*Yarger Scott SDEV 140 Spring 2023 Monday night*

*M03 Project Introduction and Project Status Report I*

***Details****: The name of my project will be ~~Retirement~~ Savings Calculator Options*

Reason: I have two banking accounts: one started with the opening of my home mortgage and the other related to general savings and retirement planning. Recently I noticed that the certificate interest rate had increased, making this a good time to swap some funds from general savings to a 15 month certificate. ~~I have already paid off my mortgage but am thinking about a home addition second mortgage. I have some funds for this addition but not enough for the full cost.~~  (After getting new estimates, the increased construction costs post-covid have put a pause to this option.)

I would like to create ~~two GUIs~~ one simple GUI for a ~~comparison between interest rate savings compared to mortgage rate deduction savings. This would be to help to decide at which point would be better to invest in a certificate versus making additional payments on a second mortgage.~~ savings interest calculator.

This first GUI application would take information entered by the user and calculate it to provide amount of interest generated with the amount invested and time of the investment.

A second GUI ~~would be for the user to choose to enter an existing mortgage amount and current interest rate to find the resulting monthly mortgage. Different amounts could be entered to judge the best scenario~~ as a calculator to meet the rubric requirements for multiple functions for individual buttons.

**Buttons**. ~~My initial approach would have been to use pulldown menus for the data entry. However since the project requirements are for buttons, I will probably do some validation for certain select ranges for each entry box.~~ The buttons will be Initial amount, Interest rate, time period and final compound savings amount. Also, some type of labeling to guide the user.

**Audience**: My audience would generally be Boomer or Generation X users who have extra money to invest. ~~For this scenario, I would be omitting tax considerations. The users would be presumed to have just one bank which would be offering both options so there would be no transfer penalties. Also no loan origination or setup fees added into the calculations~~.

**References**. I found a starter mortgage calculator at Codemy.com which I plan to modify. The interest rate calculator would be based on a Parvat calculator sample on YouTube. Also a PhotoImage, ImageTK option from the Import PIL software. Also for additional online retirement calculators, the book Retirement Planning for Dummies, by Matt Krantz (401, Social Security and IRA planning options)

**Outline and Revisions**

1. On the savings certificate option the user would enter the amount to invest into the certificate, the current interest rate and the time period.
2. ~~The Validation button would verify the available rates and time period.~~
3. The user investment amount would be multiplied by the certificate rate to get compound interest.
4. The amount earned would be presented through a GUI results window and label.
5. There would be a loop so that different amounts could be entered.
6. ~~On the mortgage reduction option, a total amount would be entered along with term and rate so that the monthly payment could be determined.~~
7. ~~The Validation button would verify the available rates and time period for calculation.~~
8. The amount earned would be presented through a GUI window and button and label.
9. ~~If time allows, I would like to create a comparison between the two outputs.~~
10. To meet the requirements of three different functions per button, I am also submitting a basic calculator with addition, subtraction, multiplication and division
11. To meet the requirements of the two graphics, I am including a simple icon of a house and a bank. Because of a conflict between the two modules, the graphics will be presented in their own window. A separate module will demonstrate the close button feature.
12. Unsure on the Error checking feature. How do you generate a response message out of a GUI program. Previously it would generate on the console. With a GUI, would that be a second window? How would that be cleared?

Additional

~~I am considering looking at the Social Security website to see if any modeling can be done based on the retirement year report which I just received in the mail this week.~~ A portion of my research will list indexes of websites which have free retirement planning applications.