

# CSE3011 NETWORK PROGRAMMING

## LAB EXPERIMENT 3

NAME – B PRATYUSH

REGISTRATION NUMBER – 19BCN7114

LAB SLOT – L43+L44

FACULTY – PROF. MUNEESWARI

**Experiment Description: Remote Method Invocation (RMI)**

### **Codes:**

#### **RMIServInt.java (Server Interface Class)**

```
import java.rmi.*;
import java.rmi.server.*;
public interface RMIServInt extends Remote{
    public double sum(double n1, double n2) throws RemoteException;
}
```

#### **RMIServImpl.java (Server Implementation Class)**

```
import java.rmi.*;
import java.rmi.server.*;
public class RMIServImpl extends UnicastRemoteObject implements
RMIServInt{
    public RMIServImpl() throws RemoteException
    {
```

```
    super();  
}  
public double sum(double n1, double n2) throws RemoteException{  
    return n1+n2;  
}  
}
```

### **RMI Server.java (Server Class)**

```
import java.rmi.*;  
import java.rmi.server.*;  
import java.rmi.registry.*;  
public class RMIServer extends RMIServImpl{  
    public RMIServer() throws RemoteException  
    {  
  
    }  
    public static void main(String args[]) throws RemoteException{  
  
    try  
    {  
        Registry registry= LocateRegistry.createRegistry(5000);  
        RMIServImpl serv = new RMIServImpl();  
        registry.rebind("rmiServer",serv);  
        System.out.println("SERVER operation completed!");  
    }  
}
```

```

    }
    catch(Exception e)
    {
        System.out.println(e);
    }

}
}

```

### **RMIClient.java (Client class)**

```

import java.rmi.server.*;
import java.rmi.registry.*;

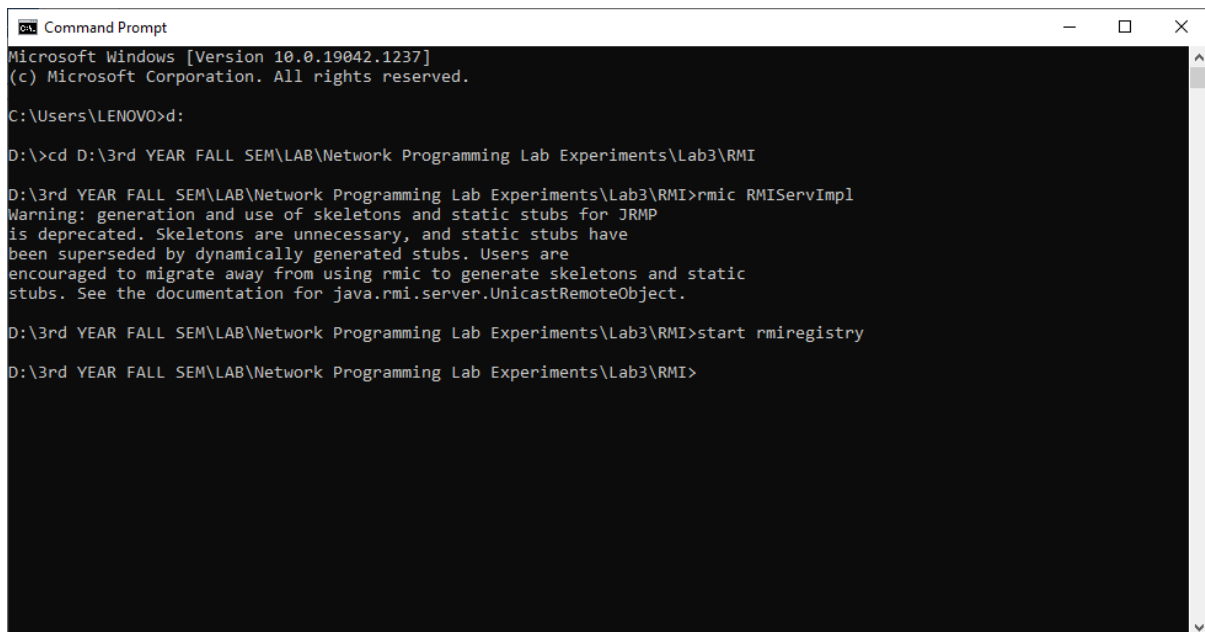
public class RMIClient{
    public static void main(String[]args) throws RemoteException{
        try
        {
            double n1 = Double.parseDouble(args[0]);
            double n2 = Double.parseDouble(args[1]);
            Registry registry = LocateRegistry.getRegistry("127.0.0.1",5000);
            RMIServInt a = (RMIServInt)registry.lookup("rmiServer");
            System.out.println("First number value: "+n1);
            System.out.println("Second number value: "+n2);
            System.out.println("Sum of the two numbers:\t"+a.sum(n1,n2));
        }
    }
}

```

```
        catch(Exception e)
        {
            System.out.println(e);
        }
    }
}
```

## Output:

- 1) Generating stub using rmic command on server implementation class
- 2) Then starting the rmi registry using start rmiregistry command



```
Command Prompt
Microsoft Windows [Version 10.0.19042.1237]
(c) Microsoft Corporation. All rights reserved.

C:\Users\LENOVO>d:

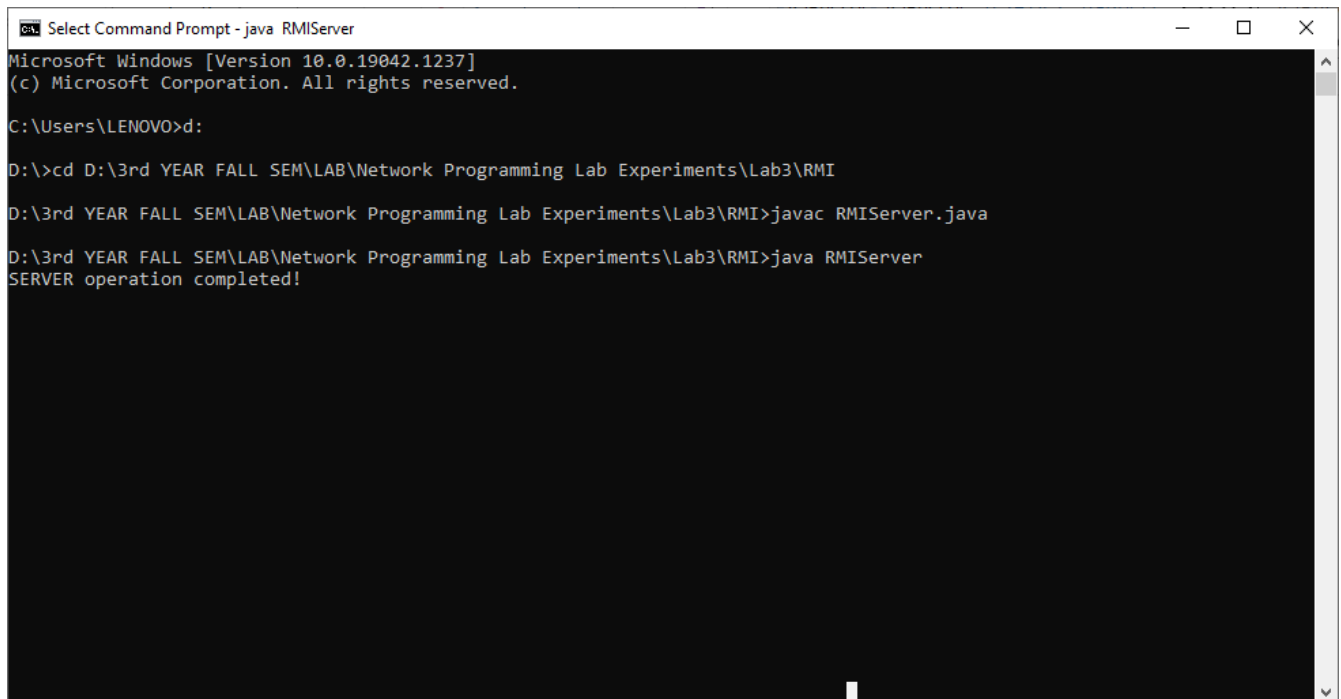
D:\>cd D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>rmic RMIServImpl
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.

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>start rmiregistry

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>
```

### 3) Compile and execute the server class in another command prompt



```
Microsoft Windows [Version 10.0.19042.1237]
(c) Microsoft Corporation. All rights reserved.

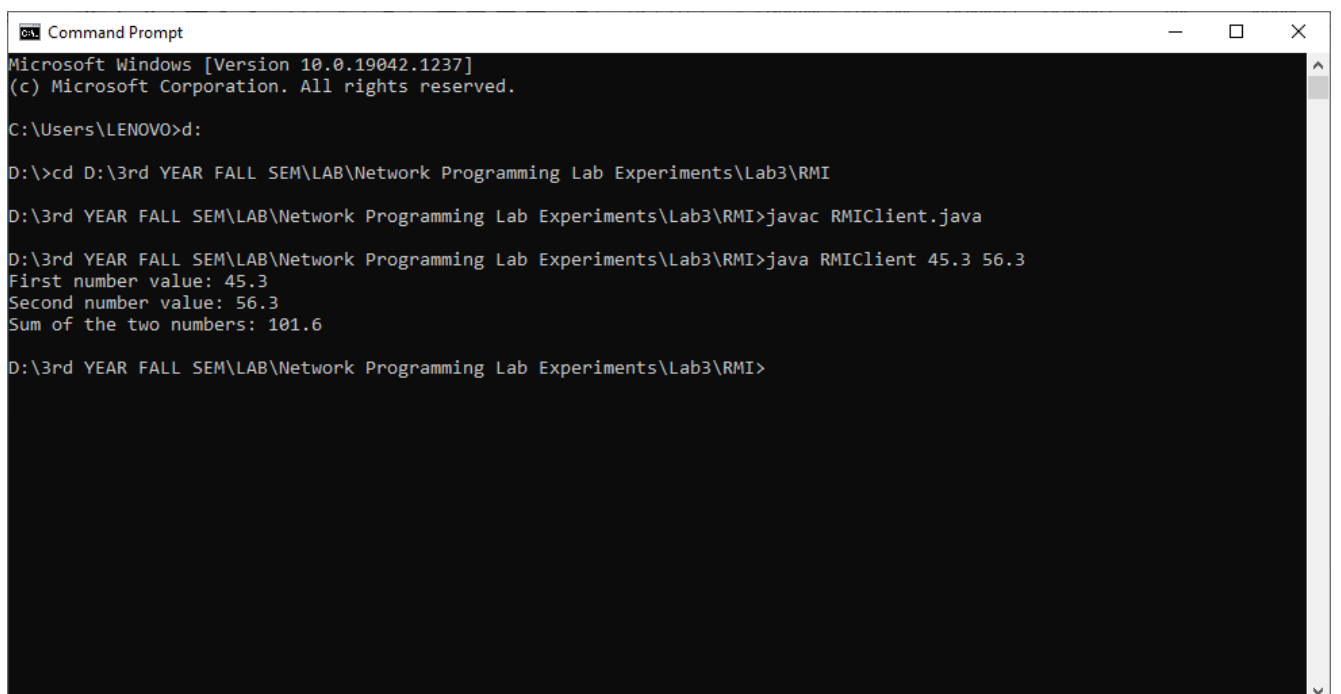
C:\Users\LENOVO>d:

D:\>cd D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>javac RMIServer.java

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>java RMIServer
SERVER operation completed!
```

### 4) Then compile and execute the Client class in another command prompt



```
Microsoft Windows [Version 10.0.19042.1237]
(c) Microsoft Corporation. All rights reserved.

C:\Users\LENOVO>d:

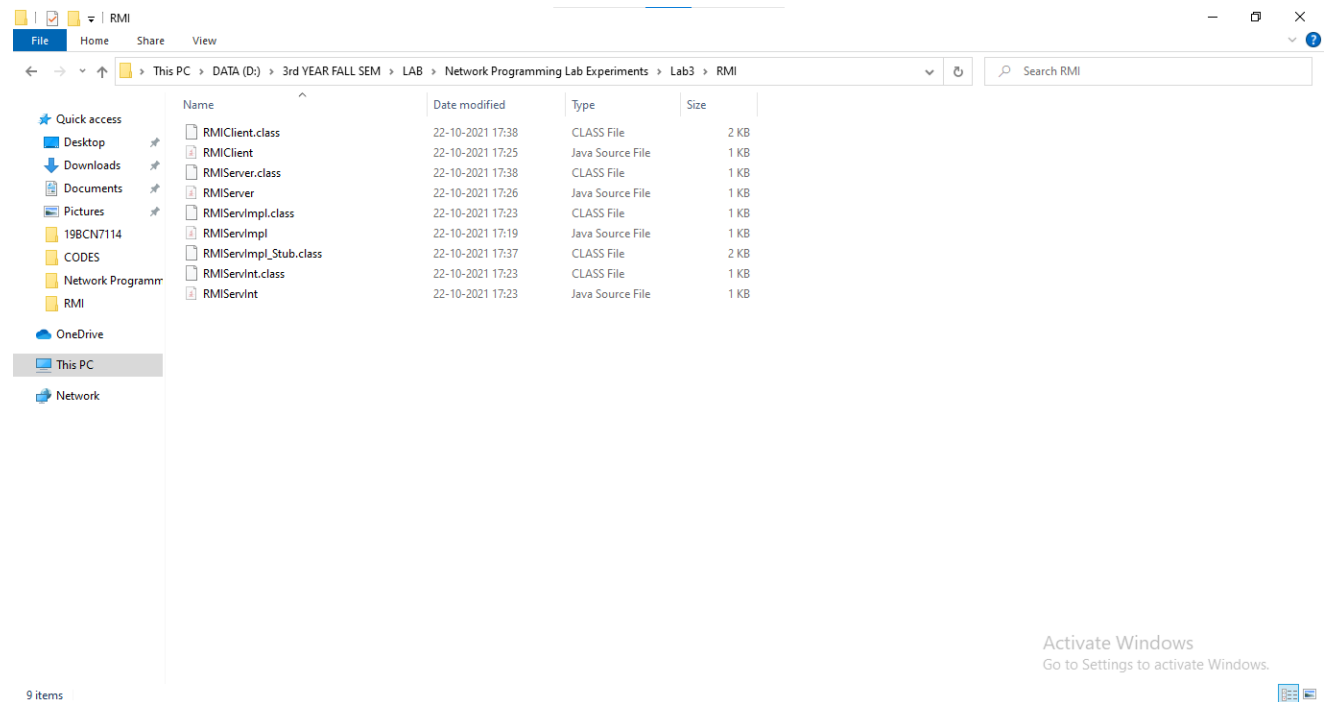
D:\>cd D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>javac RMIClient.java

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>java RMIClient 45.3 56.3
First number value: 45.3
Second number value: 56.3
Sum of the two numbers: 101.6

D:\3rd YEAR FALL SEM\LAB\Network Programming Lab Experiments\Lab3\RMI>
```

## 5) Stub class is present in folder or not.



**RMIServImpl\_Stub.class is the stub class.**