

Criterion A: Planning

Scenario:

Client and Advisor:

The client for this project will be my mom and my younger brother.. The advisor will be my dad, who is working as a software engineer for a major technology company.

Problem:

My younger brother has been part of the local swim team for the past few years. Although he regularly shows up to meets and practices, there has never been a way to keep track of his swim times (ie: how long it takes to complete however many laps). Having a tool to keep track of his swim times and analyze them statistically would be helpful as it would let him know where he needs to improve.

Solution and Rationale:

My solution is a desktop application to help keep track of his swim times. It will then analyze the times statistically by finding the measures of center and measures of spread for each stroke, then output it graphically in a readable manner. It would also tell the user which strokes need improvement and how the current times compared with past times. As an added bonus, it would also be able to help schedule and keep track of future events. I plan to make this using either the TKinter library in Python 3 or Java Swing. As I have never used either of these libraries, I will have to decide later on which one I will use, as determined by what the libraries provide (ie: how easy it is to make a good looking graphic user interface using the libraries, how quickly I can learn it, etc.). Other skills I would need to acquire are data organization, exception handling, graphical organization, file management, and making the design user-friendly.

I feel like this project would be reasonably challenging as this would be the first time I would write a program that takes relatively large amounts of data input from the user, handle them and analyze them statistically, then graphically output it to the user. However, it is also simple enough that I would not have to spend so much time learning new concepts and tools that I would not be able to complete the project on time.

Success Criteria:

- The program should be able to keep track of the swimming times for each stroke.
- The program should be able to include a video of the swim, either embedded within the program if possible, or a link to Youtube if not.
- The program should be able to analyze the times by listing the highest and lowest times.
- The program should be able to compute and display statistical calculations on the swim times (for example, mean, median, mode, and standard deviation).
- The program should be able to compare the times against the standard times.

- The program should be able to keep track of schedules of future meets, practices, and other events.
- The user should be able to store profiles with the program. Each profile will have its own swim times associated with it.

Word Count: 350