Project 3 Summary

CS 5348.001 Operating Systems Concepts

I. How I Approached the Project

Firstly, I go through the project description to get known about what the project is supposed to look like. Although the project description is not a short one, that didn't take long. Because I didn't plan to get know of details.

Then I looked into the example code, to see how the socket works, and which part of code I should user in my project as well. It turned out that the configure of setting a socket is really complicated, I hardly can implement it without example code.

Next step is trying to code the first **write** and **read.** The first write and read is the client telling the server his name. After this, I know more about how is socket gonna work to accomplish the work.

Here I start designing the project. It was about messages exchanged between client and server, and purpose of the message and the data contained in the message.

Referring to the design, I code the project by menu selections. The first two menu selections are similar, and the 3, 4, 5 menu selections are also so similar. So that as I figured out the first or the third menu, that became not that hard for me.

After all the menus are implemented, I went back to project description to check every single sentence to see if I missed something. Actually I did miss something, such as mutex and some UI text. I repaired the project to meet all the requirements.

And finally, here I am, revising the design document and writing the project report.

II. Difficult and Interesting

Difficult points are almost about C programming language, still.

The configure of setting up sockets was really strange for me. Thanks to the example code, that didn't beat me.

The lack of data structures library was annoying me from the beginning all the way to the end. The features of this project's data, such as checking if user exists, associating messages to a user, inserting message to a particular user. These all told me that it would be perfect to organized data into hash tables. However, C doesn't have hash table. I was thinking about implement a hash table myself, or import a third-part library, and gave up latter. Finally, after professor's permit, I use arrays to store data.

What's interesting is that I never stopped thinking about switching to Java. I'm familiar with Java data structures. I know it would be bloody easy to accomplish the project with Java. Even now, after I struggled finishing the project with C, I'm still thinking about doing this again with Java. I believe that would be a happy experience.

III. what was learned

I learned that even processes are not on the same machine, they can communicating with each other easily with socket. I also get known about how the socket is set up, how it works and what bug might be appear during the communication.

As messages between processes or threads are all strings, I got more experience about playing with strings in C programming language.

Since not only socket is used in this project, the project helped me review the semaphore, mutex, thread and process.

And the most impressive acknowledge is that a proper data structure in really important and can make data organized easier and more reasonable.