Criterion A: Planning

Client: Margarita Campos

Title: Student Database

Scenario:

My client is Margarita Campos who's my sister, and is currently volunteering at an organization called the Boys and Girls Club. At the organization, one of her jobs is to teach summer courses to kids in the program in order to prepare for the upcoming school year.

In previous years, my client would manually record student's grades, and pass them out at the end of the course, as no more than a few students would end up attending the classes. But due to the pandemic, the orgainzation is now planning on doing the summer courses virtually. With that, she is expected to have a lot more students attend, and will make it more difficult to physically write everyone's grades down.

My sister, knowing that I was interested in Computer Science, suggested if I could make her some sort of program to help organize all of her students and their records. I decided to take up her request, as I had recently learned how to use a database language called SQLite, and knew it would help me in the process of creating this program. To make it easier for my sister to use the program, it would be integrated into a GUI as mentioned in my interview in Appendix 1, as it will allow for easy interaction between the database.

Rationale:

The database program will allow my client to easily access all of her students, classes and their grades, while being able to add, edit, or delete them at her leisure. One advantage that this application will have over my client's previous methods is that she only needs to upload the assignment grades onto the program, as everything from the class percentage to the student's grade will be calculated. This will save her a lot of time from having to do everything manually, and allow him to focus more in other areas of his teaching.

For this program, I will use Java OOP as it will be the most efficient language to use given the amount of repeated interactions between the database and user. Java is also a programming language that I had previous experience with, which will help me in the creation of a well developed GUI. Java is also compatible between multiple operating systems, so if my client ever needs to switch systems, it won't be an issue.

My rationale for choosing SQLite over other database programs is that it is free to use, as commercial database programs often require a monthly subscription. When it comes to using SQLite to read database files over something like the Java IO package, it's better to use SQLite as it reads files quicker and in some cases, can read up to 35% faster (Sqlite.org, 2021). SQLite is also an application that is compatible across a variety of different programming languages including Java, which will make it an useful part in developing the product.

Success Criteria:

- Creation of database to store students
- Creation of a graphical user interface where all of the information from the database is presented along with programmed controls
- Client will be able to to add edit and delete students
- Client will be able to add edit and delete classes
- Successful implementation of a class assigner that can add or remove classes from the selected student
- Client will be able to add edit and delete assignments
- Client will be able to see calculated percentage and grade once an assignment has been added to the program
- Database is used to present information back to the program when it's restarted
- Creation of search tool to search between for students, classes and assignments

Word Count: 479 words