Finalization Phase / Phase 3

Habit Tracking App

Concept:

This project was created within the "Object Oriented and Functional Programming with Python" module by IU – International University. Although it is a functional App and it satisfies the criteria for this course, it would need additional features to be able to be competitive with the other Apps available. As a first object oriented project, it was a very good challenge where I was able to learn the fundamentals and the logic behind an OOP, which was not so evident at start. Alongside with the App functionality, a test module and a database loader (data with 5 habits and a month worth of dates) were created.

To make all this possible, I used some libraries such as:

- questionary – Used to create a simplified text-based menu (CLI);
- sqlite3 – Used to create a database with a SQL structure;
- datetime – Used to format dates and to obtain current time date;
- pandas – Used for data manipulation in order to calculate streaks;
- pytest – Used to test functions functionalities and to analyse the expected results.

Functionalities:

With this App the user will be able to create new habits, mark them as completed by increment that same habit and if needed, the user can also delete them. By creating a new habit, the user will have to introduce its name, a description and the periodicity of that habit (daily or weekly) which will be stored in a table called "counter" withing an SQL database. The name will be the primary key on that table. A second table is also needed when the user wants to increment the habit. By doing that, the name of the habit and the date (current time date) will be stored in a table called "tracker". When deleting, the user will be asked to select one habit from the list provided (loaded from the "counter" table) and the data will be removed from both "counter" and "tracker" table.

To make all this more interesting some methods were created to calculate the streaks for the habits based on the number of times they have been incremented in a succession. Because we have more than one periodicity, we had to give some smartness to those methods so, the function follows different rules based on the habit periodicity. This can be accessed by the user by selecting the "Analyse" option which will provide 3 additional options:

- Habit – The user will be asked to select one habit from the list containing all the habits stored in the "counter" table. Upon selecting the desired habit, the incrementation times and the longest streak for that habit will be shown;
- Periodicity – The user will be asked to pick one from the two periodicities (daily or weekly). Upon selecting the desired periodicity, only the habits with that periodicity will be shown. After that, the user selects a habit and the same information as before will be shown, incrementation times and the longest streak for that habit;
- Longest Streak – Provides the user with an informative string about the longest streak from all the habits stored in the database.

Final thoughts:

When creating this App, it was very clear to me that I didn't have enough experience to start this project. Thankfully some tutorial videos were provided which served as snowball effect for me to gather enough knowledge. Somethings didn't work out as I initially was expecting, for example, the "Incrementation" option was a manual input from the user which, in the long run, would end in a misspelled habit. To counter that, instead of the user typing manually the habit name, functions have been created to show the user a list of the habits stored in the database. The same methodology was after applied to the "Analyse" and "Delete Habit" options. By doing this, I guarantee the longevity of the App and its success. For future projects I will be sure to remember to avoid manual user input. It felt very gratifying to be able to create something on my own and to be able to overcome the obstacles provided by this project.

Future:

In the future, I am excited to revisit this project and to embark on a new development phase. One area that I still want to explore is the transition from the current CLI to a more user-friendly GUI. That way, I will gather even more knowledge within this project. I also wanted to create a "quick habit reminder" which shows the habits that the user is missing for that day.

GitHub Link: https://github.com/pleocode/HabitTrackingApp