**Assignment 01:**

**Implement multi-threaded client/server Process communication using RMI.**

**ServerInterface:** package A; import java.rmi.\*; public interface ServerInterface extends Remote { boolean isLeapYear(int year) throws RemoteException;

}

**ServerImplementation:**

package A; import java.rmi.\*;

import java.rmi.server.\*;

public class ServerImplementation extends UnicastRemoteObject implements ServerInterface { public ServerImplementation() throws RemoteException { super();

}

// Leap year logic

public boolean isLeapYear(int year) throws RemoteException { return (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0);

}

}

**Server:** package A;

import java.rmi.\*;

public class Server {

public static void main(String[] args) { try {

ServerImplementation serverImpl = new ServerImplementation();

Naming.*rebind*("LeapYearServer", serverImpl);

System.*out*.println("Server is Ready...");

} catch (Exception e) {

System.*out*.println("Exception occurred at Server! " + e.getMessage());

}

}

}

**Client:** package A; import java.rmi.\*;

import java.util.Scanner;

public class Client { public static void main(String[] args) { Scanner sc = new Scanner(System.*in*); try {

// Connect to the remote server

String serverUrl = "rmi://localhost/LeapYearServer";

ServerInterface serverIntf = (ServerInterface) Naming.*lookup*(serverUrl);

System.*out*.print("Enter a year: "); int year = sc.nextInt();

if (serverIntf.isLeapYear(year)) {

System.*out*.println(year + " is a Leap Year.");

} else {

System.*out*.println(year + " is NOT a Leap Year.");

}

} catch (Exception e) {

System.*out*.println("Exception occurred at Client! " + e.getMessage());

}

}

}

Output:





