25);

add(B3);

B4.setBounds(260, 200, 80, 25);

add(B4);

B1.addActionListener(this);

B2.addActionListener(this);

B3.addActionListener(this);

B4.addActionListener(this);

addWindowListener(new WindowAdapter() {

public void windowClosing(WindowEvent e) {

System.exit(0);

}

});

}

public void actionPerformed(ActionEvent AE) {

if (AE.getSource() == B1) {

sum();

} else if (AE.getSource() == B2) {

subt();

} else if (AE.getSource() == B3) {

mult();

} else if (AE.getSource() == B4) {

div();

}

}

public void sum() {

int i = Integer.parseInt(t1.getText());

int j = Integer.parseInt(t2.getText());

int val;

try {

String ServerURL = "rmi://localhost/MathServ"; // Adjust the server URL accordingly

// Casting to mathInterface

mathInterface MI = (mathInterface) Naming.lookup(ServerURL);

val = MI.add(i, j);

t3.setText("" + val);

} catch (Exception ex) {

System.out.println("Exception:" + ex);

}

}

public void subt() {

int i = Integer.parseInt(t1.getText());

int j = Integer.parseInt(t2.getText());

int val;

try {

String ServerURL = "rmi://localhost/MathServ"; // Adjust the server URL accordingly

// Casting to mathInterface

mathInterface MI = (mathInterface) Naming.lookup(ServerURL);

val = MI.subt(i, j);

t3.setText("" + val);

} catch (Exception ex) {

System.out.println("Exception:" + ex);

}

}

public void mult() {

int i = Integer.parseInt(t1.getText());

int j = Integer.parseInt(t2.getText());

int val;

try {

String ServerURL = "rmi://localhost/MathServ"; // Adjust the server URL accordingly

// Casting to mathInterface

mathInterface MI = (mathInterface) Naming.lookup(ServerURL);

val = MI.mult(i, j);

t3.setText("" + val);

} catch (Exception ex) {

System.out.println("Exception:" + ex);

}

}

public void div() {

int i = Integer.parseInt(t1.getText());

int j = Integer.parseInt(t2.getText());

int val;

try {

String ServerURL = "rmi://localhost/MathServ"; // Adjust the server URL accordingly

// Casting to mathInterface

mathInterface MI = (mathInterface) Naming.lookup(ServerURL);

val = MI.div(i, j);

t3.setText("" + val);

} catch (Exception ex) {

System.out.println("Exception:" + ex);

}

}

public static void main(String args[]) {

MathClient MC = new MathClient();

MC.setVisible(true);

MC.setSize(600, 500);

};

}