**Report on “Habit Tracker” an application project  
by:  
21SW27  
21SW75  
21SW106**

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* **Real World Problem Identification**

In our fast-paced society, many individuals struggle with establishing and maintaining good habits. The pressures of daily life, combined with the multitude of distractions, can make it challenging for people to stick to their goals. Whether it’s committing to regular exercise, dedicating time to study, or adopting healthier eating practices, the journey toward consistency often feels overwhelming. A significant barrier for many is the lack of a straightforward method to track their progress effectively. Without this capability, individuals may feel disheartened, leading to frustration and a loss of motivation. This habit-tracking app aims to tackle these issues by providing a simple yet powerful tool for users to monitor their habits, encouraging consistency and ultimately helping them achieve their personal goals.

* **Proposed Solution**

To address the challenges of habit formation, we developed a habit-tracking application designed to empower users in their journey toward consistency and self-improvement. The app allows users to easily add new habits, set specific goals for time commitment, and track their progress over time. This approach promotes accountability and provides a visual representation of users' efforts.

**The key features of the app include:**

Adding New Habits: Users can specify the name of the habit they wish to develop and the target time they aim to commit to each day. This functionality encourages users to set clear and achievable goals.

Editing Habits: If users need to adjust their goals or update the details about a habit, they can do so with a simple and intuitive interface, ensuring flexibility in their tracking process.

Deleting Habits: Users have the option to remove habits that no longer align with their goals, allowing for adaptability in their habit-building journey.

Progress Tracking: The app diligently tracks the time spent on each habit, enabling users to visualize their efforts and maintain motivation. By seeing their progress, users are more likely to stay committed to their goals.

Overall, this app provides a structured yet flexible approach to habit tracking, making it easier for users to stay on course while promoting a healthy habit-forming culture.

* **Responsive User Interfaces**

The app is designed with responsiveness in mind, ensuring a seamless experience across various devices. Whether users are on a mobile phone, tablet, or accessing the app through a web browser, the interface remains intuitive and user-friendly. Although we do not have screenshots at the moment to showcase the design, we plan to present the app in person. During this demonstration, we will illustrate how the app adjusts to different screen sizes and functionalities, emphasizing its versatility and accessibility for users on various platforms.

* **Data Storage**

For effective data management, we chose **Hive** as the primary database solution for several important reasons:

**Cross-Platform Compatibility**: Hive stands out for its ability to function effectively on both web and mobile platforms. Unlike SQLite, which has notable limitations when used in web applications, Hive provides a robust solution that ensures a consistent user experience regardless of the device being utilized.

**Performance and Efficiency**: Hive is optimized for speed and can handle key-value pair storage efficiently. This capability is particularly beneficial for a habit-tracking app, where users frequently store and retrieve data. Quick access to their habit information encourages users to engage with the app more regularly and contributes to a smoother user experience.

**Reliability and Data Consistency**: During development, we encountered some issues with data inconsistency, particularly when the app was used on Chrome. However, Hive generally provides a reliable storage solution. In contrast, SQLite’s limitations on the web could have led to further complications. Hive's cross-platform capabilities help mitigate these risks and ensure a smoother user experience.

In summary, our choice of Hive not only aligns with our goal of providing a robust and user-friendly experience but also addresses the specific challenges we faced with other database solutions.

* **APIs/Packages/Plug-ins**

The app leverages several packages to enhance its functionality, including:

**hive\_flutter**: This package facilitates integration between Hive and Flutter, allowing for efficient data storage and retrieval on both mobile and web platforms. Its use is essential for ensuring that users can maintain their data even after closing and reopening the app. By utilizing this package, we ensure that the app runs smoothly and meets user expectations for performance.

* **Issues and Bugs Encountered and Resolved during Development**

Throughout the development process, we encountered several challenges, primarily related to database functionality:

**Database Performance on Chrome**: Initially, we faced difficulties with the database when accessing the app on Chrome. This issue highlighted the limitations of SQLite in web environments, where it often struggles to maintain performance under varying conditions. By transitioning to Hive, we were able to resolve these performance issues and ensure that the app functioned smoothly across all platforms, providing users with a consistent experience.

**Data Inconsistency**: There were instances where the data displayed inconsistently, particularly after updates or deletions. To address this, we implemented a system to reload the habit list after every change, ensuring that users would see the most current data. This approach not only improved user experience but also reinforced the reliability of the app.

By tackling these challenges head-on, we ensured that our app is both reliable and efficient, ultimately providing a positive user experience.