

Object Oriented and Functional Programming with Python (DLBDSOOFPP01)

Habit Tracker Application, developed by Eros Fortea.

1. Introduction

The habit tracker application has been developed to help the users to create, modify, analyze and track their different set of habits.

The application has two main blocks, the database and the Habit class.

- Data base: it stores all the information about the habits it has the following structure:
 - ID: it associates an id to every habit, making it easier to organize it and manipulate them.
 - Name: is the name of the habit, so if the user wants to start to run here the user would put the word run.
 - Description: it gives the user the possibility of giving a brief description of the habit and its goals.
 - Date: it stores automatically the date that the habit has been created.
 - Frequency: The user can store the frequency of the habit (daily, weekly or monthly)
 - Status: It stores the status of the habit if it's active in standby mode or if it has been completed.
 - Time goal: It stores the time objectives of the habit.
- Habit Class: It has the main code block and interacts with the database to manage and analyze different habits while giving the user clear instructions on how to do every step. It is composed for the following key methods:
 - Create_new_habit: is the function in charge of creating the new habits, after its creation the new habits are stored in the database with all the information that is commented above(database)

- View_all: It gives the option to the user to have an overview of the habits that has been stored with in the database, this method is also used in the different parts of the code to give the user some useful information and to make the user experience easier.
- Upgrade_habits: This method allows the user to modify the different habits that have been already created, being able to modify any information that has been stored in the database.
- Deleting_habit: through this method the user can delete any existing habit.
- Longer_streak: The user can check which is the habit that is for longer period stored in the database.
- Habits_goals: This allows the user to set goals/objectives towards its habits.

2. Purpose

The Habit Tracker application is designed to empower users by providing them with a comprehensive tool to create, track, and manage their daily habits and routines. By offering a structured approach, it helps individuals set clear goals, monitor their progress, and maintain accountability. The application aims to facilitate personal growth and productivity by ensuring users stay on top of their habits, whether they are trying to develop new positive behaviors or eliminate negative ones. With features tailored to track completion rates, set time-based goals, and analyze streaks, the Habit Tracker is an essential companion for anyone looking to improve their lifestyle and achieve long-term success.

3. User Interface

The Habit Tracker application boasts a user-friendly and intuitive interface designed to make habit tracking straightforward and engaging. Here are the key components.

It is composed by a menu that shows all the functionalities of the application:

```
Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits
```

The menu gives easy instructions to the user and allows them.

- If press 1: It opens a menu with the instructions to create the new habit and once it is stored the menu is shown.

```
Welcome to the habit creation portal
-----
What is the new habit about? run
Insert a small description about the habit: run fast boy
What is the frequency of the new habit? insert 1 for daily 2 for weekly 3 for mo
nthly: 1
Please insert 1 if active or 2 if it is in standby or 3 to complete it: 1
New habit "run" successfully created!

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits
```

- If press 2: It gives you an overview of the habits with all the about the habits.

```

2
All Habits:
id name description date frequency status time
1 run run fast boy 2024-06-24 Daily Active None

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits

```

- If press 3: if the user wants to change any information about the habit can do it here, first it shows all the habits have been created and after that displays the menu to accomplish that task

```

3
All Habits:
id name description date frequency status time
1 run run fast boy 2024-06-24 Daily Active None
-----
Please, introduce the id of the habit you want to upgrade: 1
Enter the new name: run more
Enter the new description: run way faster
What is the frequency of the new habit? insert 1 for daily 2 for weekly 3 for monthly: 1
Please insert 1 if active or 2 if it is in standby or 3 to complete it: 1
Habit "run more" successfully upgraded!

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits

```

- If press 4: This part is designed to allow the user to delete any existing habit in an easy way, first shows the current habits and later asks you which one you want to delete.

```

4
Here you have a list of your habits
-----
All Habits:
id      name      description      date frequency status time
1 run more run way faster 2024-06-24      Daily Active None
-----
Choose the id of the habit you want to delete: 1
Habit with id "1" successfully deleted!

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits

```

- If press 5: It displays the habit the user is committed for longer.

```

Choose the id of the habit you want to delete: 0
Habit with id "0" successfully deleted!

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits
5
Habit: run more - Longest Streak: 1 days

```

- If press 6: The user can set goals or check the habits if they have been done during the day.
 - If wants to set a time-goal the user just needs to follow the instructions and the goal will be stored in the database
 -
 - If wants to check the habit as accomplished for today it will be automatically stored in the database and will be reduced 1 day from the goal it was set above.

```
Please select the id of the habit you want to set the goal for or check it for today: 1
Press 1 to set a time-goal, 2 to check it for today: 2
Have you completed the habit today? (y/n): y
Congrats!! Keep it up.

Welcome to the menu:
Press 1 if you want to create a new habit,
press 2 if you want to view all,
press 3 if you want to upgrade an habit,
press 4 if you want to delete an habit,
press 5 if you want to check your longer streak
press 6 to set goals towards your habits
```

4. Implementation Details

- Tools: Python, SQLite, datetime module, Pandas, computer terminal.
- Workflow: Here is a link with a diagram with the workflow: [Workflow](#).

5. Summary of Key Points

Purpose and Objectives:

The Habit Tracker application aims to help users create, track, and manage their habits effectively.

It provides a structured approach to building and maintaining positive habits over time.

Core Features:

Create New Habits: Users can easily set up new habits with detailed descriptions, frequency, and status.

View and Manage Habits:

Users can view all habits in a structured format, update details, and delete habits when necessary.

Track Habit Completion:

Daily tracking of habit completion helps users stay on course and measure their progress.

Longest Streak Calculation:

The app calculates and displays the longest streak of consecutive days for each habit, motivating users to maintain consistency.

Goals and Milestones:

Users can set time-based goals for their habits and receive updates on their progress.

User Interface and Experience:

The application provides a user-friendly interface with clear instructions and feedback at each step.

Integration with pandas for structured data presentation ensures that users can easily view and interpret their habit data.

Technical Implementation:

Built using Python with SQLite for the database and pandas for data handling and display as well as datetime to keep track of the time.

Emphasis on data integrity and user input validation to ensure accurate and reliable habit tracking.

Future Enhancements:

Plans for integrating additional features such as user account creation, notifications, graphical progress charts, and social sharing options.

Continuous improvements based on user feedback to enhance functionality and user experience.