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.

#### **Solution**

#### Exercice 02

## 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) <u>La classe CalculatorImpl implémenté de l'interface Calculator</u>

```
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) <u>La classe CalculatorServer</u>

## 4) La classe CalculatorClient

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

```
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); }}
```