M’sila University, Department of Computer Science,

ISIL

COURSE: DISTRIBUTED INFORMATION SYSTEMS **DR. R. BENTRCIA**

TP 2: Distributed Information Systems

Required software:

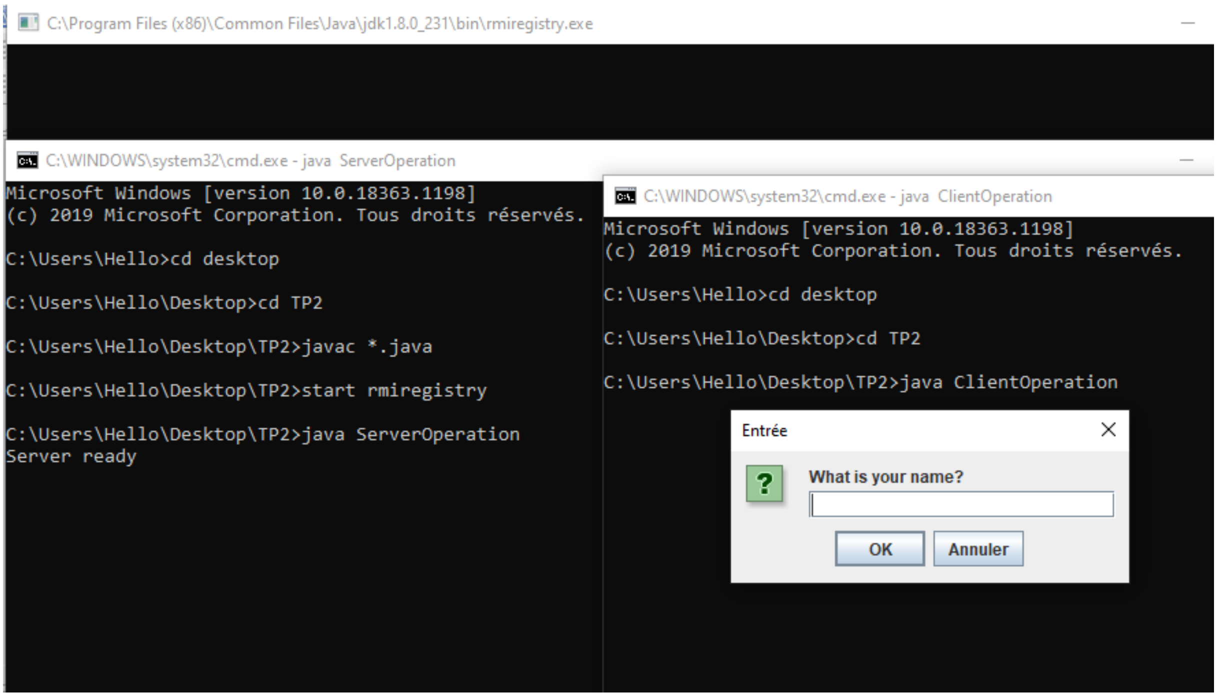
- Java Software Development Kit (jdk 1.8 or later)
- Java editor such as JCreator

Exercise 1:

Implement a java RMI application where the client (user) enters his name using an input dialog box. Then, the server will show the name of the client with a greeting.

1. In your desktop, create a folder TP2.
2. Open your editor.
3. Design your remote interface **RMIInterface** where you declare the remote method helloTo(name).
4. Save the interface in TP2 as RMIInterface.java and compile.
5. Implement the server application **ServerOperation** by following these steps:
    a. Define the constructor.
    b. Implement the remote method helloTo(name) which takes the client name as an input and returns the message "Server says hello to " + name.
    c. Create the main() method where you bind a remote object to a name in the rmiregistry.
6. Save in TP2 as ServerOperation.java and compile.
7. Implement the client application **ClientOperation** by following these steps:
    a. Ask the user to enter his name through an input dialog box.
    b. Invoke the remote method helloTo(name).
8. Save in TP2 as ClientOperation.java and compile.
9. To run the application:
    a. Open a command window and type cd desktop then press enter.
    b. Type cd TP2 then press enter.
    c. To compile the files type javac *.java then press enter.
    d. Type start rmiregistry then press enter.
    e. To run the server application type java ServerOperation then press enter.
    f. Open a new command window and repeat the first two steps.
    g. To run the client application type java ClientOperation then press enter.

Output :


C:\Program Files (x86)\Common Files\Java\jdk1.8.0_231\bin\rmiregistry.exe
C:\WINDOWS\system32\cmd.exe - java ServerOperation
C:\WINDOWS\system32\cmd.exe - java ClientOperation
Entrée
OK
Annuler

```
Microsoft Windows [version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. Tous droits réservés.

C:\Users\Hello>cd desktop

C:\Users\Hello\Desktop>cd TP2

C:\Users\Hello\Desktop\TP2>javac *.java

C:\Users\Hello\Desktop\TP2>start rmiregistry

C:\Users\Hello\Desktop\TP2>java ServerOperation
Server ready
```

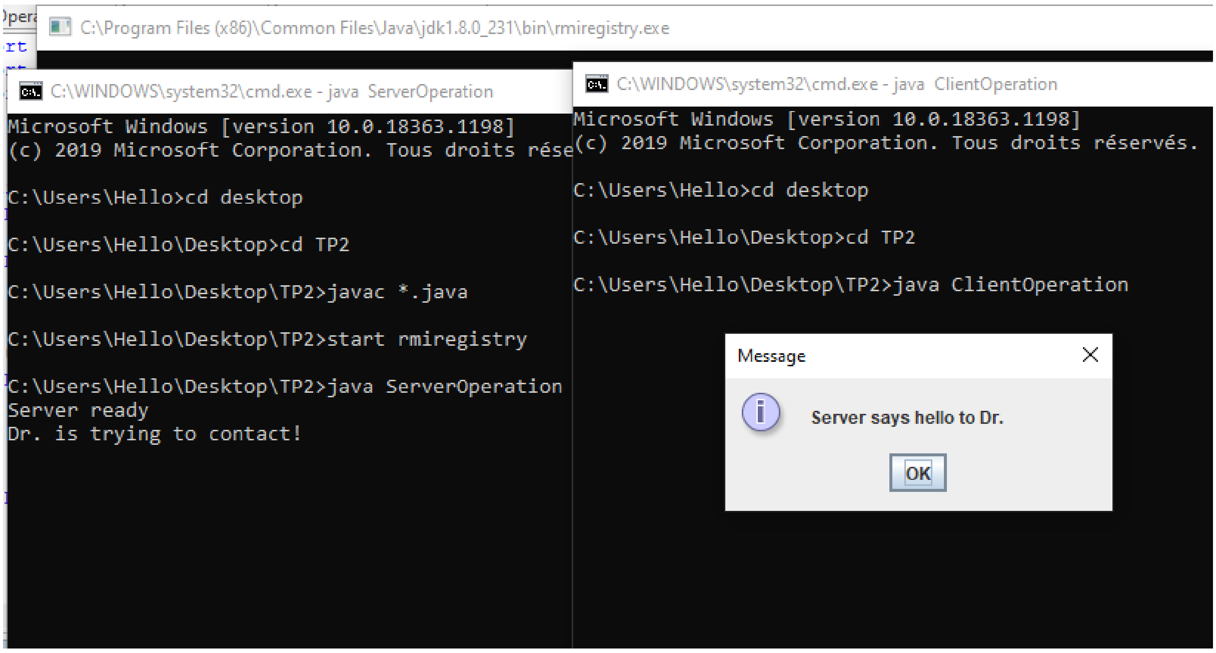
```
Microsoft Windows [version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. Tous droits réservés.

C:\Users\Hello>cd desktop

C:\Users\Hello\Desktop>cd TP2

C:\Users\Hello\Desktop\TP2>java ClientOperation
```

What is your name?


C:\Program Files (x86)\Common Files\Java\jdk1.8.0_231\bin\rmiregistry.exe
C:\WINDOWS\system32\cmd.exe - java ServerOperation
C:\WINDOWS\system32\cmd.exe - java ClientOperation
Message
OK

```
Microsoft Windows [version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. Tous droits rése

C:\Users\Hello>cd desktop

C:\Users\Hello\Desktop>cd TP2

C:\Users\Hello\Desktop\TP2>javac *.java

C:\Users\Hello\Desktop\TP2>start rmiregistry

C:\Users\Hello\Desktop\TP2>java ServerOperation
Server ready
Dr. is trying to contact!
```

```
Microsoft Windows [version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. Tous droits réservés.

C:\Users\Hello>cd desktop

C:\Users\Hello\Desktop>cd TP2

C:\Users\Hello\Desktop\TP2>java ClientOperation
```

Server says hello to Dr.

Exercise 2:

Implement a java RMI application which adds two numbers x and y.

1. The client side **MyClient** declares the initial values of x and y and invokes a remote method add (x, y).
2. The server side **MyServer** implements the remote method which performs the addition operation and returns the result in order to be displayed by the client.
3. Follow the same steps explained previously in exercise 1 to implement and run this application.