**RMI(Remote Method Invocation)**

**Name :**

**Roll No. :**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**//Server Program**

import java.rmi.Naming;

public class RMIServer {

public RMIServer() {

try {

SetInterface s = new SetImplementation();

Naming.rebind("rmi://localhost:1099/SetOperationsService", s);

}

catch (Exception e) {

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

}

}

public static void main(String args[]) {

new RMIServer();

}

}

**//Client Program**

import java.lang.Integer;

import java.rmi.Naming;

import java.util.HashSet;

import java.util.Set;

import java.io.\*;

public class RMIClient {

public static void main(String[] args) {

try{

SetInterface s=(SetInterface) Naming.lookup("rmi://172.16.26.212/SetOperationsService");

Set<Integer> setA = new HashSet<Integer>();

Set<Integer> setB = new HashSet<Integer>();

System.out.println("\n\t Enter the elements of the first set

(\* to end):- ");

BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

String x;

x = br.readLine();

while(!x.equals("\*"))

{

setA.add(Integer.parseInt(x));

x = br.readLine();

}

System.out.println("\n\t Enter the elements of the second set

(\* to end):- ");

x = br.readLine();

while(!x.equals("\*"))

{

setB.add(Integer.parseInt(x));

x = br.readLine();

}

System.out.println("The set A is :- " + setA);

System.out.println("The set B is :- " + setB);

System.out.println("The union of the two sets is :- " + s.union(setA,setB));

System.out.println("The intersection of the two sets is :- " + s.intersection(setA, setB));

System.out.println("The difference of the two sets is :- " + s.difference(setA, setB));

} catch (Exception e) {

e.printStackTrace();

}

}

}

**//Set Interface**

import java.lang.Integer;

import java.rmi.Remote;

import java.rmi.RemoteException;

import java.util.Set;

public interface SetInterface extends Remote{

public Set<Integer> union(Set<Integer> a, Set<Integer> b)

throws RemoteException;

public Set<Integer> intersection(Set<Integer> a, Set<Integer> b)

throws RemoteException;

public Set<Integer> difference(Set<Integer> a, Set<Integer> b)

throws RemoteException;

}

**//Set Implementation**

import java.lang.Integer;

import java.rmi.RemoteException;

import java.util.HashSet;

import java.util.Set;

public class SetImplementation extends

java.rmi.server.UnicastRemoteObject

implements SetInterface {

protected SetImplementation() throws RemoteException {

super();

}

public Set<Integer> union(Set<Integer> a, Set<Integer> b)

throws RemoteException {

Set<Integer> unionSet = new HashSet<Integer>(a);

unionSet.addAll(b);

return unionSet;

}

public Set<Integer> difference(Set<Integer> a, Set<Integer> b) throws RemoteException {

Set<Integer> diffSet = new HashSet<Integer>(a);

diffSet.removeAll(b);

return diffSet;

}

public Set<Integer> intersection(Set<Integer> a, Set<Integer> b)

throws RemoteException {

Set<Integer> interSet = new HashSet<Integer>(a);

interSet.retainAll(b);

return interSet;

}

}

**//Server Output**

C:\Program Files\Java\jdk1.6.0\bin>javac RMIServer.java

C:\Program Files\Java\jdk1.6.0\bin>javac SetInterface.java

C:\Program Files\Java\jdk1.6.0\bin>javac SetImplementation.java

C:\Program Files\Java\jdk1.6.0\bin>rmic SetImplementation

C:\Program Files\Java\jdk1.6.0\bin>start rmiregistry

C:\Program Files\Java\jdk1.6.0\bin>java RMIServer

**//Client Output**

C:\Program Files\Java\jdk1.6.0\bin>javac RMIClient.java

C:\Program Files\Java\jdk1.6.0\bin>javac SetImplementation.java

C:\Program Files\Java\jdk1.6.0\bin>javac SetInterface.java

C:\Program Files\Java\jdk1.6.0\bin>rmic SetImplementation

C:\Program Files\Java\jdk1.6.0\bin>java RMIClient

Enter the elements of the first set (\* to end):-

1

2

3

\*

Enter the elements of the second set (\* to end):-

2

3

4

\*

The set A is :- [1, 2, 3]

The set B is :- [2, 3, 4]

The union of the two sets is :- [1, 2, 3, 4]

The intersection of the two sets is :- [2, 3]

The difference of the two sets is :- [1]