**Written concept;**

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This PDF will highlight the requirements and processes needed to develop the habit tracker application. Programming will be done using Object-oriented programming in Python.

The concept of a habit will be represented as a class, the habit class will be used as a blueprint for each individual habit, and the main features and capabilities of the habit tracker app (e.g., adding and checking off habits) will be represented as methods in the habit class.

A user authentication feature will be necessary to be able to store, analyze, and remove specific habits for each individual user, programming of the authentication feature will be implemented in a separate authentication class that will allow the users to sign up and log in.

A separate analytics module will be created that has functions to analyze and return habit information, like longest streak and habits with the same time periodicity, the analytics module will then be used in the analysis methods in the habit class.

**How data will be stored and retrieved**

A MySQL database will be created to store habit information as well as usernames and passwords, there will be 2 tables, A Users table to store the username and password of a user, a Habits table to store all relevant information about the habit (e.g., description, periodicity, streak, etc.) and, a Habit tracking table to track the completion of each habit based on the periodicity, A unique auto-incrementing identifier will be automatically assigned to each user and will be stored as a primary key in the Users table and as a foreign key in the Habits table, the presence of the unique identifier will allow storing, modifying, and retrieving habit information specific to a user, same with the habits identifier to be able to add tracking information for the habit.

A MySQL connector will be used in Python to connect the classes to the database and allow me to program methods (like the add habit method) to directly add, remove, retrieve, and modify table entries.

**How the user will navigate the application**

No graphical user interface will be implemented, users will be able to add, modify and retrieve habit information by inputting commands in the command terminal. The user will first need to either create an account or log in if they have an existing account, which will then navigate them to the main menu which will contain most of the functionality of the application. The status of the habit will be checked every time the user logs in and will renew the habits that have exceeded their due date and update the tracking information. The main menu will allow the users to either add a new habit, check off an existing habit, delete a habit, or generate reports specific to a habit. For generating reports, the user can choose which reports they want to generate, there will be 5 options, the user can either: return a list of all incomplete habits, return a list of all completed habits, check the longest streak of all active habits, check all habits with the same time periodicity, and check the longest streak ever for a given habit. The user will be able to go back and choose different options, the main menu page will also contain a quit option which automatically logs the user out.

Navigation of the application is designed to be very simple with the minimum number of pages required as it is a habit tracker app and must be very simple and easy to navigate with the least amount of clicks needed. The flowchart will further explain how the application will function.