Study App Development

Research Background and Purpose

In today's society, information devices such as smartphones and tablets are widely used. Managing study plans and monitoring progress on personal devices enables users to create tailored plans and visually track their results. This approach is gaining attention as an effective way to enhance learning outcomes.

Development Environment

We are developing this application using Android Studio 2024.1.1 and Kotlin. Testing is conducted on both physical devices, such as the Galaxy S22, and virtual devices like the Pixel XL emulator. We utilize Git and GitHub for version control.

Demand for Local Applications

Local applications offer higher performance and stronger security compared to web-based applications. Using these advantages, we aim to develop a study application that meets users' needs and expectations, ensuring high satisfaction levels.

Continuous Improvement

To enhance the application, we will continuously gather and analyze user feedback through regular surveys. This feedback will help us find problems and discover hidden needs, allowing us to make specific improvements and gradually enhance the app’s features.

Database Design

The application uses an SQLite database named “study_app.db” which includes tables such as “tasks”, “events”, “study_time”, and “sleep_data”, makes data easy to manage and use.

Application Components

The app is organized around a Main Activity, which serves as the central controller, allowing smooth access to each section:

1. Home: Shows a summary of study progress.
2. Schedule: Helps plan study time.
3. Study Time: Records how long users’ study.
4. To-Do List: Helps manage tasks.

Utilizing the Sleep API

The app uses Sleep API to analyze user’s sleep data. The process involves:

1. Permission Request: We need to obtain user consent by clearly explaining the purpose and benefits of accessing sleep data.
2. API Registration and UI Design: After getting permission the app connects to the API and creates a simple design to show sleep data clearly.
3. Unsubscribing: If users want to stop, the API is turned off quickly.

Prospects for the Future.

We aim to enhance convenience and usability through innovative technologies:

- Implementing image recognition for schedule entry.

- Allowing users to customize To Do List templates.
- Improving notifications so that users will not miss important study reminders.
- Designing an intuitive and user-friendly UI for smooth interaction.

Advanced Data Analysis

The app will have strong data analytics to find each user’s learning habits. This will help give personalized support and make learning more effective and efficient.