EchoApp.idl:

```
module EchoApp {
    interface Echo {
        string echoString();
    };
};
```

EchoServer.java:

```java
import EchoApp.EchoPOA;

public class EchoServer extends EchoPOA {
    @Override
    public String echoString() {
        return "Hello World!!!!!!!";
    }
}
```
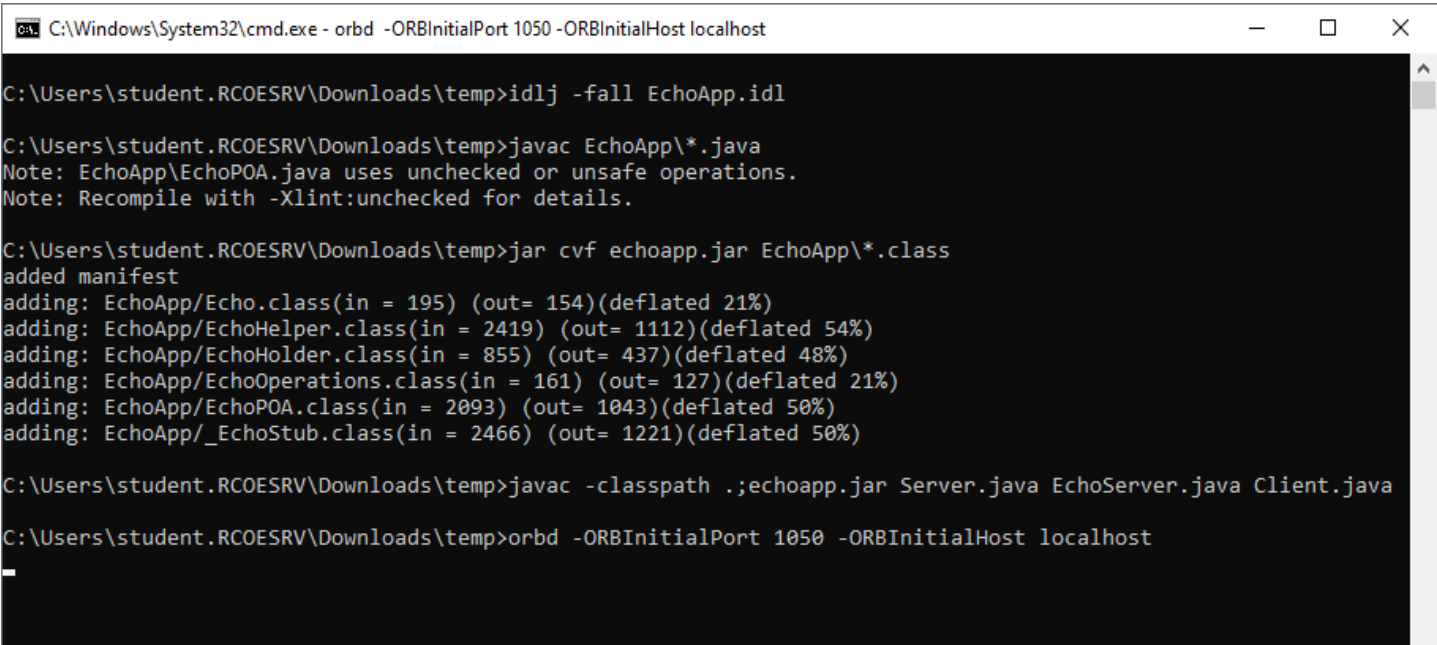
Server.java:

```java
import EchoApp.Echo;
import EchoApp.EchoHelper;
import org.omg.CORBA.ORB;
import org.omg.CosNaming.NameComponent;
import org.omg.CosNaming.NamingContextExt;
import org.omg.CosNaming.NamingContextExtHelper;
import org.omg.PortableServer.POA;
import org.omg.PortableServer.POAHelper;
public class Server {
    public static void main(String args[]) {
        try{
            // create and initialize the ORB
            ORB orb = ORB.init(args, null);
            POA rootpoa =
POAHelper.narrow(orb.resolve_initial_references("RootPOA"));
            rootpoa.the_POAManager().activate();
            EchoServer server = new EchoServer();
            org.omg.CORBA.Object ref = rootpoa.servant_to_reference(server);
            Echo href = EchoHelper.narrow(ref);
            org.omg.CORBA.Object objRef =
orb.resolve_initial_references("NameService");
            NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);
            NameComponent path[] = ncRef.to_name( "ECHO-SERVER" );
            ncRef.rebind(path, href);
            System.out.println("Server ready and waiting ...");
            // wait for invocations from clients
            orb.run();
        }
        catch (Exception e) {
            System.err.println("ERROR: " + e);
            e.printStackTrace(System.out);
        }
        System.out.println("Exiting ...");
    }
}
```

Client.java:

```java
import EchoApp.Echo;
import EchoApp.EchoHelper;
import org.omg.CORBA.ORB;
import org.omg.CORBA.ORBPackage.InvalidName;
import org.omg.CosNaming.NamingContextExt;
import org.omg.CosNaming.NamingContextExtHelper;
import org.omg.CosNaming.NamingContextPackage.CannotProceed;
import org.omg.CosNaming.NamingContextPackage.NotFound;

public class Client {
    public static void main(String args[]) {
        try {
            // create and initialize the ORB
            ORB orb = ORB.init(args, null);
            org.omg.CORBA.Object objRef =
orb.resolve_initial_references("NameService");
            NamingContextExt ncRef = NamingContextExtHelper.narrow(objRef);
            Echo href = EchoHelper.narrow(ncRef.resolve_str("ECHO-SERVER"));
            String hello = href.echoString();
            System.out.println(hello);
        } catch (InvalidName invalidName) {
            invalidName.printStackTrace();
        } catch (CannotProceed cannotProceed) {
            cannotProceed.printStackTrace();
        }catch (org.omg.CosNaming.NamingContextPackage.InvalidName invalidName) {
            invalidName.printStackTrace();
        } catch (NotFound notFound) {
            notFound.printStackTrace();
        }
    }
}
```



```
C:\Windows\System32\cmd.exe - orbd  -ORBInitialPort 1050 -ORBInitialHost localhost

C:\Users\student.RCOESRV\Downloads\temp>idlj -fall EchoApp.idl

C:\Users\student.RCOESRV\Downloads\temp>javac EchoApp\*.java
Note: EchoApp\EchoPOA.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

C:\Users\student.RCOESRV\Downloads\temp>jar cvf echoapp.jar EchoApp\*.class
added manifest
adding: EchoApp/Echo.class(in = 195) (out= 154)(deflated 21%)
adding: EchoApp/EchoHelper.class(in = 2419) (out= 1112)(deflated 54%)
adding: EchoApp/EchoHolder.class(in = 855) (out= 437)(deflated 48%)
adding: EchoApp/EchoOperations.class(in = 161) (out= 127)(deflated 21%)
adding: EchoApp/EchoPOA.class(in = 2093) (out= 1043)(deflated 50%)
adding: EchoApp/_EchoStub.class(in = 2466) (out= 1221)(deflated 50%)

C:\Users\student.RCOESRV\Downloads\temp>javac -classpath .;echoapp.jar Server.java EchoServer.java Client.java

C:\Users\student.RCOESRV\Downloads\temp>orbd -ORBInitialPort 1050 -ORBInitialHost localhost
```

```
C:\Windows\System32\cmd.exe - java Server -ORBInitialPort 1050 -ORBInitialHo...          —    □    X

Microsoft Windows [Version 10.0.19045.5487]
(c) Microsoft Corporation. All rights reserved.

C:\Users\student.RCOESRV\Downloads\temp>java Server -ORBInitialPort 1050
-ORBInitialHost localhost
Server ready and waiting ...
```

```
C:\Windows\System32\cmd.exe                                               —    □    X

Microsoft Windows [Version 10.0.19045.5487]
(c) Microsoft Corporation. All rights reserved.

C:\Users\student.RCOESRV\Downloads\temp>java Client -ORBInitialPort 1050
 -ORBInitialHost localhost
Hello World!!!!!!!

C:\Users\student.RCOESRV\Downloads\temp>
```