CODE

Calc.idl

```
module CalcApp
{
        interface Calc
        {
                exception DivisionByZero {};

                float sum(in float a, in float b);
                float div(in float a, in float b) raises (DivisionByZero);
                float mul(in float a, in float b);
                float sub(in float a, in float b);
        };
};
```

CalcServer.java

```
import CalcApp.*;
import CalcApp.CalcPackage.DivisionByZero;

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

import java.util.Properties;

class CalcImpl extends CalcPOA {

    @Override
    public float sum(float a, float b) {
        return a + b;
    }

    @Override
    public float div(float a, float b) throws DivisionByZero {
        if (b == 0) {
            throw new CalcApp.CalcPackage.DivisionByZero();
        } else {
            return a / b;
        }
    }

    @Override
    public float mul(float a, float b) {
        return a * b;
    }
@Override
    public float sub(float a, float b) {
        return a - b;
    }
    private ORB orb;

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

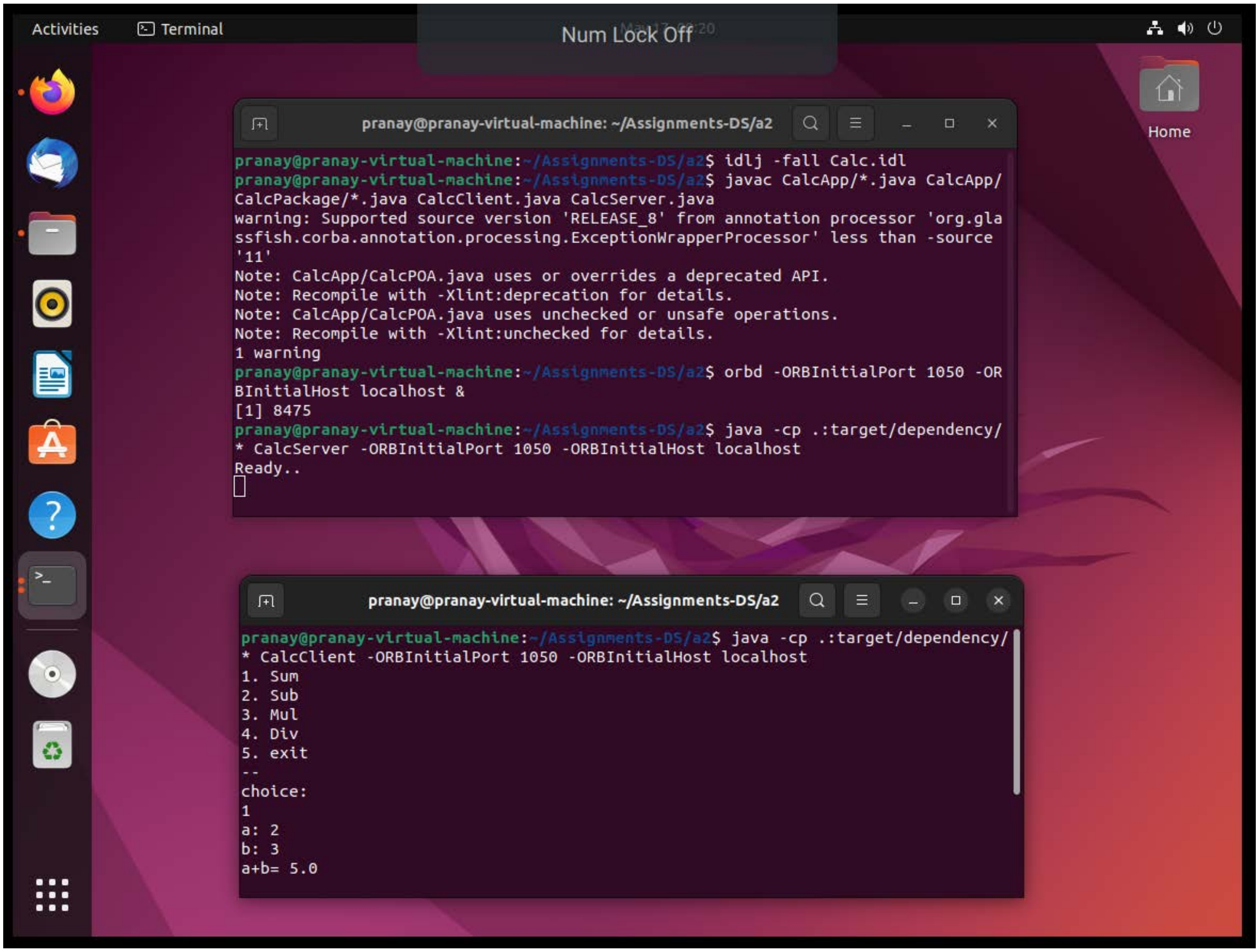
```
public class CalcServer {

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

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

            // get object reference from the servant
            org.omg.CORBA.Object ref = rootpoa.servant_to_reference(helloImpl);
            Calc href = CalcHelper.narrow(ref);

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

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

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

            // wait for invocations from clients
            orb.run();
        } catch (Exception e) {
            System.err.println("ERROR: " + e);
            e.printStackTrace(System.out);
        }

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

    }
}
```

CalcClient.java

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

import CalcApp.*;
import CalcApp.CalcPackage.DivisionByZero;

import org.omg.CosNaming.*;
import org.omg.CosNaming.NamingContextPackage.*;
import org.omg.CORBA.*;
import static java.lang.System.out;
```

```
public class CalcClient {

    static Calc calcImpl;
    static BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

    public static void main(String args[]) {

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

            // get the root naming context
            org.omg.CORBA.Object objRef = orb.resolve_initial_references("NameService");
            // Use NamingContextExt instead of NamingContext. This is
            // part of the Interoperable naming Service.
            NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);

            // resolve the Object Reference in Naming
            String name = "Calc";
            calcImpl = CalcHelper.narrow(ncRef.resolve_str(name));

//                                              System.out.println(calcImpl);


            while (true) {
                out.println("1. Sum");
                out.println("2. Sub");
                out.println("3. Mul");
                out.println("4. Div");
                out.println("5. exit");
                out.println("--");
                out.println("choice: ");

                try {
                    String opt = br.readLine();
                    if (opt.equals("5")) {
                        break;
 } else if (opt.equals("1")) {
                        out.println("a+b= " + calcImpl.sum(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("2")) {
                        out.println("a-b= " + calcImpl.sub(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("3")) {
                        out.println("a*b= " + calcImpl.mul(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("4")) {
                        try {
                            out.println("a/b= " + calcImpl.div(getFloat("a"), getFloat("b")));
                        } catch (DivisionByZero de) {
                            out.println("Division by zero!!!");
                        }
                    }
 } else if (opt.equals("1")) {
                        out.println("a+b= " + calcImpl.sum(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("2")) {
                        out.println("a-b= " + calcImpl.sub(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("3")) {
                        out.println("a*b= " + calcImpl.mul(getFloat("a"), getFloat("b")));
                    } else if (opt.equals("4")) {
                        try {
                            out.println("a/b= " + calcImpl.div(getFloat("a"), getFloat("b")));
                        } catch (DivisionByZero de) {
                            out.println("Division by zero!!!");
                        }
                    }
                } catch (Exception e) {
                    out.println("===");
                    out.println("Error with numbers");
                    out.println("===");
                }
                out.println("");

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

    static float getFloat(String number) throws Exception {
        out.print(number + ": ");
        return Float.parseFloat(br.readLine());
    }
}
```

OUTPUT


Activities
Terminal
Num Lock Off
Home
pranay@pranay-virtual-machine: ~/Assignments-DS/a2
pranay@pranay-virtual-machine: ~/Assignments-DS/a2

```
pranay@pranay-virtual-machine:~/Assignments-DS/a2$ idlj -fall Calc.idl
pranay@pranay-virtual-machine:~/Assignments-DS/a2$ javac CalcApp/*.java CalcApp/
CalcPackage/*.java CalcClient.java CalcServer.java
warning: Supported source version 'RELEASE_8' from annotation processor 'org.gla
ssfish.corba.annotation.processing.ExceptionWrapperProcessor' less than -source
'11'
Note: CalcApp/CalcPOA.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
Note: CalcApp/CalcPOA.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
1 warning
pranay@pranay-virtual-machine:~/Assignments-DS/a2$ orbd -ORBInitialPort 1050 -OR
BInitialHost localhost &
[1] 8475
pranay@pranay-virtual-machine:~/Assignments-DS/a2$ java -cp .:target/dependency/
* CalcServer -ORBInitialPort 1050 -ORBInitialHost localhost
Ready..
```

```
pranay@pranay-virtual-machine:~/Assignments-DS/a2$ java -cp .:target/dependency/
* CalcClient -ORBInitialPort 1050 -ORBInitialHost localhost
1. Sum
2. Sub
3. Mul
4. Div
5. exit
--
choice:
1
a: 2
b: 3
a+b= 5.0
```