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Roll No: 47006 Class: BE-IT-B

Subject: Distributed Systems

Assignment No. 1

Problem Statement: Implement multi-threaded client/server Process communication using RMI.

Code:

AddClient.java:

```
import java.rmi.*;
public class AddClient {
    public static void main(String args[]) {
        try {
            // Get reference to the remote object
            String addServerURL = "rmi://" + args[0] + "/AddServer";
            AddServerIntf addServerIntf =
            (AddServerIntf) Naming.lookup(addServerURL);
            System.out.println("The first number is: " + args[1]);
            double d1 = Double.parseDouble(args[1]);
            System.out.println("The second number is: " + args[2]);
            double d2 = Double.parseDouble(args[2]);
            // Invoke remote method to add numbers
            System.out.println("The sum is: " + addServerIntf.add(d1, d2));
        }
        catch (Exception e) { System.out.println("Exception: " + e);
        }}}}
```

AddServer.java:

```
import java.rmi.*;
public class AddServer {
    public static void main(String args[]) {
        try {
            AddServerImpl addServerImpl = new AddServerImpl();
            //bind the remote object
            Naming.rebind("AddServer", addServerImpl);
        }
        catch (Exception e) {
            System.out.println("Exception: " + e);
        }}}}
```

AddServerImpl.java:

```
import java.rmi.*;
import java.rmi.server.*;
//class that implements the remote interface
```

```

public class AddServerImpl extends UnicastRemoteObject
implements AddServerIntf {
public AddServerImpl() throws RemoteException {
}
//implement method declared in the interface
public double add(double d1, double d2) throws RemoteException {
return d1 + d2; }
}

```

AddServerIntf.java:

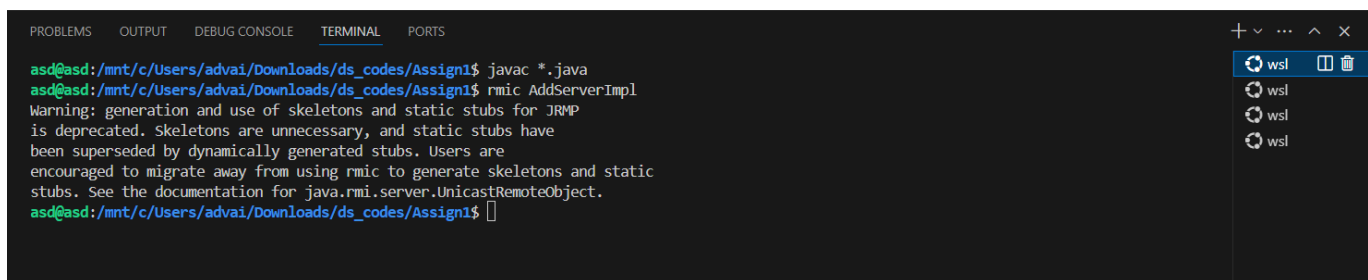
```

import java.rmi.*;
public interface AddServerIntf extends Remote {
//method declaration
double add(double d1, double d2) throws RemoteException;
}

```

Output:

Terminal 1



```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$ javac *.java
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$ rmic AddServerImpl
Warning: generation and use of skeletons and static stubs for JRMP
is deprecated. Skeletons are unnecessary, and static stubs have
been superseded by dynamically generated stubs. Users are
encouraged to migrate away from using rmic to generate skeletons and static
stubs. See the documentation for java.rmi.server.UnicastRemoteObject.
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$

```

Terminal 2

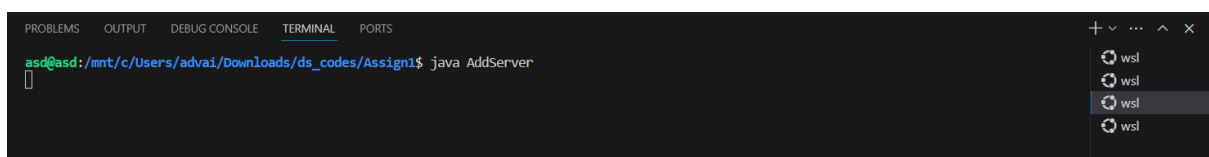


```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$ rmiregistry

```

Terminal 3

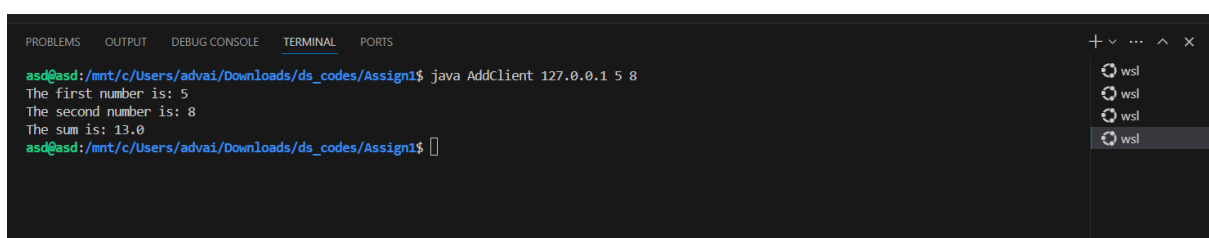


```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$ java AddServer

```

Terminal 4



```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$ java AddClient 127.0.0.1 5 8
The first number is: 5
The second number is: 8
The sum is: 13.0
asd@asd:/mnt/c/Users/advai/Downloads/ds_codes/Assign1$

```