**Final Project Requirements**

1. A working GUI tkinter application with at least two windows.
   1. This task was successfully completed. The application has 3 windows, and I successfully eliminated all the exceptions and errors I could find while testing.
2. Implementing a modular approach in your application.
   1. This could have been done better but ultimately it is in modular form. I would have liked to show off the use of classes and methods more, but the need for use of class/methods felt more of a formality because of the low level of complexity of the program.
3. Consistent clear navigation throughout the GUI application.
   1. This depends on the viewer and after staring at the project for many hours there is a level of blindness that sets in – but I say it indeed does have clear navigation. I have had others view the project and they have said the navigation is clear.
   2. I was concerned with the user knowing how to operate the program, so I provided a directions page to explicitly list directions and included the large ‘to begin’ arrow on the main window to draw focus. I also made sure all the buttons were appropriately sized to draw the right amount of attention, which matters a lot in how a program feels.
4. Use at least two images in your application.
   1. The application has three images, a welcome banner, a fun graphic for the results page, and an error to make the first step in using the program overly clear.
5. Include at least three labels.
   1. The application has 13 labels: 6 to describe input, 5 to describe output, 2 to describe the directions for the application.
6. Include at least three buttons.
   1. The application has eight buttons: two tied to calculations, three tied to closing windows/exiting the program, one for directions, one for grand total, and one to clear a field so the user can use the program repeatedly without closing the application.
7. Include at least three call back function with each button, including exit button.
   1. Each button has a callback function – including three exit buttons.
8. Implement secure coding best practices, including input validation to check if the user entered the correct data type, make sure the entry box is not empty, etc.
   1. All input fields have input validation and either display a message to the user or enter appropriate data to substitute for invalid entries.
9. Validation testing -. Develop an appropriate set of test data to fully validate the program against.
   1. Validation testing file with screenshots has been created and included with the program zip.
10. User manual creation - You will write and submit a user’s manual for your final project and submit it according to the instructions in the attached file.
    1. User manual created and included with the program zip.
11. Completely filled out Requirements Document (this document)
    1. This document is filled out completely according to the directions
12. You will fully document the corrected Python tkinter source code with appropriate comments.
    1. Code is fully documented – only skipping lines where the code function is obvious or nearby comments describe its participation
13. The link of the GitHub repository for your final project.
    1. https://github.com/wallacekorn/SDEV140-final-project