Introduction

The objective of this project was to conceptualize and develop a functional habit-tracking application aimed at aiding users in the management, monitoring, and analysis of their personal routines. The system accommodates both daily and weekly cycles, fostering consistency and self-discipline through real-time feedback mechanisms and comprehensive habit analytics.

Technical Approach

The software application is fully built in Python using an object-oriented architecture with a modular structure. Data persists in a JSON file format, while the user interface is delivered via a dynamically rendered, visually engaging command-line environment. Essential libraries employed include PrettyTable for data visualization, Colorama for styled terminal output, and Python's intrinsic modules such as os, time, datetime, and shutil to facilitate storage management and data formatting.

Achievements and Challenges

The development of real-time tracking algorithms and an efficient countdown mechanism necessitated precise temporal calculations. Designing a command-line interface (CLI) that dynamically adjusts to terminal dimensions and re-renders with each command to emulate interactivity posed notable technical challenges, which were effectively addressed. The resultant version offers a user-centric, feature-rich tracking system. Each habit can be tailored with custom goals, cycle durations (daily or weekly), optional annotations, and dynamic progress metrics. The application updates after each interaction, providing a responsive user experience. Additionally, the system incorporates an automatic placeholder restoration feature when all habits are removed.

Features

- Add, check, and remove habits
- Choose between daily or weekly tracking cycles
- Countdown timers for each habit
- Best streak tracking per habit and overall
- Responsive CLI
- Dynamic table display and help commands

Conclusion

This project brought together useful tools for building habits with a thoughtful user interface, creating a unique command-line experience. It was a valuable opportunity to apply Python's object-oriented programming, file management, and temporal logic skills to develop a practical, real-world application.

GitHub Repository:
https://github.com/timafeibielawski/Project-Habit-Tracking-App