

Assign 2

CalculatorImpl.java

```
package server;

import org.omg.CORBA.ORB;

import calculator_module.CalculatorPOA;

public class CalculatorImpl extends CalculatorPOA {

    private ORB orb;

    public void setORB(ORB orb_val) {
        orb = orb_val;
    }

    // implement add() method
    @Override
    public int add(int a, int b) {
        return a + b;
    }

    // implement subtract() method
    @Override
    public int subtract(int a, int b) {
        return a - b;
    }

    // implement multiply() method
    @Override
    public int multiply(int a, int b) {
        return a * b;
    }

    // implement divide() method
    @Override
    public int divide(int a, int b) {
        return a / b;
    }

    // implement shutdown() method
    @Override
```

```

        public void shutdown() {
            orb.shutdown(false);
        }
    }
}

```

CalculatorSever.java

```

package server;

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

import calculator_module.Calculator;
import calculator_module.CalculatorHelper;

public class CalculatorServer {

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

            // create and initialize the ORB
            ORB orb = ORB.init(args, null);

            // get reference to rootpoa & activate the POAManager
            POA rootpoa = (POA)orb.resolve_initial_references("RootPOA");
            rootpoa.the_POAManager().activate();

            // create servant and register it with the ORB
            CalculatorImpl calculatorImpl = new CalculatorImpl();
            calculatorImpl.setORB(orb);

            // get object reference from the servant
            org.omg.CORBA.Object ref =
rootpoa.servant_to_reference(calculatorImpl);
            Calculator href = CalculatorHelper.narrow(ref);

            // get the root naming context
            // NameService invokes the transient name service
            org.omg.CORBA.Object objRef =
orb.resolve_initial_references("NameService");
            // Use NamingContextExt which is part of the Interoperable
            // Naming Service (INS) specification.

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        NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);

        // bind the Object Reference in Naming
        String name = "Calculator";
        NameComponent path[] = ncRef.to_name( name );
        ncRef.rebind(path, href);

        System.out.println("CalculatorServer ready and waiting ...");

        // wait for invocations from clients
        orb.run();

    } catch (Exception e) {
        System.err.println("ERROR: " + e);
        e.printStackTrace(System.out);
    } finally {
        System.out.println("CalculatorServer Exiting ...");
    }
}
}

```

CalculatorClient.java

```

package client;

import org.omg.CORBA.ORB;
import org.omg.CORBA.ORBPackage.InvalidName;
import org.omg.CosNaming.*;

import calculator_module.Calculator;
import calculator_module.CalculatorHelper;

public class CalculatorClient {

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

            // create and initialize the ORB
            ORB orb = ORB.init(args, null);

            // get the root naming context
            // NameService invokes the transient name service
            org.omg.CORBA.Object objRef =

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orb.resolve_initial_references("NameService");
    // Use NamingContextExt which is part of the Interoperable
    // Naming Service (INS) specification.
    NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);

    // resolve the Object Reference in Naming
    String name = "Calculator";
    Calculator calculator =
CalculatorHelper.narrow(ncRef.resolve_str(name));

    System.out.println("Obtained a handle on server object");
    System.out.println(calculator.add(1, 2));
    System.out.println(calculator.subtract(1, 2));
    System.out.println(calculator.multiply(1, 2));
    System.out.println(calculator.divide(1, 2));

    } catch (Exception e) {
        System.out.println("ERROR : " + e);
        e.printStackTrace(System.out);
    }
}
}
}

```

orbd

```
PS D:\Acad\DS Assign\Assign 2> orbd -ORBInitialPort 1050 -ORBInitialHost localhost
```

Calculator Server

```
PS D:\Acad\DS Assign\Assign 2> & 'C:\Program Files\Eclipse Adoptium\jdk-8.0.402.6-hotspot\bin\java.exe' '-cp' 'C:\Users\kanch\AppData\Roaming\Code\User\workspaceStorage\390afc84350f74a738b803fcb9ccb67a\redhat.java\jdt_ws\Assign 2_bec8f0a1\bin' 'server.CalculatorServer' -ORBInitialPort 1050 -ORBInitialHost localhost
CalculatorServer ready and waiting ...
```

Calculator Client

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... 11 more
PS D:\Acad\DS Assign\Assign 2> & 'C:\Program Files\Eclipse Adoptium\jdk-8.0.402.6-hotspot\bin\java.exe' '-cp' 'C:\Users\kanch\AppData\Roaming\Code\User\workspaceStorage\390afc84350f74a738b803fcb9ccb67a\redhat.java\jdt_ws\Assign 2_bec8f0a1\bin' 'client.CalculatorClient' -ORBInitialPort 1050 -ORBInitialHost localhost
Obtained a handle on server object
3
-1
2
0
PS D:\Acad\DS Assign\Assign 2>

```