Université Ibn Khaldoun – Tiaret
Faculté des Mathématiques et Et l'Informatique

Département d'Informatique

Module : CAR

Niveau : 1ér année Master GL
Année : 2020-2021

Fiche TP N° 02

Exercice 01

Réécrire le programme de la banque décrit dans la partie cours en appelant un service distant via RMI

Exercice 02

Créer un service distant qui permet de calculer l'addition, la soustraction, la multiplication et la division en utilisant l'approche RMI.

<u>**Solution**</u>

<u>**Exercice 02**</u>

1) L'interface Calculator

```
package serv;
import java.rmi.Remote;
import java.rmi.RemoteException;
public interface Calculator extends Remote{
public long add(long a, long b) throws RemoteException;
public long sub(long a, long b) throws RemoteException;
public long mul(long a, long b) throws RemoteException;
public long div(long a, long b) throws RemoteException; }
```

2) La classe CalculatorImpl implémenté de l'interface Calculator

```
package serv;
import java.rmi.RemoteException;
import java.rmi.server.UnicastRemoteObject;
public class CalculatorImpl extends UnicastRemoteObject implements Calculator {
protected CalculatorImpl() throws RemoteException {super();}
public long add(long a, long b) throws RemoteException { return a + b; }
public long sub(long a, long b) throws RemoteException { return a - b; }
public long mul(long a, long b) throws RemoteException { return a * b; }
public long div(long a, long b) throws RemoteException { return a / b; }}
```

3) La classe CalculatorServer

```
package serv;
import java.rmi.Naming;
import java.rmi.registry.LocateRegistry;
public class CalculatorServer {
public CalculatorServer() {
try {
        LocateRegistry.createRegistry(1099);
        Calculator c = new CalculatorImpl();
        System.out.println(c.toString());
        Naming.rebind("rmi://localhost:1099/Calcul", c);
        } catch (Exception e) {
        System.out.println("Trouble: " + e);}}
public static void main(String args[]) { new CalculatorServer();}}
```

4) La classe CalculatorClient

```
package serv;

import java.net.MalformedURLException;
import java.rmi.Naming;
```

```java
import java.rmi.NotBoundException;
import java.rmi.RemoteException;

public class CalculatorClient {

public static void main(String[] args) {
        try {
Calculator c = (Calculator)Naming.lookup("rmi://localhost:1099/Calcul");
System.out.println(c.sub(4, 3));
System.out.println(c.add(4, 5));
System.out.println(c.mul(3, 6));
System.out.println(c.div(9, 3));
   } catch (MalformedURLException murle) {
System.out.println("java.net.MalformedURLException" + murle);
      } catch (RemoteException re) {
System.out.println("java.rmi.RemoteException" + re);
   } catch (NotBoundException nbe) {
System.out.println("java.rmi.NotBoundException" + nbe);
                } catch (java.lang.ArithmeticException ae)
{System.out.println("java.lang.ArithmeticException" + ae); }}}
```