Lab 4

Detailed Technical Design Document for Scientific Calculator

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1. Project Overview

The overview of this project was for the instructor and the students to prove that they have learned some skills that can be used in the real world. Having to develop a scientific calculator was a challenge that was rewarding.

1.1 Objective

The objective behind this software was to find people to use this with little to no difficulties. Having the users satisfied is the ultimate goal in all things tech related.

1.2 Business Case

Provide the business case for the project, including the problem being solved, who/what area is impacted, and the business benefits of the project. (A few sentences will be sufficient).

Some of the business benefits that a software like this has, are that software is supposed to have an ease of use for their clients/users and this scientific calculator is just that. Being able to solve complex calculations is a huge part as to why people will want to use this.

2. Technical Design

Design of this calculator was assisted by the tkinter library on the python library, this allows software developer to let their creativity flow. The colors that were used in this calculator might seem flamboyant but nonetheless it does catch the eye from a ways away.

3. Technical Specifications

Technical specifications were that the calculator is suppose to solve and output the correct answer using proper arithmetic.

3.1 Prioritization of the Requirements

Requirements going down in order of prioritization

- Having a functional GUI and code behind it.
- Buttons being arranged in a way that seemed professional.
- Math library helping out with some of the arithmetic.
- Adding our own twist to the GUI adding colors, size, etc.

4. Level Design

Identify the staff resources needed to successfully complete this project. Also identify the staff, technical, and other resource dependencies that should be considered.

For the level design we will be getting into what was accomplished during the time creating this calculator. What the high and low level designs consist of:

4.1 High Level Design

The overall system design is that it was designed after what the Python libraries had to offer and jumping off of that. With tkinter and the math libraries the things that are able to be done are limitless, creating the GUI with tkinter was a nice experience and rewarding.

4.2 Low Level Design

The component-level design process was thanks to the Ghantt chart that a template was provided to be free to use. Ghanntt charts really do help with the design process and allow for us to see how much time we have left in order to finish the assignment or lab which is a win-win situation. It was able to help us break down the work into many pieces so that it wouldn't overwhelm us during the process.

5. Assumptions

Assumptions on the design are that many will believe that it is supposed to be this fancy and flashy calculator but all of that is unnecessary baggage. We can make a scientific calculator do what scientific calculators should do.