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Third Year B. Tech., Sem VI 2021-22

Cloud Computing

Assignment submission

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Batch: T2

Assignment: 1

Title of assignment: Implementation of RMI (Remote Method Invocation) Frameworks

1. Write a program in java for implementation of RMI Framework?

Ans:

Creating Interface:

```
//define remote interface

import java.rmi.*;

public interface AddRem extends Remote
{
    public int addNum(int a,int b) throws RemoteException;
}
```

Implementation of Interface:

```
//implementation of interface

import java.rmi.*;
import java.rmi.server.UnicastRemoteObject;

public class AddRemImpl extends UnicastRemoteObject
implements AddRem
{
    public AddRemImpl() throws RemoteException{}
    public int addNum(int a,int b)
    {
        return a+b;
    }
}
```

Creating Server Side:

```
//server program

import java.rmi.*;
import java.net.*;
import java.io.*;
import java.util.*;

public class AddServer
{
    public static void main(String[] args) {
        try
        {
            AddRemImpl locobj = new AddRemImpl();
            Naming.rebind("rmi:///AddRem",locobj);
        }
        catch(RemoteException re)
```

```

        {
            re.printStackTrace();
        }
        catch(MalformedURLException mfe)
        {
            mfe.printStackTrace();
        }
    }
}

```

Creating Client Side:

```

//client program

import java.rmi.*;
import java.net.*;
import java.io.*;
import java.util.*;

public class AddClient
{
    public static void main(String args[])
    {
        String host="localhost";
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the 1st Number");
        int a = sc.nextInt();
        System.out.println("Enter the 2nd Number");
        int b = sc.nextInt();
        try
        {
            AddRem remobj =
(AddRem)Naming.lookup("rmi://" + host + "/AddRem");
            System.out.println(remobj.addNum(a,b));
        }
    }
}

```

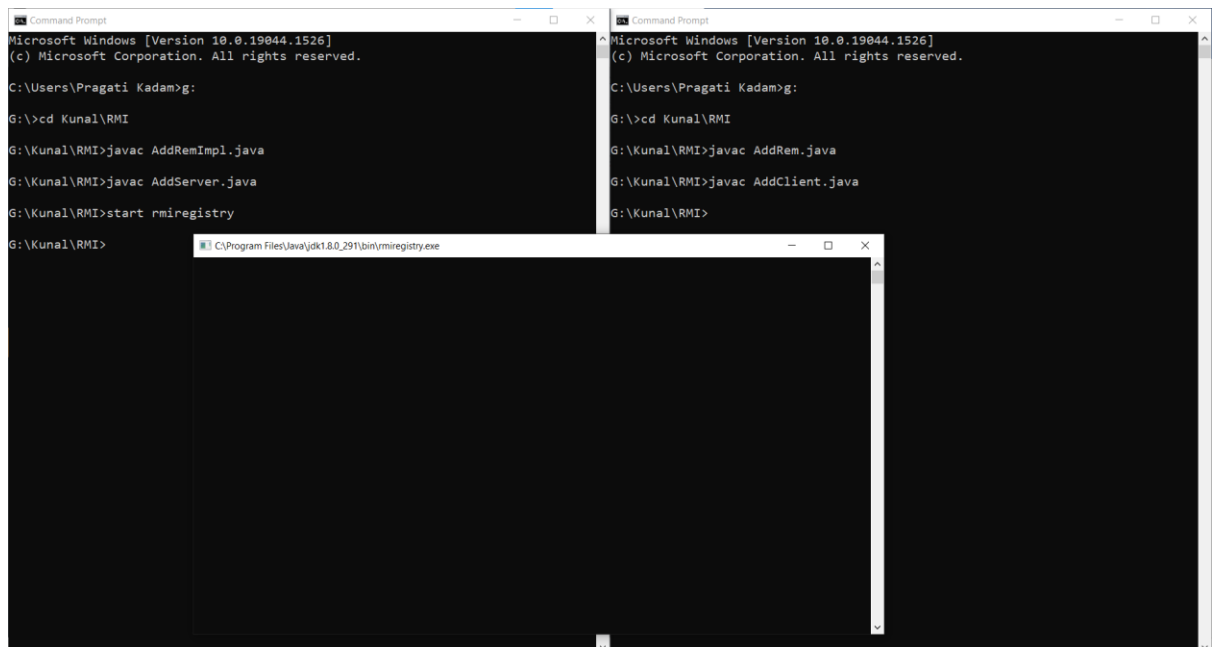
```

        catch(RemoteException re)
        {
            re.printStackTrace();
        }
        catch(NotBoundException nbe)
        {
            nbe.printStackTrace();
        }
        catch(MalformedURLException mfe)
        {
            mfe.printStackTrace();
        }
    }
}

```

Output:

Executing .java files and Starting rmiregistry



Running AddServer.java

```
Command Prompt - java AddServer
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Pragati Kadam>g:

G:\>cd Kunal\RMI

G:\Kunal\RMI>javac AddRemImpl.java

G:\Kunal\RMI>javac AddServer.java

G:\Kunal\RMI>start rmiregistry

G:\Kunal\RMI>java AddServer
```

Running AddClient.java

```
Command Prompt
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Pragati Kadam>g:

G:\>cd Kunal\RMI

G:\Kunal\RMI>javac AddRem.java

G:\Kunal\RMI>javac AddClient.java

G:\Kunal\RMI>java AddClient
Enter the 1st Number
23
Enter the 2nd Number
56
Addition of Two Number is
79

G:\Kunal\RMI>
```