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Abstract for Finalization Phase

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Digital Detox Habit Tracking Application

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Data Analytics with Python

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Abstract – Digital Detox Habit Tracker

1. Project Objective and Concept

The *Digital Detox Habit Tracker* is a Python-based command-line (CLI) application designed to support users in building healthier digital habits. The goal is to help users reduce screen time, increase self-awareness, and maintain consistency in their digital detox routines. The tracker allows users to create, complete, list, analyze, and delete habits with either daily or weekly frequency. The concept was inspired by the need to promote balanced technology use through measurable and achievable habit formation.

2. Methodology and Approach

The project was implemented using *object-oriented programming (OOP)* principles. A central *Habit* class encapsulates all key attributes such as *name, periodicity, creation date, completion dates, and current streak,* as well as behaviors such as *marking completion, resetting habits, and calculating streaks.* Each method in the class is fully documented with Python docstrings to improve readability and maintainability.

The CLI interface was designed to be intuitive and text-based, allowing users to interact directly through numbered menu options. The project structure promotes modularity, separating logic for habit management, analytics, and persistence.

Automated *unit tests* were created using *pytest* to validate all critical functions, including *habit creation, completion, deletion, and analytics*. The successful test results confirm the program's correctness, reliability and robustness.

3. Tools, Resources, and Environment

The following tools and technologies were used:

- Programming Language: Python 3.13
- Testing Framework: pytest
- Development Environment: Visual Studio Code (VS Code)
- Version Control: Git & GitHub
- Documentation: README.md (installation, setup, and usage instructions)
- Virtual Environment: venv for dependency isolation.

All source files, tests, and documentation are hosted on GitHub:

https://github.com/oparedorothy4-maker/Digital-Detox-Habit-Tracker

4. Implementation and Results

The final version of the application provides a seamless experience for tracking digital habits. Users can:

- Add and remove habits with unique names and frequencies.
- Mark completion for specific days or weeks.
- View real-time statistics such as current streaks and average success rates.
- Analyze performance to identify consistency and areas for improvement.

All implementation functions were tested successfully using pytest, confirming the program's expected behavior. The code adheres to clean-code standards and object-oriented design principles.

5. Reflection

Working on this project helped me strengthen my skills in object-oriented programming, testing, and using Git for version control. I learned how to build features step by step, which made debugging easier. One main challenge was getting the streak logic to work correctly for both daily and weekly tracking, but I resolved it through testing and small code adjustments.

Overall, I am pleased with the outcome, as the app is clean, well-structured, and practical. It demonstrates how technology can promote healthier digital habits.