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**Roll No :** 531

**Assign No :** 01 (RMI )

**CODE :**

**SumServerInterface.java**

```
import java.rmi.Remote;  
  
import java.rmi.RemoteException;  
  
public interface SumServerInterface extends Remote {  
  
    int add(int a, int b) throws RemoteException;  
  
    int subtract(int a, int b) throws RemoteException;  
  
    int multiply(int a, int b) throws RemoteException;  
  
    int divide(int a, int b) throws RemoteException;  
  
}
```

**SumServerImpl.java :**

```
import java.rmi.RemoteException;  
  
import java.rmi.server.UnicastRemoteObject;  
  
  
public class SumServerImpl extends UnicastRemoteObject implements SumServerInterface {  
  
    public SumServerImpl() throws RemoteException {  
  
        super();  
  
    }  
  
}
```

@Override

```
public int add(int a, int b) throws RemoteException {  
    return a + b;  
}
```

@Override

```
public int subtract(int a, int b) throws RemoteException {  
    return a - b;  
}
```

@Override

```
public int multiply(int a, int b) throws RemoteException {  
    return a * b;  
}
```

@Override

```
public int divide(int a, int b) throws RemoteException {  
    if (b == 0) {  
        throw new RemoteException("Cannot divide by zero!");  
    }  
    return a / b;  
}  
}
```

### **SumServer.java :**

```
import java.rmi.Naming;
```

```

import java.rmi.RemoteException;

import java.rmi.registry.LocateRegistry;


public class SumServer {

    public static void main(String[] args) {

        try {

            SumServerImpl obj = new SumServerImpl();

            LocateRegistry.createRegistry(1099); // default RMI port

            Naming.rebind("rmi://localhost/SumServer", obj);

            System.out.println("Server is running...");

        } catch (Exception e) {

            System.err.println("Server exception: " + e.toString());

            e.printStackTrace();

        }

    }

}

```

#### **SumClient.java :**

```

import java.rmi.Naming;

import java.util.Scanner;


public class SumClient {

    public static void main(String[] args) {

        try {

```

```
SumServerInterface obj = (SumServerInterface)
Naming.lookup("rmi://localhost/SumServer");

Scanner scanner = new Scanner(System.in);


System.out.println("Enter first number: ");

int num1 = scanner.nextInt();

System.out.println("Enter second number: ");

int num2 = scanner.nextInt();

System.out.println("1. Add");

System.out.println("2. Subtract");

System.out.println("3. Multiply");

System.out.println("4. Divide");

System.out.println("5. Perform all operations");

System.out.println("Enter your choice: ");

int choice = scanner.nextInt();

switch (choice) {

    case 1:

        int addResult = obj.add(num1, num2);

        System.out.println("Addition Result: " + addResult);

        break;

    case 2:

        int subResult = obj.subtract(num1, num2);

        System.out.println("Subtraction Result: " + subResult);

        break;

    case 3:

        int mulResult = obj.multiply(num1, num2);
```

```
System.out.println("Multiplication Result: " + mulResult);
```

```
break;
```

case 4:

```
try {
```

```
    int divResult = obj.divide(num1, num2);
```

```
    System.out.println("Division Result: " + divResult);
```

```
} catch (Exception e) {
```

```
    System.out.println("Error: " + e.getMessage());
```

```
}
```

```
break;
```

case 5:

```
int add = obj.add(num1, num2);
```

```
System.out.println("Addition Result: " + add);
```

```
int sub = obj.subtract(num1, num2);
```

```
System.out.println("Subtraction Result: " + sub);
```

```
int mul = obj.multiply(num1, num2);
```

```
System.out.println("Multiplication Result: " + mul);
```

```
try {
```

```
    int div = obj.divide(num1, num2);
```

```
    System.out.println("Division Result: " + div);
```

```
} catch (Exception e) {
```

```
    System.out.println("Error: " + e.getMessage());
```

```

        }

        break;

default:

        System.out.println("Invalid choice!");

    }

    scanner.close();

} catch (Exception e) {

    System.err.println("Client exception: " + e.toString());

    e.printStackTrace();

}

}

}

```

### **OUTPUT :**

**1) javac SumServerInterface.java SumServerImpl.java SumServer.java SumClient.java**

**2) rmiregistry &**

[1] 12345

**3) java SumServer &**

Server is running...

**4) java SumClient**

Enter first number:

10

Enter second number:

5

1. Add

2. Subtract

3. Multiply

4. Divide

5. Perform all operations

Enter your choice:

5

Addition Result: 15

Subtraction Result: 5

Multiplication Result: 50

Division Result: 2