Report

So, 3 hours before the deadline, I finally finalized my research project. It now can support 4 functions: print Dataverse-related commands, print Datasets, print Indexes, and print Functions. This is my first research project ever, so I encountered uncountable difficulties. Luckily with the help of Professor Carey and Ian and Wail, they became pieces of cake.

The first major difficulty was Java itself. With zero programming experience with Java, I was deeply frightened at the beginning. But when I started to tackle with it, I realized the huge similarity it shared with C++. Therefore, I was pretending to write C++ code the whole time. Whenever C++ syntax did not apply to Java, I would just Google it.

Later, for the second week, I misunderstood the requirements of the project. I thought the input would be the commands in a textbook. Therefore, I was embarrassed that Friday, when Professor Carey pointed out my misunderstanding. To be honest, this was a mistake that should not be made. I learned it already in INF4MATX 43. To prevent as much as possible, I should have had a long discussion with Professor, making every detail of this project clear. But I did not, because I thought Professor Carey was always busy and did not have time for this. As a result, lots of my efforts were wasted.

After the requirements were reclarified, I realized that I did not know how to retrieve information from the database. Unfortunately, making http request was never taught in ICS lower division courses. When I decided to learn it from zero by myself, Ian sent me an email along with a sample Client. That was so much needed! With his Client Class imported, I could make requests easily. And there were 2 days before the presentation on Friday, Week 4. To impress Professor Carey and to offset my awful behavior 2 weeks ago, except eating and sleeping, I was always sitting in front of my laptop. Finally, before the presentation, my program was able to flatten the datatypes. And Professor Carey did praise me, oh yeah!

Then, professor decided to change the project from flattening the Datatypes to recreating the commands of the creating Datatypes and Datasets. At first, I was not satisfied, because they seemed to be too easy comparing to auto-flattening tool. However, I was proved wrong. Even with the help of Wail’s Tab-view that saved me lots of effort, the details and bugs originated from them were here and there. When this functionality was supported bug-free (I hope it is!), it had already taken me 3 weeks (though that water-spilling-incident was a factor) and 300 lines of code!

But why were there so many details? Because one of the requirements was to be “Runnable”. Sometime my output might look fine, but the database’s compiler was always too strict. For example, the Datatypes and Functions must be declared in topological order; the name of indexes and functions might be duplicated; parameters in indexes could be undeclared, but you cannot specify the Datatypes for the declared ones, even though those were their actual Datatypes; I must create the Datasets first for the Indexes and Functions that depends on them… I can talk about these details the whole day. And to implement those details, it was often the case that I had to reconstruct the code. For instance, when a same piece of code will be needed multiple times, I had to create a function for it; when a piece of code was written in a really simple way but could not support the requirements of later functionalities, I had to rewrote it and parts that associated with it, in a more complicated way. And these nightmares were exaggerated, when code was getting longer and longer. For the last weeks, I felt like I was swimming in a pool full of dung… Ah I forgot to mention, the code was complicated because I wanted it to be O(N), with N being the total length of the commands. If not, I did not even need to write topological-sort right?

But anyway, here we are! My 600-lines of code and lots of sub-classes symbolizes the efforts I have spent in my debut. I don’t expect it to be perfect, and I will be waiting for people to email me about the bugs they have found, but I am already satisfied in my behavior. Let’s keep my passion for my next project!