Study App Development

Sakura High School

Kuda Tomoya, Watanabe Masaya

Ⅰ.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.

Ⅱ. Development Environment

Android studio 2024.1.1

Main Code: Kotlin

Version Management: Git/GitHub

Debug Device: Galaxy S22, Pixel XL (visual terminal)

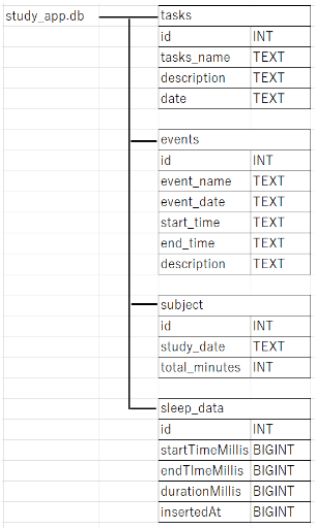
Ⅲ. App Components

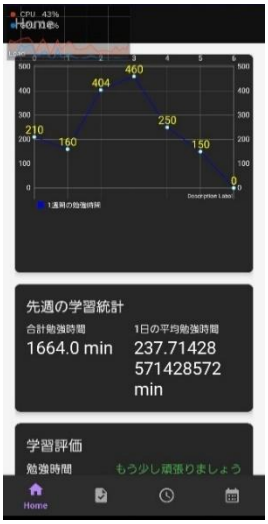
Components	explanation
MainActivity	Acts as the central hub controlling the app and enabling quick access to each fragment.
HomeFragment	Shows a summary of study progress.
ScheduleFragment	Helps plan study time.
StudyTimeFragment	Records how long users' study.
ToDoListFragment	Helps manage tasks.

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

Ⅳ. Database Design

We use a SQLite database named "study_app.db" which has tables (tasks, events, study time, sleep data). There are methods for app Activity to operate CRUD easily.





Ⅴ. Utilize Sleep API

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

First, we need to obtain user consent by clearly explaining the purpose and benefits of accessing sleep data. After getting permission the app connects to the API and creates a simple design to show sleep data clearly. If users want to stop, the API is turned off quickly.

Ⅵ. Prospectus 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.

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.

References

https://developer.android.com/courses?hl=ja
https://www.udacity.com/enrollment/ud9012, https://www.javadrive.jp/android/#google_vignette
https://developer.android.com/codelabs/android-sleep-api?hl=ja