Loop Habit Tracker

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Abstract

The Loop Habit Tracker application is designed to assist users in developing and tracking their habits, ultimately improving productivity and achieving personal goals. The app offers features such as habit creation, modification, and deletion, as well as reminders and detailed performance reports that track progress over time. This document outlines the functional and non-functional requirements, detailing the core functionalities that ensure the app is intuitive, secure, and performs optimally across various platforms. By helping users organize their daily routines and visualize their achievements, the app fosters self-awareness and supports long-term habit development.

Chapter 1

1 Introduction

This document contains a detailed summary of the functional and non-functional requirements for the "Loop Habit Tracker" application, which is intended to assist users in improving productivity by forming and tracking habits. The software aims to help users achieve their goals by organizing their daily routines and tracking performance trends over time. The following sections define the system's basic functions, including required functionalities and non-functional components that ensure the system runs quickly, securely, and is expandable for future upgrades.

2 Requirements

2.1 Functional Requirements

2.1.1 Track Habits

The system shall allow users to track habits: Users can add, change, and delete habits. Each habit can be set for a particular time interval (daily, weekly, or customized).

2.1.2 Notifications

The system shall send notifications to remind users of their habits: Users can set reminders, including selecting specific times of the day or week for notifications.

2.1.3 Performance Reports

The system shall generate performance reports: The system will create reports illustrating users' progress over time, such as completed habit streaks, skipped days, and overall completion rates.

2.1.4 Account Management

The system shall allow users to create accounts and log in: Users should be able to create new accounts using their email.

2.2 Non-functional Requirements

2.2.1 Optimal Performance

The system shall provide optimal performance: The application must be responsive, with a response time not exceeding two seconds under normal conditions.

2.2.2 Compatibility

The system shall ensure compatibility across platforms: The application must be fully compatible with iOS, Android, and major web browsers.

2.2.3 Usability

The system shall prioritize usability: The user interface must be intuitive, allowing users to navigate the application easily. Clear instructions must be provided for new users.

2.2.4 Data Security

The system shall maintain secure data storage: Users' data must be encrypted both in transit and at rest to protect sensitive information.

3 Program Tasks

3.1 Capturing Progress

Enable users to chronicle their daily endeavors with ease, watching their journey unfold with every entry.

3.2 Visualizing Achievements

Create visualizations, such as dynamic charts and progress bars, to show users' growth over time.

3.3 Offering Insights

Provide insights into behavioral patterns, revealing trends and offering nudges for improvement.

3.4 Setting Aspirations

Allow users to set both short-term milestones and long-term goals, helping them achieve personal aspirations.

3.5 Encouraging Rewards

Introduce reward systems to celebrate users' achievements and make the habit-tracking process enjoyable.

Chapter 2

4 Purpose of the Application

The "Loop Habit Tracker" is designed to help users improve productivity by developing and monitoring habits. The application addresses the need to organize daily routines and track progress over time, helping users achieve personal goals. Its primary function is to streamline habit management by allowing users to log habits, set reminders, and receive notifications while generating performance reports to visualize progress.

4.1 Improving behaviors:

The application aims to promote positive habits such as exercising, eating healthy food, drinking water (the daily need for water), reading, and other specific goals.

4.2 Increase self-awareness:

It helps users understand their habits and behavioral patterns by tracking and analyzing them.

4.3 Motivating users:

The application provides ways to motivate individuals through reminders and achievements.

5 Problems it solves

5.1 Lack of continuity:

It helps to overcome the problem of lack of continuity in adopting healthy or positive habits.

5.2 Poor planning:

It helps to develop executable plans by tracking progress and clearly setting goals.

6 Needs it addresses

6.1 The need for organization:

It helps individuals organize and improve their daily lives.

6.2 Desire to achieve goals:

Helps individuals achieve personal and professional goals by tracking progress.

6.3 Supporting mental health:

It contributes to enhancing mental health by organizing time and reducing anxiety related to not achieving goals.

7 Survey Results

Q1: Do you face challenges in tracking your daily or weekly goals?

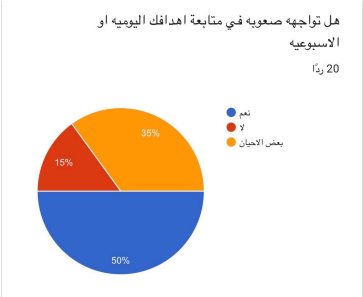

Figure 1: 50% of participants experience consistent difficulty in adhering to daily goals, while 35% encounter this intermittently, suggesting a demand for habit-tracking tools.

Q2: If you have used habit-tracking applications, do you think they have helped you organize your daily habits and acquire new, positive habits?

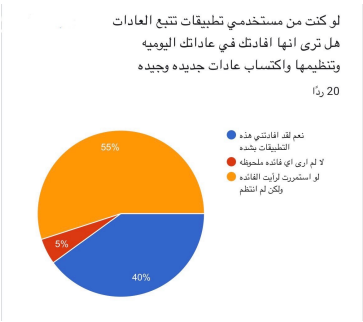

Figure 2: 55% of users believe habit-tracking tools will help achieve their goals, while 40% already see benefits. Only 5% found no benefit.

Q3: Do you prefer a simple, easy-to-use interface or more advanced functionality?

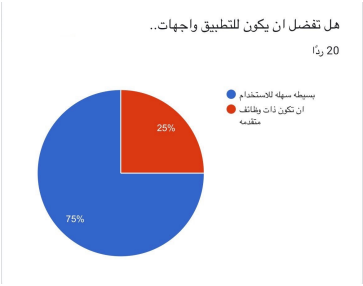

Figure 3: 75% prefer simple, easy-to-use interfaces, while 25% favor more advanced functions.

Q4: How do you think a habit-tracking application could improve your productivity?

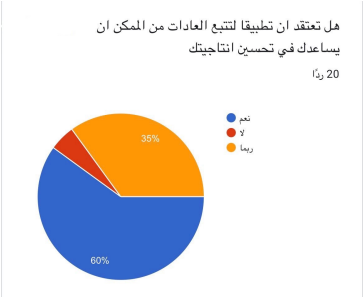

Figure 4: 60% of non-users believe a habit-tracking app could enhance productivity, while 35% were uncertain, and 5% were skeptical.

Q5: What features do you find most valuable in habit-tracking applications?

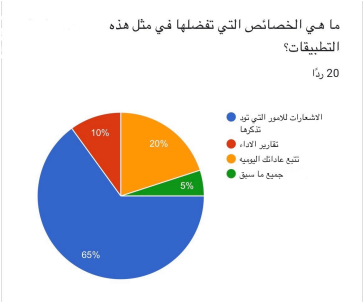

Figure 5: 65% prefer receiving notifications as reminders, 20% prefer tracking daily habits, and 10% prefer performance reports.

8 Similar Applications

Several similar habit-tracking applications already exist:

- **Habitica:** A gamified habit tracker that rewards users with virtual incentives.
- **Streaks:** A simple habit tracker for managing daily tasks with a minimalist design.

8.0.1 Advantages

- **Habitica:** Engages users with gamification, making the process enjoyable.
- **Streaks:** Offers a simple interface focused on ease of use.

8.0.2 Disadvantages

- **Habitica:** Gamification may overcomplicate the experience for those seeking simplicity.
- **Streaks:** Limits the number of habits that can be tracked simultaneously.

8.0.3 Comparison with Loop Habit Tracker

"Loop Habit Tracker" provides robust performance tracking and reporting capabilities, surpassing simpler apps like "Streaks." It may lack Habitica's gamification but focuses on detailed analytics and productivity, offering a comprehensive tool for long-term habit monitoring.

Application	**Advantages**	**Disadvantages**
Habitica	- Engages users with gamification, making the process enjoyable.	- Gamification may overcomplicate the experience for those seeking simplicity.
Streaks	- Offers a simple interface focused on ease of use.	- Limits the number of habits that can be tracked simultaneously.
Loop Habit Tracker	- Provides robust performance tracking and reporting capabilities.	- Lacks the gamification features found in Habitica.

Table 1: Comparison of Habit-Tracking Applications

Chapter 3

9 Data Model

We used 4 drawings to describe how the application works, how some operations work in it, and to describe the components of the application: We used an activity diagram to describe the process of adding a new habit in the app. And also a sequence diagram to fully describe the process flow in the application. As well as a software Architecture diagram to describe the 4 layers of the application, And also the entity and relationship diagram to describe the relationships between entities.

9.1 Activity Digram for Loop Habit Tracker Application:

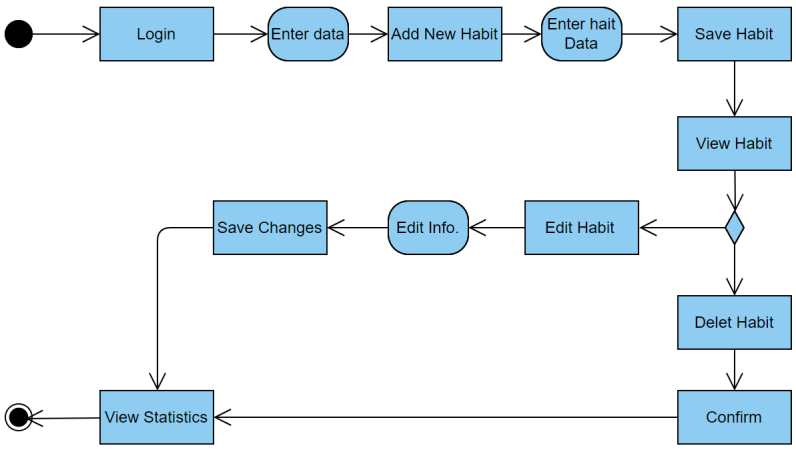

Figure 6: Process flow for the habit tracking application: The user begins by logging into the application by entering his data, then from the user interface he goes to the option to add a new habit (+), then he enters the habit data and then saves it, after that he reviews the habit he added and chooses the option to delete the habit. Or modify the habit, when choosing to modify the habit, the user modifies the habit information and then saves it, or when choosing to delete the habit and confirming its deletion, and at the end the habit statistics are displayed.

9.2 Sequence Digram for Loop Habit Tracker Application:

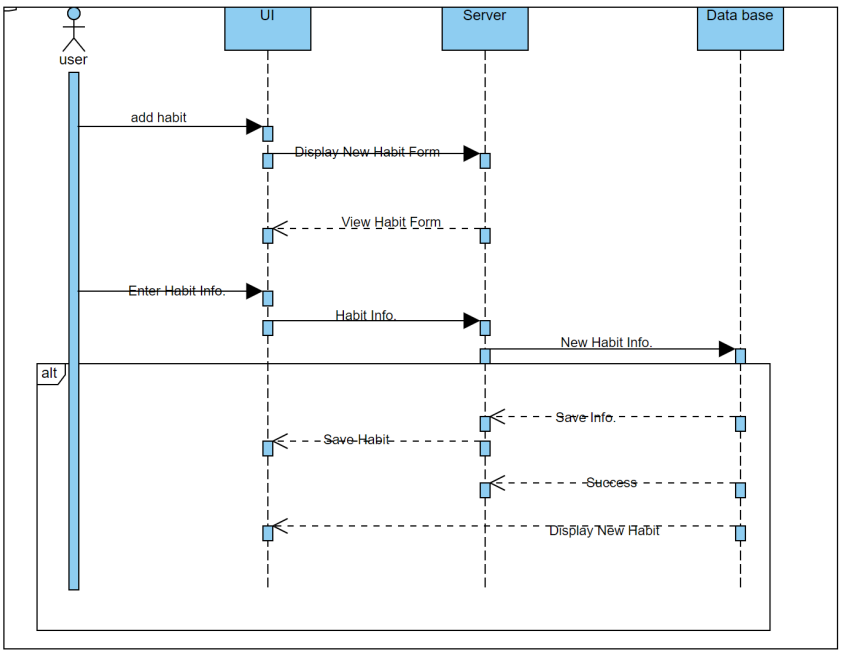

Figure 7: The process of adding a new habit: The user begins by choosing a new habit from the user interface. The user interface requests the new habit form from the server and it is displayed in the interface. Then the user enters the new habit information in the interface and it is sent to the server and then to the database. Then the database The data saves the information, the server saves the habit in the interface, and finally the new habit is displayed in the user interface.

9.3 Software Architecture Diagram

The Software Architecture of the "Loop Habit Tracker" consists of the following layers:

- **Frontend Layer:**
  - Mobile App : User interface for mobile devices.
  - Web App : Accessible via web browsers.
- **Backend Services Layer:**
  - Authentication Service: Manages user login and registration.
  - Habit Tracking Service: Handles habit creation and management.
  - Notification Service: Sends reminders to users.
  - Report Service: Generates performance reports.
- **Data Layer:**
  - Database : Stores user data, habits, and reports.

- **Notification System:**
  - Notification System (FCM): Delivers notifications to users.

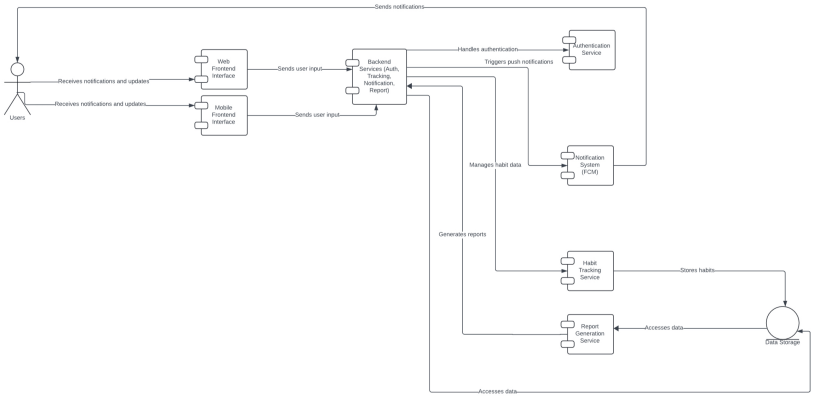

Figure 8: Software Architecture Diagram

9.4 Entity-Relationship Diagram (ERD)

The ERD for the "Loop Habit Tracker" describes the database structure:

- **Entities:**
  - **User:** Represents app users.

    Attributes: UserID (PK), Email, Password, Name.
  - **Habit:** Tracks user habits.

    Attributes: HabitID (PK), UserID (FK), HabitName, Frequency.
  - **Report:** Stores habit performance data.

    Attributes: ReportID (PK), UserID (FK), HabitID (FK), CompletionRate.
  - **Notification:** Represents habit reminders.

    Attributes: NotificationID (PK), UserID (FK), HabitID (FK), Message.
- **Relationships:**
  - **User to Habit (1:N):** One user can have multiple habits.
  - **Habit to Report (1:N):** Each habit can have multiple reports.
  - **User to Notification (1:N):** Users can receive multiple notifications.
  - **Habit to Notification (1:N):** Each habit can generate multiple notifications.

This ERD ensures data integrity and clarifies relationships between the system's key components.

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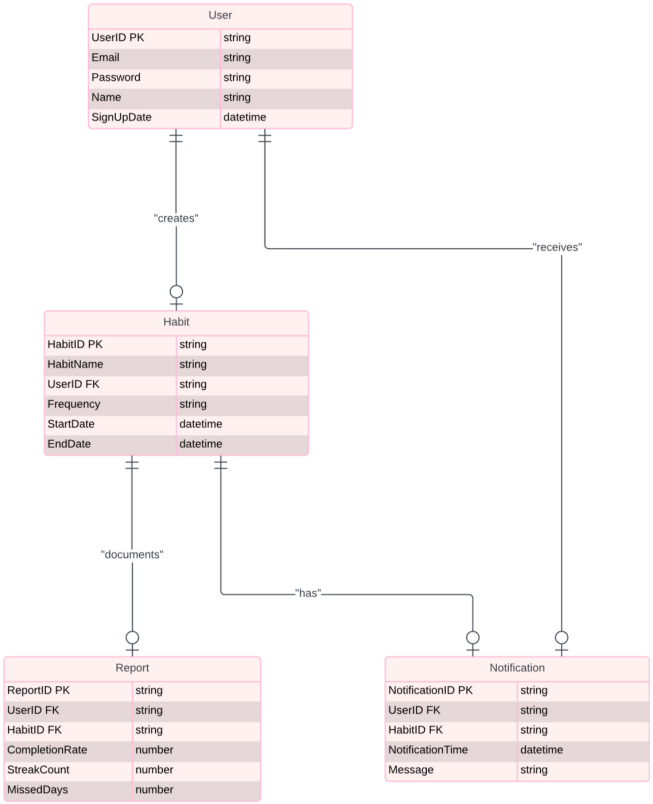

Figure 9: Entity-Relationship Diagram (ERD)

10 Version Control

In this section, we discuss our version control practices and how we have managed our project using Git and GitHub. The following screenshots illustrate our work on GitHub, showcasing the various commits and collaborative efforts made throughout the project.

10.1 Visual Documentation

In this part, we include images that show important stages of our project development. These screenshots provide a clear view of how we used GitHub for version control and how we collaborated with each other during the project.

These images help to illustrate our version control process and show how we worked together to achieve our project goals.

11 Conclusion

The Loop Habit Tracker provides a comprehensive solution for users aiming to enhance their productivity and achieve goals through effective habit management. With features like personalized reminders, progress reports, and an intuitive user interface, the app streamlines the

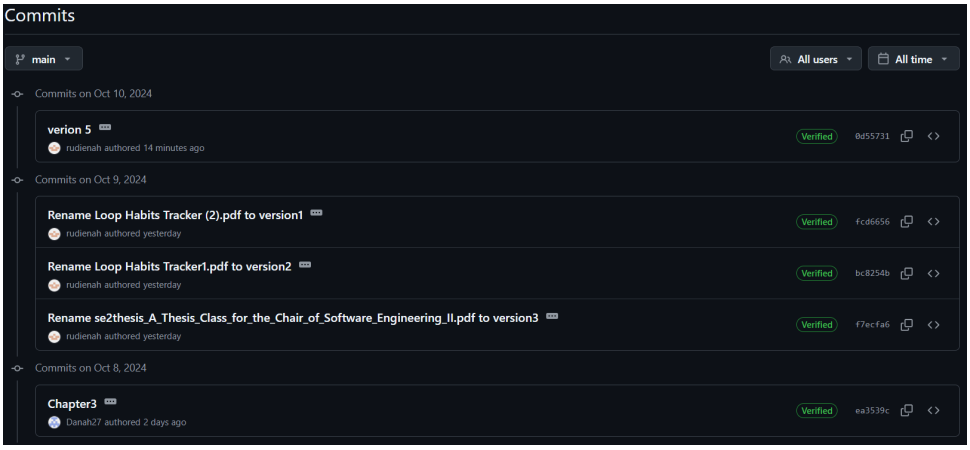

Figure 10: Screenshot 1

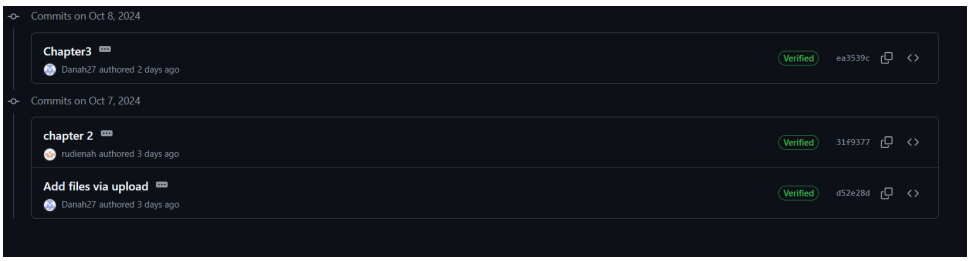

Figure 11: Screenshot 2

process of building and maintaining positive habits. It also contributes to better time management and mental well-being by offering insights into behavioral patterns and encouraging consistency. As the application evolves, it remains scalable, ensuring it can meet future demands while maintaining a user-centric approach.

12 Reference

References

[1] iSoron. (n.d.). uhabits - Loop Habit Tracker. Retrieved from https://github.com/iSoron/uhabits This GitHub repository contains the source code and documentation for the Loop Habit Tracker project.

[2] Lucidchart. (n.d.). Lucidchart. Retrieved from https://www.lucidchart.com This diagramming tool was used to create the data model and architectural diagrams, along with helpful tutorials.

[3] Visual Paradigm. (n.d.). Visual Paradigm. Retrieved from https://www.visual-paradigm.com This website provides tools and resources for requirements engineering and was specifically used to create sequence diagrams and activity diagrams.

A Appendix A: Documentation Methodology

This document has been prepared using a structured academic and technical writing approach. The content follows professional standards in technical documentation, ensuring precision, clarity, and logical organization throughout. All sections are formatted in accordance with established guidelines, with a focus on accurate use of technical terminology and proper citation of sources. The writing style is formal and concise, adhering to best practices in academic and technical communication.

B Appendix B: Tools and Resources Used

The following online tools were utilized for creating diagrams and visual representations:

- Diagrams were created using the tool available at: Visual Paradigm Online.
- Additional diagrams were developed using: Lucidchart.

Documentation for the project is maintained in the GitHub repository, available at: GitHub: Loop Habit Tracker.