Description of scenario

My client, my mom, is a housewife and is currently learning cross-stitch. As a housewife, she buys a lot of daily supplies and materials that are necessary for cross-stitch. They are in various categories, thus her transactions are huge since she has to prepare everything needed for a family and herself.

She's currently using notes to keep track of her transactions. There are multiple purposes of using the notes. First, there is a list of items she plans to buy for house supplies and for her cross-stitch materials. Moreover, she creates different categories such as foods or clothes, and records expenditure in the corresponding categories. Lastly, she uses a calculator to calculate expenditure of the day.

However, as she spends more money on various categories, there are limitations for using the notes and calculator. She can also easily lose the notes, which makes her unable to record. Moreover, she finds extremely hard to compare past transactions to see any error or overspent categories.

I volunteered to help her by using the knowledge I gained from Computer Science class and my CS teacher will be my supervisor.

I consulted with my client for having more than 1 type of graph with a limited number of categories would be unnecessary and extending the date to finish the project by 3 weeks later is acceptable with her consent.

Rationale

I decided to use Python for the project due to level of complexity and functionality of the task. Python is an OOP (Object-Oriented Programming) language that defines data type of a data structure and functions that can be applied to the data structure, which are classified and handled by each object. Although speed is a bit slower compared to other high level languages, it still has dynamic features and is user-friendly that can maximize efficiency with fewer codes. Additionally, python codes are known for its graphic design applications that can display a great GUI (graphical user interface) to the end-user. It also emphasizes code readability, which is a programmer-friendly language, and has ability to expand data analysis and extensive libraries.

The GUI and main library I will be using are tkinter and Canvas, which are one of python GUI and a python visualization library based on matplotlib. Many items that are in different categories can be displayed through Canvas and it provides a high level interface for drawing statistical graphics. The graphs will help the client visually.

A database is necessary since this program will have users' information such as the users' id and password to login, thus the program will have a SQLite (Structured Query Language) database based on python. Referenced to

above, Python provides extensive library of open source data analysis tools, web frameworks and testing instruments for programmers. This can easily correlate with the SQLite database, which Python already includes a module called “sqlite3”. It is embedded in the program and advantages of sqlite3 are self-contained, serverless and zero-configuration.

Success Criteria

1. The program should save and read the user’s username and password to and from a database.
2. If the username or password is invalid and does not exist, the program shows an error message.
3. If account is created successfully, the program shows a success message.
4. When typing for password to login, the password should be unseen and covered by asterisks.
5. When clicked “Continue”, the program continues onto a mainwindow where there are multiple buttons for other windows to be displayed.
6. When clicked “Calendar”, the program shows today’s date and input boxes of year and month.
7. When clicked “Display option” in “Budgets” window, it shows 2 options in a menu: Expense and Income.
8. When clicked “Expense” or “Income” as an option in “Budgets” window, the program should show input boxes of category’s name and amount of expense or income the user can name and classify. It also shows button called “Graph”.
9. When clicked “Graph” as an option clicked, the program displays a graph that has the input data.
10. When clicked “Remove” in “Notes” and “Calendar” windows, the program should remove existing note or calendar.

Word Count: 487