

ROYAL UNIVERSITY OF PHNOM PENH FACULTY OF SCIENCE IT CENTER

MASTER OF IT ENGINEERING (MITE) DISTRIBUTED SYSTEM Lecturer: Taing Nguonly

YEAR I, SEMESTER I

Assignment II

Deadline: Sunday January 22, 2011

SOK PONGSA METREY

Weekend Class

2011-2012

1. INTRODUCTION

To understand about middleware function in distributed systems by empowering of Java RMI technology.

Database name: metrey.students.db

3 tables: td_student, td_course, td_student_courses

Using SQLite JDBC / Java RMI

2. WORKFLOW

Available commands:

• 1: Save, 2: Update, 3: Delete, 4: FindAll, 5: FindById, 6: FindByName, 7: FindByCourse, 0: Quit

3. IMPLEMENTATION

Project structure:

```
\---DS2StudentCourses
  | client.bat
  | compile-java-dasses.bat
  | metrey.students.db
  | README.txt
  | start-server.bat
  +---lib
      RMIStudentClient.jar
      RMIStudentServer.jar
      sqlite-jdbc-3.7.2.jar
  \---src
    \---main
      +---java
      | | compiling
      | \---edu
          \---rupp
             \---rmi
               +---common
               | \---dao
                      AbstractDAO.java
               \---students
                 +---client
                      StudentCoursesClient.java
                 +---server
                 | | StudentCoursesServer.java
```

```
| | \---dao
| IStudentCoursesDAO.java
| StudentCoursesDAO.java
| | \---shared
| IRemoteStudent.java
| | \---vo
| CourseVO.java
| StudentVO.java
| \---resources
| Manifest-dient.txt
| Manifest-server.txt
```

4. ANSWER THE QUESTIONS

Q1: Did you find something more easily to develop RMI application than Socket programming? Why?

A 1: Yes, in term of development RMI application is easier than Socket programming because we do not need to work with streaming, client application do need to know how server is programming in RMI but socket would require in order to send the right stream.

Q2: Have you ever noticed that Java RMI support concurrency?

A2: Yes, Java RMI support concurrency, we can access with different client to the same server.

Q3: Java RMI is an abstract layer over the Inter-Process Communication which means under the hood, raw request/reply method still be used. Between two choices of UDP and TCP, which one that Java RMI is using to communicate with each other?

A3: Java RMI is using TCP for all communication, we implement the class by extends **UnicastRemoteObject** which provides support for point-to-point active object references by using TCP stream.

Q4: Why does registry service require in Java RMI?

A4: In order to register remote object and provide naming services for locating the object, require registry service in Java RMI.

Q5: Where are the Stub and Skeleton functions actually located in Java RMI?

A5: Stub is located on client side while Skeleton is located on server side.