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Roll No: 47006 Class: BE-IT-B

Subject: Distributed Systems

Assignment No. 2

Problem Statement: Develop any distributed application using CORBA to demonstrate object brokering. (Calculator or String operations).

Code:

ReverseClient.java

```
// client
import ReverseModule.*;
import org.omg.CosNaming.*;
import org.omg.CosNaming.NamingContextPackage.*;
import org.omg.CORBA.*;
import java.io.*;
class ReverseClient
{
    public static void main(String args[])
    {
        Reverse ReversImpl=null;
        try
        {
            // initialize the ORB
            org.omg.CORBA.ORB orb = org.omg.CORBA.ORB.init(args, null);
            org.omg.CORBA.Object objRef = orb.resolve_initial_references ("NameService");
            NamingContextExt ncRef = NamingContextExtHelper.narrow (objRef);
            String name = "Reverse";
            ReversImpl = ReverseHelper.narrow(ncRef.resolve_str(name));
            System.out.println("Enter String=");
            BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
            String str = br.readLine();
            String tempStr = ReversImpl.reverse_string(str);
            System.out.println(tempStr);
        }
        catch (Exception e)
        {
            e.printStackTrace();
        }
    }
}
```

ReversImpl.java

```
import ReverseModule.ReversePOA;
import java.lang.String;
class ReversImpl extends ReversePOA
```

```

{
    ReverseImpl()
    {
        super();
        System.out.println("Reverse Object Created");
    }
    public String reverse_string(String name)
    {
        StringBuffer str=new StringBuffer(name);
        str.reverse();
        return ("Server Send "+str);
    }
}

```

ReverseModule.idl

```

module ReverseModule
{
    interface Reverse
    {
        string reverse_string(in string str);
    };
};

```

ReverseServer.java

```

import ReverseModule.*;
import org.omg.CosNaming.*;
import org.omg.CosNaming.NamingContextPackage.*;
import org.omg.CORBA.*;
import org.omg.PortableServer.*;
class ReverseServer
{
    public static void main(String[] args)
    {
        try
        { // initialize the ORB
            org.omg.CORBA. ORB orb = org.omg.CORBA.ORB.init(args, null);
            // initialize the BOA/POA
            POA rootPOA = POAHelper.narrow(orb.resolve_initial_references("RootPOA"));
            rootPOA.the_POAManager().activate();
            // creating the calculator object
            ReverseImpl rvr = new ReverseImpl();
            // get the object reference from the servant class
            org.omg.CORBA.Object ref = rootPOA.servant_to_reference(rvr);
            System.out.println("Step1");
            Reverse h_ref = ReverseModule.ReverseHelper.narrow(ref);
            System.out.println("Step2");
            org.omg.CORBA.Object objRef = orb.resolve_initial_references("NameService");

```

```

        System.out.println("Step3");
        NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);
        System.out.println("Step4");
        String name = "Reverse";
        NameComponent path[] = ncRef.to_name(name);
        ncRef.rebind(path,h_ref);
        System.out.println("Reverse Server reading and waiting....");
        orb.run();
    }
    catch (Exception e)
    {
        e.printStackTrace();
    }
}
}
}

```

Output:

Terminal 1

```

asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ idlj -fall ReverseModule.idl
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ javac *.java ReverseModule/*.java
ReverseModule/_ReverseStub.java:46: warning: IORCheckImpl is internal proprietary API and may be removed in a future release
    com.sun.corba.se.impl.orbutil.IORCheckImpl.check(str, "ReverseModule._ReverseStub");
                                   ^
Note: ReverseModule/ReversePOA.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.
1 warning
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ orbd -ORBInitialPort 1056&
[1] 63
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ java ReverseServer -ORBInitialPort 1056&
[2] 86
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ Reverse Object Created
Step1
Step2
Step3
Step4
Reverse Server reading and waiting....
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ 

```

Terminal 2

```

asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ java ReverseClient -ORBInitialPort 1056 -ORBInitialHost localhost
Enter String=
abcdefg
Server Send gfedcba
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign2$ 

```