Assignment 2

Calculator.idl

```
module CalculatorModule
{
    interface Calculator
    {
        float add(in float num1, in float num2);
        float subtract(in float num1, in float num2);
        float multiply(in float num1, in float num2);
        float divide(in float num1, in float num2);
    };
};
```

CalculatorImpl.java

```java
import CalculatorModule.CalculatorPOA;

class CalculatorImpl extends CalculatorPOA
{
    public float add(float num1, float num2)
    {
        return num1 + num2;
    }

    public float subtract(float num1, float num2)
    {
        return num1 - num2;
    }

    public float multiply(float num1, float num2)
    {
        return num1 * num2;
    }

    public float divide(float num1, float num2)
    {
        if (num2 == 0) throw new ArithmeticException("Cannot divide by zero");
        return num1 / num2;
    }
}
```

CalculatorServer.java

```java
import CalculatorModule.Calculator;
import org.omg.CosNaming.*;
import org.omg.CORBA.*;
import org.omg.PortableServer.*;

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

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

                  POA rootPOA =
POAHelper.narrow(orb.resolve_initial_references("RootPOA"));
                  rootPOA.the_POAManager().activate();

                  CalculatorImpl calcImpl = new CalculatorImpl();
                  org.omg.CORBA.Object ref = rootPOA.servant_to_reference(calcImpl);
                  Calculator href = CalculatorModule.CalculatorHelper.narrow(ref);

                  org.omg.CORBA.Object objRef =
orb.resolve_initial_references("NameService");
                  NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);

                  String name = "Calculator";
                  NameComponent path[] = ncRef.to_name(name);
                  ncRef.rebind(path, href);

                  System.out.println("Calculator Server Ready...");
                  orb.run();
            }

            catch (Exception e)
            {
                e.printStackTrace();
            }
      }
}
```

CalculatorClient.java

```java
import CalculatorModule.Calculator;
import org.omg.CosNaming.*;
import org.omg.CORBA.*;
import java.util.*;

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

            ORB orb = ORB.init(args, null);
            Scanner sc = new Scanner(System.in);

            org.omg.CORBA.Object objRef =
orb.resolve_initial_references("NameService");
            NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);

            String name = "Calculator";
            Calculator calc =
CalculatorModule.CalculatorHelper.narrow(ncRef.resolve_str(name));


            System.out.println("Enter First number: ");
            int a = sc.nextInt();

            System.out.println("Enter Second number: ");
            int b = sc.nextInt();

            System.out.println("Addition: " + calc.add(a,b));
            System.out.println("Subtraction: " + calc.subtract(a,b));
            System.out.println("Multiplication: " + calc.multiply(a,b));
            System.out.println("Division: " + calc.divide(a,b));
        }

        catch (Exception e)
        {
            e.printStackTrace();
        }
    }
}
```

OUTPUT:

Server Side:

(base) admin1@bflcomp20:~/Downloads/ass2$ idlj -fall Calculator.idl

(base) admin1@bflcomp20:~/Downloads/ass2$ javac *.java CalculatorModule/*.java

(base) admin1@bflcomp20:~/Downloads/ass2$ orbd -ORBInitialPort 1050 &

[1] 9792

(base) admin1@bflcomp20:~/Downloads/ass2$ java CalculatorServer -ORBInitialPort
1050 -ORBInitialHost localhost &

[2] 9830

(base) admin1@bflcomp20:~/Downloads/ass2$ Calculator Server Ready...

Client Side:

(base) admin1@bflcomp20:~/Downloads/ass2$ java CalculatorClient -ORBInitialPort 1050 -
ORBInitialHost localhost

Enter First number:
100

Enter Second number:
20

Addition: 120.0
Subtraction: 80.0
Multiplication: 2000.0
Division: 5.0