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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

```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 ReverseImpl=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";
        ReverseImpl = 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 = ReverseImpl.reverse_string(str);
        System.out.println(tempStr);
        }
        catch (Exception e)
        {
        e.printStackTrace();
        }
    }
}
```

ReverseImpl.java

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

```java
{
   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

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

ReverseServer.java

```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");
```

```java
        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

Terminal 2