Abstract

Overview

The Habit Tracker App is a Python-written, modular app, designed with the goal of allowing its users to better manage their day-to-day habits and ultimately reach the results they seek for an improved lifestyle.

The app has the basic functionalities of a habit tracker, such as the creation, editing, deletion of habits, as well as checking them off in a daily and/or weekly recurrence.

It combines the programming-app-development aspect with data analytics, by introducing some interesting graphic visualizations of the user's habits' activity and performance.

Content

Due to its simplistic nature and focus on modularity, the app is built and organized as follows:

- **Menu** (Menu.py): Contains the menu class and is responsible for setting the interface and theme for the user to navigate through the app.
- **Habit** (Habit.py): Contains the habit class where all its attributes are defined.
- **Habit Management** (HabitManager.py): Responsible for all habit management actions, including the creation, editing, checking-off, deletion and completion of habits.
- **Database Management** (DBManager.py): Contains the DB class, initializing the Database, creating tables, and managing all data database operations, including querying, saving or deleting habits, and others.
- **Analysis** (Analyze.py): Contains the Analyzer class which provides the tools for habit data analysis, including streak calculations, or the creation of graphical visualizations.

Project Retrospective

What Went as Planned / Surpassed Expectations

- User Flow:

  Much of the user flow (close to 100%) that was envisioned during the conception stages, was carried out, with the exception of how the main menu and submenus were set up.

- Visualizations:

  Probably the main milestone. Charts and visualizations produced remained extremely faithful to the wireframes provided initially. Moreover, with a couple of alternative chart types being added to further demonstrate the power of strong analytical tools to ultimately meet the needs of the user.

- Streaks:

  While calculating the current and longest streak was, fairly, straightforward; capturing all the different streaks in moment and time for graphical representation, on the other hand, proved to be a little harder. Especially when having to ensure the right date formats, and so on.

- The little details: Think User

  Going through the 360º considering the various scenarios a user may come across (as well as error handling and user input validation), solid logic was put in place. E.g., what if a user changes recurrence of an existing habit, creating duplicated habits, checking off inactive habits, deleting all checkoffs when deleting a habit; and so forth.

Challenges:

- Dates:

  It proved challenging making sure that all methods and data were fully aligned and formatted correctly, despite the use of the daytime library, considering the app contains an analytical side of it, including graphical representations (most of them displaying progress over time); habits which may have with different recurrences (daily vs weekly); predefined habits (generating random dates);

- Database:

  Setting up the database initially proved to be challenging as well. However, once it was properly set up and functional for proper db data retrieval, it proved to be a great validation support for app testing.

Conclusion

The Habit Tracker was created with passion and love and is a strong and fully functional tool for users to track and manage their habits in real life for an improved lifestyle. The app is built in a way that easily allows for further expansion and introducing new features.

The different visualizations made available may also serve as inspiration for the different kinds of progress users would like to see when tracking their habits and milestones.