

# Report

## Reflect Rhythm

### The Idea

Speaking from experience, I often set myself up to start a new hobby or start a good habit that I have always wanted to have, but end up abandoning it after only a few days when I don't see immediate results. I always have to remind myself that just because a habit does not catch on immediately, or I am not the best at something on my first try, it does not mean I can't get better.

The initial idea for this project was to build an app that reassures you that bad habits (or lack of good habits) do not define who you are and that we all have our own processes that we have to go through to achieve our goals and get to the best versions of ourselves.

The aim was to show people that these feelings are valid and that by reflecting on them and recording your progress in your journey (ergo the diary and mood tracker calendar), you could gain motivation every day to finally do what you've always wanted to do.

### Problems

Even though I have gained some experience with coding in the last year, I still struggled coding for this project. I had to rely on ChatGPT for a lot of my troubleshooting problems. Moreover, I had to research a lot to find the functions I wanted the GUI to have.

In addition, there were some other features I wanted to include that I simply could not figure out how to implement with tkinter, so I had to settle for taking them out.

### Introduction to Application

Reflect Rhythm is a GUI application developed using the Tkinter library in Python. The application aims to help users track their habits, maintain a mood diary, and visualize their progress. The idea is to provide a simple yet effective tool for self-improvement and personal development, focusing on ease of use and functionality.

## Methodology

### *Design, Layout and Features*

The application consists of multiple pages that users can navigate between smoothly. The main pages include:

- Welcome page: Contains navigation buttons to various features such as the Habit Log, Progress Visualization, Mood Diary, and Mood Tracker.
  - Motivational Resources: Links to motivational music, quotes, and articles.
- Habit Log Page: Allows users to log their good and bad habits, view the list of habits, and increment their counts.
- Diary Page: Provides functionality to save and view diary entries.
- Progress Page: Displays graphs to visualize the progress of good and bad habits.
- Mood Tracker Page: A calendar interface to track and color-code mood entries.

### *Implementation*

- Main Page: Used Tkinter's `Frame` and `Button` widgets to provide navigation.
- Habit Log: Utilised dictionaries to store habit data and Tkinter widgets for user interaction.
- Diary: Used file input/output operations to save and load diary entries, and Tkinter's `Text` widget for input.
- Progress Visualization: Used the Matplotlib library to generate graphs and Tkinter's `FigureCanvasTkAgg` to display them.
- Mood Tracker: Implemented a calendar using Tkinter's `Button` widgets and tracked mood entries using color-coded buttons.

### *Limitations*

- The application currently uses a single diary entry file and habit tracking files, which may not scale well for multiple users.
- The mood tracker allows only color-coding, without detailed mood descriptions and there are a lot of limitations in regards to the color choosing process.
- The application is designed to be simple and lacks advanced features like user authentication or cloud storage integration.

## References

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  - [Python Diary App Tutorial](#) (YouTube tutorial by freeCodeCamp)
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  - [Simple Diary Program in Python](#) (GeeksforGeeks)
  - <https://pyseek.com/2023/04/create-a-personal-diary-in-python-using-tkinter/>
- **Graph Function (Matplotlib, Line 303-360 )**
  - [Matplotlib Tutorial: Plotting](#) (official Matplotlib tutorial)
  - [Creating a Line Chart with Matplotlib](#) (DataCamp tutorial)
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  - [Habit Tracker App with Python and SQLite](#) (YouTube tutorial by Tech With Tim)
  - [Python Habit Tracker](#) (GitHub repository)
- **Calendar Function (Line 439-551)**
  - [Python Calendar Module](#) (official Python documentation)
  - [Creating a Calendar with Tkinter](#) (YouTube tutorial by Sentdex)
  - [Python Calendar GUI](#) (GitHub repository)