

Homework Assignment 3

Java Remote Method Invocation

ECE 155B – Spring 2012

Due Wednesday, May 9

In the last assignment you implemented the Healthcare System using Java Sockets. In this assignment you will explore the use of Java Remote Method Invocation (RMI) in the Healthcare System.

Requirements

This assignment requires that you extend your Healthcare System to include the Pharmacies. The Doctor will communicate with the Pharmacies using Java Remote Method Invocation (RMI).

From the Doctor's point of view, the Pharmacy acts as a Java server application and the Doctor acts as a Java client application. The Doctor will use the same Graphical User Interface (GUI) as in the last assignment but with some additional views. However, now, it must now be able to send prescription information to the Pharmacy using RMI. The Pharmacy application waits for prescription requests from the Doctor application. When it receives a prescription, the Pharmacy application sends back to the Doctor application an ID for that particular prescription. The Pharmacist then starts working on the prescription. When the Pharmacist has finished doing so, the Pharmacy application informs the Doctor application again using RMI, passing the ID as a parameter in its callback.

For this assignment, you need to introduce the Pharmacy application into your Healthcare System, and to modify the Doctor application to use RMI communication with the Pharmacy. You don't need to change the socket communication between the Patient and the Doctor. The overall system should look like that shown in Figure 1. The Pharmacy application will run as a remote server object waiting for RMI communication from the Doctor. The Doctor still uses socket connections to communicate with the Patients.

At the Web site, there will be a project template and information about how to implement your third project.

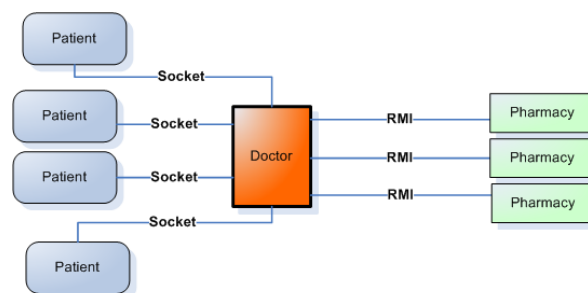


Figure 1. Overall Healthcare System.

Report (10%)

In addition to the programming portion of this assignment, you will write a small report. The report should be clear, well organized and concise. It needs to include the following:

- 1) An overview of how your system operates
- 2) Details of the design of your RMI interfaces
- 3) A class diagram sketch outlining the hierarchy of your class structure.

Demonstration (10%)

You will be performing project demonstrations for this assignment as for the others. You will be responsible for scheduling a 5-15 minute timeslot for your demonstration with the TA. Because time is limited, you should run your application on the PCs on which you will do your demo before the demo. In particular, make sure that those PCs are set up correctly. Demonstrations will be on Fridays, and will fall between specific times. You will be required to demonstrate your application's functionality, and answer several questions covering the technology and your particular implementation. Demonstrations for the assignments will be scheduled through email, or during office hours/discussion.

Submission (10%)

You will submit a compressed file (*tar*). You will need to type "*ant submission*" in order to create your submission file. If there is anything missing in the submission file, edit the *build.xml* file to include the missing information. Make sure you modify the *User* property in the *build.xml* file. The *ant* call will create submission file with the username you provide.

The compressed file should include a folder with all project content necessary to build/run the program (.java, README, Report). The projects are to be sent to ece155b.s12@gmail.com with subject line "Project 03: FirstName LastName".