CENG 443 – Object-Oriented Programming Languages and Systems

Spring 2018 – Homework 3

Remote Database Access Through RMI

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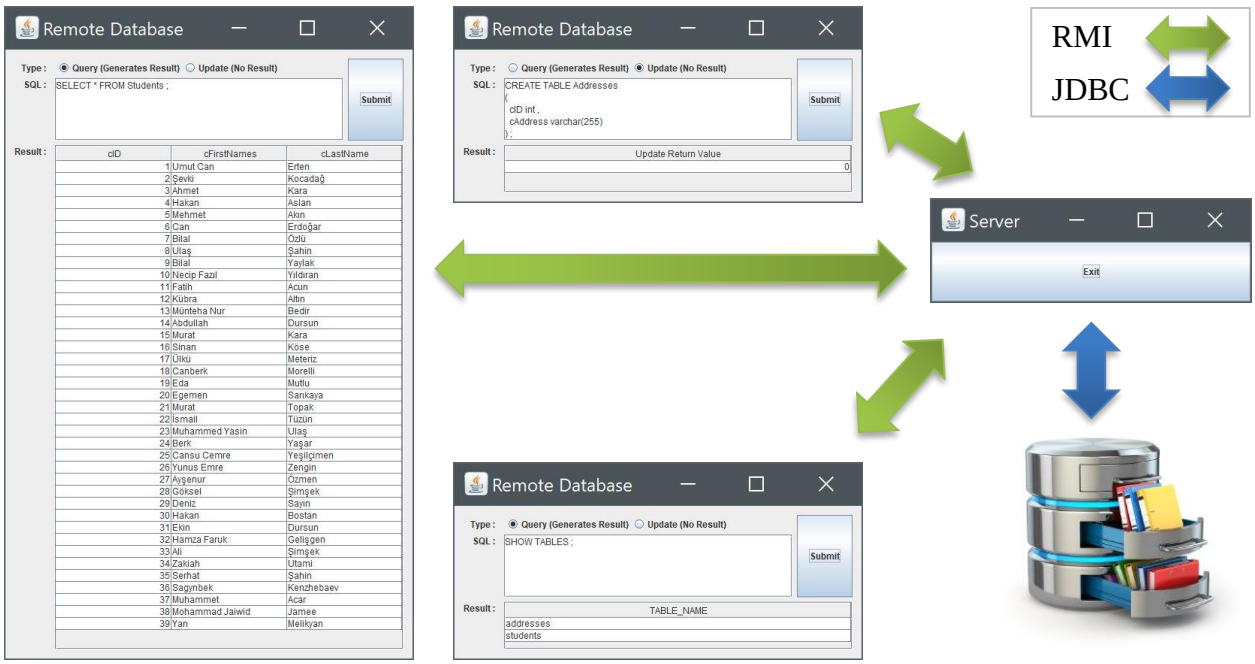
Feedback : Between June 4th and June 6th, 2018
Due date : June 7th, 2018 (Submission through COW by 23:55)



In this homework, we will build an ***RMI Server*** and an ***RMI Client*** in order to accomplish remote database access through ***RMI***. The server will have access to a relational database through ***JDBC***, and it will serve one or more clients by receiving SQL queries (or updates) from the client(s), passing them to the database, fetching the results, and returning the results back to the client(s). The client(s) get user queries (or updates) through a GUI, get them processed by the server, and then display the result(s).

You are provided with stub code which has all GUI implementations done for you (both client and server), so you will just need to focus on ***RMI*** and ***JDBC*** implementations in this homework assignment. In order to fully implement the system, you just need to complete the parts marked with the word **TODO** in 5 (out of 6) source files that are in the homework bundle. You also don't need to handle exceptions in this homework assignment (you may just catch and print any checked exceptions that you are forced to handle by the Java compiler). Note that for this assignment (and usually for all 3rd homework assignments of the CENG 443 course) the amount of required coding is very few, and the focus is on building a ***distributed system*** with ***multiple technologies*** working together in harmony.

What to submit? (Use ***only ASCII characters*** when naming all of your files and folders)

1. The 5 java files that need to be completed by you (in a directory named "***Source***").
2. Optionally, any documentation that you would like to add (in a directory named "***Docs***").

There is no need to submit the ***RMIInterface.java*** file that is already fully implemented (we have a copy of it). Just submit the 5 java files mentioned above. We should be able to compile and run your code simply by executing a sequence of commands roughly similar to the following:

```
C:\...\Source>  javac  *.java                                  ( Compile server and client )
C:\...\Source>  mysql.exe                                      ( Start some MySQL database )
C:\...\Source>  apache.exe                                     ( Start your choice of codebase )
C:\...\Source>  rmiregistry.exe                                ( Start RMI registry )
C:\...\Source>  java  RMIServer  <optional parameters>         ( Start RMI server )
C:\...\Source>  java  RMIClient  <optional parameters>         ( Start RMI client(s) )
```

[Note that we will run both the server and the client(s) on the same host when evaluating your homework assignment solutions, therefore, starting a codebase is usually not necessary.]

Zip the 2 directories above together, give the name <ID>_<FullName>.zip to your zip file (tar also works, but I prefer Windows zip format if possible), and submit it through COW. For example:

e1234567_SelimTemizer.zip

There are a number of design decisions and opportunities for creative extensions that are deliberately left open-ended in this homework specification. We have enough time until the deadline to discuss your suggestions and make further clarifications as necessary. There will be bonuses awarded for all types of extra effort. Late submissions will NOT be accepted, therefore, try to have at least a working baseline system submitted on COW by the deadline. Good luck.

IMPORTANT: Late submissions (even for 1 minute) will not be accepted!

We will only grade submissions on COW, and the system closes automatically at due time!