//DS Assignment 2: Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).

//CalculatorImpl.java

**import** org.omg.CORBA.ORB;

**import** CalculatorApp.CalculatorPOA;

**public** **class** CalculatorImpl **extends** CalculatorPOA {

**private** ORB orb;

**public** CalculatorImpl(ORB orb) {

**super**();

**this**.orb = orb;

}

@Override

**public** **double** add(**double** x, **double** y) {

**return** x + y;

}

@Override

**public** **double** subtract(**double** x, **double** y) {

**return** x - y;

}

@Override

**public** **double** multiply(**double** x, **double** y) {

**return** x \* y;

}

@Override

**public** **double** divide(**double** x, **double** y) {

**if** (y == 0) {

**return** Double.***MAX\_VALUE***;

}

**return** x / y;

}

@Override

**public** **void** shutdown() {

orb.shutdown(**false**);

}

}

//Calculator.idl

module CalculatorApp

{

interface Calculator

{

double add(in double x, in double y);

double subtract(in double x, in double y);

double multiply(in double x, in double y);

double divide(in double x, in double y);

oneway void shutdown();

};

};

//Client.java

**import** java.util.Scanner;

**import** org.omg.CORBA.ORB;

**import** org.omg.CosNaming.NamingContextExt;

**import** org.omg.CosNaming.NamingContextExtHelper;

**import** CalculatorApp.Calculator;

**import** CalculatorApp.CalculatorHelper;

**public** **class** Client {

**public** **static** **void** main(String[] args) {

**try** {

ORB orb = ORB.*init*(args, **null**);

org.omg.CORBA.Object objRef = orb.resolve\_initial\_references("NameService");

NamingContextExt ncRef = NamingContextExtHelper.*narrow*(objRef);

Calculator calculator = CalculatorHelper.narrow(ncRef.resolve\_str("ABC"));

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("Welcome to addition system:");

**while** (**true**) {

System.***out***.println("1. Add");

System.***out***.println("2. Subtract");

System.***out***.println("3. Multiply");

System.***out***.println("4. Divide");

System.***out***.println("Press any key to exit");

System.***out***.print("Enter your choice: ");

**int** choice = sc.nextInt();

**if** (choice == 5) {

**break**;

}

System.***out***.print("Enter first no: ");

**double** x = sc.nextDouble();

System.***out***.print("Enter second no: ");

**double** y = sc.nextDouble();

**if** (choice == 1) {

System.***out***.println("Ans = " + x + " + " + y + " = " + calculator.add(x, y));

} **else** **if** (choice == 2) {

System.***out***.println("Ans = " + x + " - " + y + " = " + calculator.subtract(x, y));

} **else** **if** (choice == 3) {

System.***out***.println("Ans = " + x + " \* " + y + " = " + calculator.multiply(x, y));

} **else** **if** (choice == 4) {

System.***out***.println("Ans = " + x + " / " + y + " = " + calculator.divide(x, y));

}

System.***out***.println("---------------------------------------------------\n");

}

sc.close();

} **catch** (Exception e) {

System.***out***.println("Client Error: " + e);

e.printStackTrace(System.***out***);

}

}

}

//Server.java

**import** org.omg.CORBA.ORB;

**import** org.omg.CosNaming.NameComponent;

**import** org.omg.CosNaming.NamingContextExt;

**import** org.omg.CosNaming.NamingContextExtHelper;

**import** org.omg.PortableServer.POA;

**import** org.omg.PortableServer.POAHelper;

**import** CalculatorApp.Calculator;

**import** CalculatorApp.CalculatorHelper;

**public** **class** Server {

**public** **static** **void** main(String[] args) {

**try** {

// create and initialize the orb

ORB orb = ORB.*init*(args, **null**);

// get reference to rootPOA

POA rootPOA = POAHelper.*narrow*(orb.resolve\_initial\_references("RootPOA"));

// activate the POAManager

rootPOA.the\_POAManager().activate();

// create servant and register it with the ORB

CalculatorImpl calculator = **new** CalculatorImpl(orb);

// get object reference from the servant

org.omg.CORBA.Object ref = rootPOA.servant\_to\_reference(calculator);

Calculator href = CalculatorHelper.narrow(ref);

org.omg.CORBA.Object objRef = orb.resolve\_initial\_references("NameService");

NamingContextExt ncRef = NamingContextExtHelper.*narrow*(objRef);

NameComponent[] path = ncRef.to\_name("ABC");

ncRef.rebind(path, href);

System.***out***.println("Server ready and waiting...");

**while** (**true**) {

orb.run();

}

} **catch** (Exception e) {

System.***out***.println("Server Error: " + e);

e.printStackTrace(System.***out***);

}

System.***out***.println("Server Exiting...");

}

}

/\* OUTPUT:

Welcome to Calculator System

1. Add

2. Subtract

3. Multiply

4. Divide

Press any key to exit

Enter your choice: 1

Enter first no: 22

Enter second no: 8

Ans = 22.0 + 2.0 = 30.0

\*/