Habits Tracking App – Abstract

The Habit Tracking App (HTA) is an application consisting of five classes: User, Time, Store, Habits, and Analyses.

The User class acts as aggregator for the HTA because it inherits properties and modules from the other four classes. The Store class handles the connection and communication with a database management system (DBMS); for such purpose "psycopg2" module is imported. The Time class is responsible for date-related calculations; it imports the "datetime" module, as well as the "math" and "random" modules. The Habits class serves as a temporal location for storing information related to a habit, namely, name and specifications of the habit. It performs as well checks on the length of the specification to persuade the user to describe the habit as good as possible. The Analytics class is dedicated to conducting analytics on the habits and relies on the "pandas" module for that task.

The file "Main.py" is composed by several loops that regulate the interaction between the HTA and the user. In "Main.py," a new object is created from the User class and from there, a user-account can be created or accessed; habits can be created and deleted; and analytics from the habits presented. A menu is provided so that the user has access to the different possibilities of the application, the menu follows as:

- Add a habit (a) -> adds a habit and its description the database.
- Check a habit (c) -> Marks a selected habit as checked.
- Delete a habit (d) -> Deletes a habit and their linked information from the database.
- Show a list with all tracked habits (l1) -> It shows a list of all tracked habits. Here tracked habits are those which end date is later as from today.
- Show a list of habits by periodicity (l2) -> It shows a list of habits organized by their periodicity.
- Return the longest run streak (r1) -> It provides you with the habit with the longest streak. Here that means that, for example, 3 counted streak of 3 weeks has a longer streak than 5 days streak. The measure is by number regardless the unit.
- Return the longest run streak for a given habit (r2) -> It provides the longest streak of a selected habit. Apply same parameters as in line 35.
- Exit (e) -> Exits from the application.

The Storage class provides the necessary means to access the DBMS across all modules, while the User superclass establishes the link between the Storage class and the "main" environment. The Storage class makes a connection to a database management system hold in Postgres, creates the tables if they do not exist for any reason, as well fills up the database with exemplary data for every new user; the connection to the database management system has the following characteristics:

- database="Habits",
- user="postgres",
- host="127.0.0.1",
- password="hpdeskjetd1460",

- port="5432"

As per the structure, it was constructed in a way that will allow further and easier development in the future, if required. Nevertheless, it is acknowledged that a simpler solution exists and the whole application could have been wrapped up in just one class. The module pandas would have provided a strong basis to develop such concept.

The use of fire as command line interface at the beginning was a mistake in relation to the structure of the system; huge changes will be required if this option was to be pursued.

The database management system used for the application is complex but required if the application is to growth. It is acknowledged that a cleaner access to the information is possible through more structured SQL-commands; nevertheless, for the purposes of the project is satisfactory.

Find the HTA in the GitHub repository of the link below:

https://github.com/jecaball/Habit-Tracking-App.git