2023

Python Habit-Tracker Application

Development phase

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Introduction

Our habit tracking application is designed to help users achieve they goals and create lasting positive habits. By using our app, users can easily track their progress and stay motivated on their journey towards self-improvement.

Our app is built with users needs in mind, and we've designed it to be as intuitive and user-friendly as possible. With features like defining habits, progress tracking, and streaks analysis, users will be able to stay on track and see real results in no time

App Directory Structure
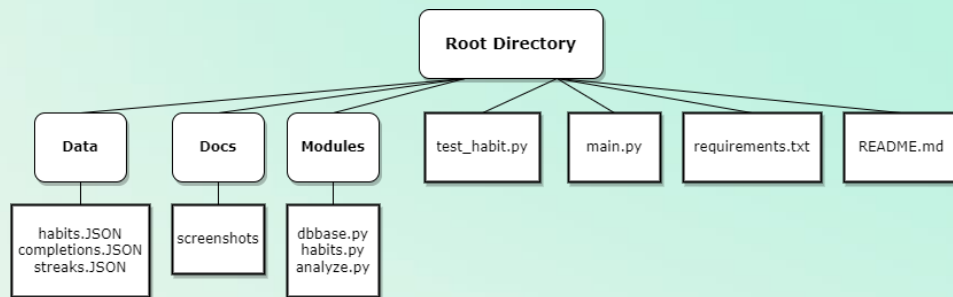
Modules and their functions

dbbase.py	habits.py	analyze.py
• class Database • init_db() • get_habit() • get_habits() • get_habit_completions() • get_habit_periodicity() • get_last_completion_date() • get_streaks() • get_streaks_for_habit() • get_updated_streaks() • update_streak() • reset_streak() • insert_test_data() • clear_database()	• class Habit • add_habit() • mark_habit_as_complete() • delete_habit()	• habits_todo() • habits_overview() • habit_status() • show_habit_streaks() • show_habit_completions()

Main Menu

```
(HTenv) PS E:\IU-habit-tracker-master> python main.py


*********************************
Welcome to Habit Tracker APP!
Use this app to track your habits.
*********************************
?
What would you like to do? (Use arrow keys)
 » Add a habit
   Mark a habit as complete
   Delete a habit
   Today habits
   Analyze habits
   Insert predefined habits
   Quit application
```

```
What would you like to do? Add a habit
? What is the habit name? programming
? What is the habit periodicity? Daily
Habit added successfully!
? Would you like to continue? (Y/n)
```

Add habit

```
What would you like to do? Mark a habit as complete
? Which habit would you like to mark? 1: programming
Habit has been marked as complete!
```

Mark habit

```
What would you like to do? Delete a habit
? Which habit would you like to delete? (Use arrow keys)
 » 1: programming
   Go back to main menu
```

Delete habit

Users can navigate through the options using the arrow keys and press enter to select an option.
- Users can add a habit by entering the name of the habit and the period of the habit.
- Users can mark a habit as done by selecting the name of the habit from the list.
- Users can delete habits by selecting the name of the habit from the list.

Habits to do

```
What would you like to do? Today habits

| ID | Habit Name   |  Periodicity | Last Completion |

|  1 | Study        |            1 | 2023-01-03      |

|  2 | Workout      |            1 | 2023-02-06      |

|  3 | Swim         |            7 | 2023-02-08      |

|  4 | Programming  |            1 | 2023-01-14      |

|  5 | Travel       |           30 | 2023-02-01      |
```

This option shows users the habits that they have to do today based on the period of their habit.

```
What would you like to do? Quit application
Looking forward to see you again
```

Users can simply quit application by selecting quit option in main menu

```
What would you like to do? Insert predefined habits
? Do you want to insert predefined habits into database? Yes
Predefined habits inserted successfully!
? Would you like to continue? (Y/n)
```

Insert Predefined Data

id	habit_id	completion_date
Filter	Filter	Filter
1	5	2023-01-05 01:00:00
2	5	2023-02-01 01:00:00
3	4	2023-01-08 01:00:00
4	4	2023-01-09 02:00:00
5	4	2023-01-10 03:00:00
6	4	2023-01-11 04:00:00
7	4	2023-01-13 05:00:00
8	4	2023-01-14 06:00:00
9	3	2023-01-15 01:00:00
10	3	2023-01-18 01:00:00
11	3	2023-01-29 01:00:00
12	3	2023-02-02 01:00:00
13	3	2023-02-08 01:00:00
14	2	2023-02-02 01:00:00
15	2	2023-02-03 01:00:00
16	2	2023-02-04 01:00:00
17	2	2023-02-05 01:00:00
18	2	2023-02-06 01:00:00
19	1	2023-01-02 01:00:00
20	1	2023-01-03 01:00:00

Completions table

id	habit_name	periodicity	creation_date	last_completion_date	number_of_completions
Filter	Filter	Filter	Filter	Filter	Filter
1	Study	1	2023-01-01 01:00:00	2023-01-03 01:00:00	2
2	Workout	1	2023-01-05 01:00:00	2023-02-06 01:00:00	5
3	Swim	7	2023-01-08 01:00:00	2023-02-08 01:00:00	5
4	Programming	1	2023-01-04 01:00:00	2023-01-14 06:00:00	6
5	Travel	30	2023-01-02 01:00:00	2023-02-01 01:00:00	2

Habits table

Sample data

id	habit_id	current_streak	longest_streak
Filter	Filter	Filter	Filter
1	1	2	2
2	2	5	5
3	3	0	3
4	4	0	4
5	5	0	2

Streaks table

Analyzer module

```
What would you like to do? Analyze habits
?
What would you like to do? (Use arrow keys)
» Habits overview
  Single habit status
  Streaks analysis
  All completions of a habit
  Go back to main menu
```

```
What would you like to do? Streaks analysis

| Habit ID | Habit Name | Periodicity | Current Streak | Max Streak |
|----------|------------|-------------|----------------|------------|
|        1 | Study      | daily       |              0 |          2 |
|        2 | Workout    | daily       |              0 |          5 |
|        3 | Swim       | weekly      |              0 |          3 |
|        4 | Programming| daily       |              0 |          4 |
|        5 | Travel     | monthly     |              0 |          2 |

your longest habit streaks is: Workout
```

Analyzing habit streaks

```
What would you like to do? Habits overview
? What would you like to see? All habits

| ID | Habit Name  | Periodicity | Creation Date       | Last Completion Date | Number of Completions |
|----|-------------|-------------|---------------------|----------------------|-----------------------|
|  1 | Study       |           1 | 2023-01-01 01:00:00 | 2023-01-03 01:00:00  |                     2 |
|  2 | Workout     |           1 | 2023-01-05 01:00:00 | 2023-02-06 01:00:00  |                     5 |
|  3 | Swim        |           7 | 2023-01-08 01:00:00 | 2023-02-08 01:00:00  |                     5 |
|  4 | Programming |           1 | 2023-01-04 01:00:00 | 2023-01-14 06:00:00  |                     6 |
|  5 | Travel      |          30 | 2023-01-02 01:00:00 | 2023-02-01 01:00:00  |                     2 |
```

Overview of all habits

Analyzer module

```
What would you like to do? All completions of a habit
? Which habit would you like to select? 3: Swim

All Completions of habit *Swim*

| date and time of habit completion(s) |

| 2023-01-15 01:00:00 |

| 2023-01-18 01:00:00 |

| 2023-01-29 01:00:00 |

| 2023-02-02 01:00:00 |

| 2023-02-08 01:00:00 |

Number of completions in the last 7 days: 0
Number of completions in the last 30 days: 0
```

```
What would you like to do? Single habit status
? Which habit would you like to analyze? 2: Workout

You have broken the habit 'Workout' since it has been 37 days since the last completion.

| Habit Name | Periodicity | Last completion      | Number of Completions |
| Workout    | daily       | 2023-02-06 01:00:00  | 5 time(s)             |

| Days Since Last Completion | Current Streak       | Max Streak            |
| 37 day(s)                  | 0 day(s) of streaks  | 5 day(s) in a row     |
```

All completions of a habit

Full status of a habit

Tools

Python: Our app is built on the Python programming language, which is known for its simplicity, readability, and ease of use.

Git: We used Git, a popular version control system, to manage our codebase and collaborate on development

SQLite: a lightweight and high-performance database management system, to store user data securely and efficiently.

questionary: a Python library for creating interactive command-line interfaces, to build a user-friendly and intuitive interface for our app.

termcolor: a Python library for adding coloured output to the terminal, to create a visually appealing and easy-to-read interface for our app.

pytest: a Python testing framework, to catch bugs and errors early on, ensuring that our app is reliable and bug-free.

tabulate: a Python library for creating formatted tables, to create a clear and concise view of user data in our app.

Thanks!

Do you have any questions?
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