

201351010

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DC LAB-04

HelloInterface

```
import java.rmi.Remote;

public interface HelloInterface extends Remote {
    public String sayHello(String name)
    // A method which accepts a string.
    // Only the prototype
    throws java.rmi.RemoteException;
}
```

HelloImpl

```
import java.rmi.*;
import java.rmi.server.*;

public class HelloImpl extends UnicastRemoteObject implements
HelloInterface
{
    public HelloImpl() throws RemoteException
    {
        super();
        // Contructor
    }
    public String sayHello(String name) throws RemoteException
    {
        return "Hello World" + name;
        // Prints Hello World "name entered"
    }
}
```

HelloClient

```
import java.io.*;
import java.rmi.*;

public class HelloClient
{
    public static void main(String args[])
    // Main function
    {
        try
        {
            int RMIPort;    // RMI Port number
            String hostName;
            InputStreamReader is = new
InputStreamReader(System.in);
            BufferedReader br = new BufferedReader(is);
            System.out.println("RMI registry host name: ");
            hostName = br.readLine(); // Read hostname
            System.out.println("RMI registry port number: ");
            String portNum = br.readLine();
            RMIPort = Integer.parseInt(portNum);
            String registryUrl = "rmi://" + hostName + ":" + portNum
+ "/hello";

            // Puts the URL of the registry in registryURL
            HelloInterface h =
(HelloInterface)Naming.lookup(registryUrl);
            // Object of HelloInterface looks up the URL in the
registry.

            System.out.println("Searching done");
            String message = h.sayHello(" Aditya Prakash ");
            // Call the function.
            System.out.println("HelloClient: "+ message);
        }
        catch(Exception e)
        {
            System.out.println("Some Error: "+e);
        }
    }
}
```

```
    }  
}
```

HelloServer

```
import java.rmi.*;  
import java.rmi.registry.Registry;  
import java.rmi.registry.LocateRegistry;  
import java.net.*;  
import java.io.*;  
  
public class HelloServer  
{  
    public static void main(String args[])  
    {  
        InputStreamReader is = new InputStreamReader(System.in);  
        BufferedReader br = new BufferedReader(is);  
        String portNum, registryUrl;  
        // String for port number and URL for registry  
        try  
        {  
            System.out.println("Enter RMIregistry port number: ");  
            portNum = (br.readLine()).trim();  
            int RMIPortNum = Integer.parseInt(portNum);  
            startRegistry(RMIPortNum);  
            HelloImpl exportedObj = new HelloImpl();  
            // Object of HelloImpl.  
            registryUrl = "rmi://localhost:" + portNum + "/hello";  
            // Create the registry for URL again.  
            Naming.rebind(registryUrl, exportedObj);  
            // Bind the URL with the object.  
            System.out.print("Server registered. Registry currently  
contains: \n");  
            listRegistry(registryUrl);  
            // List the URL in the registry.  
            System.out.print("Hello Server is ready\n");  
        }  
        catch(Exception re)
```

```

        {
            System.out.println("Exception: "+ re);
        }
    }

```

```

private static void listRegistry(String registryUrl)throws
RemoteException, MalformedURLException
{
    System.out.print("Registry " + registryUrl + "has: \n");
    String [] names = Naming.list(registryUrl);
    for(int i=0;i<names.length; i++)
    {
        System.out.println(names[i]);
    }
}

```

```

private static void startRegistry(int rMIPortNum)throws
RemoteException
{
    // Method to start the Registry.
    try
    {
        Registry registry =
LocateRegistry.getRegistry(rMIPortNum);
        // Object of registry locates.
        registry.list();
    }
    catch(RemoteException e)
    {
        System.out.print("RMI registry cannot be located at: " +
rMIPortNum);
        Registry registry =
LocateRegistry.createRegistry(rMIPortNum);
        System.out.print("RMI registry at port: "+rMIPortNum);
        // Show in case of error.
    }
}
}

```

Terminal

aditya@aditya-Inspiron-N5110:~/sem7/dc/labs/lab4\$ java HelloClient
RMI registry host name:
localhost
RMI registry port number:
9876
Searching done
HelloClient: Hello World Aditya Prakash
aditya@aditya-Inspiron-N5110:~/sem7/dc/labs/lab4\$

Terminal

aditya@aditya-Inspiron-N5110:~/sem7/dc/labs/lab4\$ java HelloServer
Enter RMRegistry port number:
9876
RMI registry cannot be located at: 9876RMI registry at port: 9876Server reg
istered. Registry currently contains:
Registry rmi://localhost:9876/hellohas:
//localhost:9876/hello
Hello Server is ready
□