UNIVERSITY MALAYSIA TERENGGANU

FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

FRAMEWORK-BASED MOBILE

APPLICATION DEVELOPMENT

CSM3114

Project 1

Title of the Project

E-Merit System

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[Mobile Computing]

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Executive Summary of the Prototype

The e-Merit app prototype is a mobile application designed to streamline merit tracking and event engagement for UMT students. It offers a user-friendly interface with the following key functionalities:

Key Features:

Event Discovery and Merit Tracking: Students can easily browse upcoming events added by admins and view their associated merit values, enabling them to strategically participate in activities that align with their interests and merit goals.

Admin Event Management: Admins have the ability to create, read, update, and delete (CRUD) events within the app, ensuring a centralized and up-to-date event database for student access.

Target Audience:

UMT Students: The primary focus is on providing a seamless platform for UMT students to discover events, track merits, and enhance their overall engagement in campus activities.

Value Proposition:

Simplified Merit Tracking: Offers a centralized and organized system for students to track their earned merits, promoting awareness of their progress and achievements.

Enhanced Event Engagement: Facilitates discovery and participation in events, potentially leading to increased student involvement and a more vibrant campus community.

Prototype Design

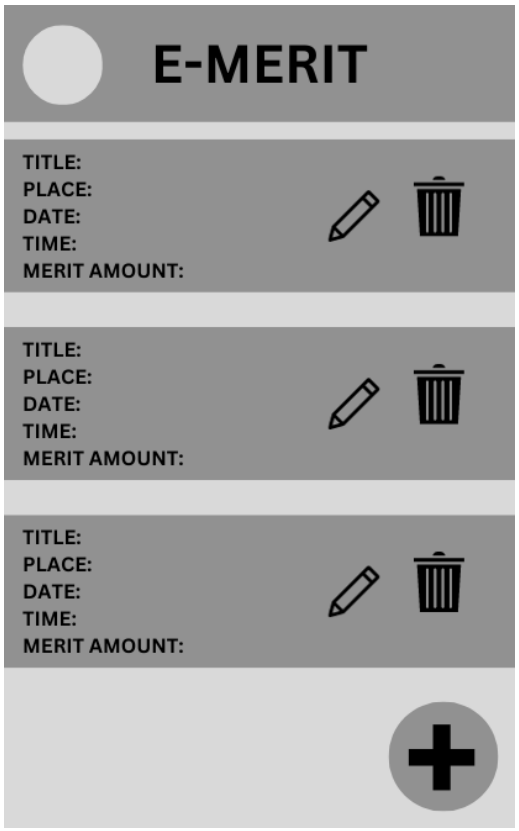

Figure 1.1

Figure 1.2

Figure 1.3

Figure 1.4

UI for the Application

Main

Figure 2.1

Add Event

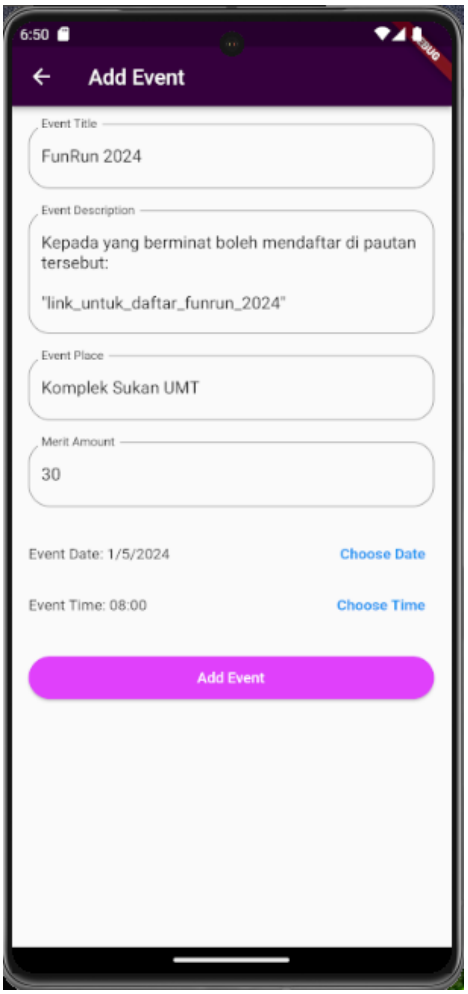

Figure 2.1

Main

The main screen serves as the central event hub, displaying a clear list of upcoming events with key details like title, date, and merit value. Each event card has icons for editing and deleting, while a floating "+" button for add new events.

Add Event

The add event screen presents a well-structured form for event creation, guiding users through essential details with clear text fields, validation checks for completeness, and a "Add Event" button to add the event to the list after completing the form.

Event Details

Figure 2.3

Update Event

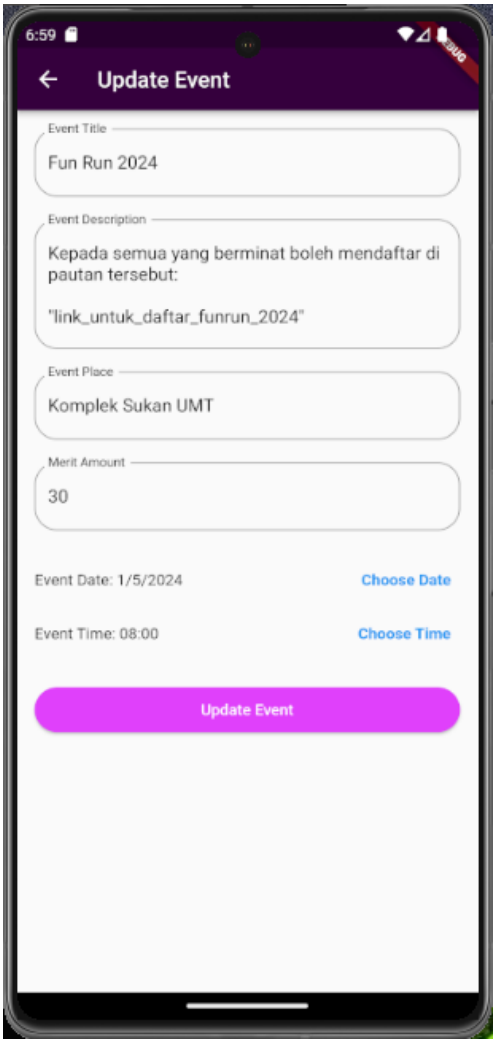

Figure 2.4

Event Details

The event details screen showed the full information for the event that was chosen by user.

Update Event

The update event screen is like a add event screen, but instead of starting empty, it already shows all the event's information previously. This makes it super easy to edit or update any mistakes that has been done.

Potential Commercial Value and Pricing of the Prototype

The e-Merit app prototype demonstrates potential commercial value in several ways:

Commercial Value:

Increased student engagement: By facilitating event discovery and merit tracking, the app can encourage students to participate in more campus activities, leading to a more vibrant and engaged student body. This has indirect benefits for the university, such as improved student satisfaction, retention, and brand reputation.

Enhanced event management: The app streamlines event creation, organization, and communication for administrators, making event planning more efficient and effective. This saves time and resources for the university, ultimately reducing costs.

Potential for data insights: The app can collect valuable data on student preferences, event attendance, and merit engagement. This data can be used to gain insights into student behavior and inform future decisions about event planning, merit allocation, and campus initiatives.

Scalability and customization: The app can be adapted and scaled to cater to different educational institutions or organizations with merit-based systems. This opens up potential for wider market reach and additional revenue streams.

Pricing Factors:

Development and maintenance costs: The cost of developing and maintaining the app needs to be covered by the chosen pricing model.

Market competition: Researching existing solutions in the education or merit-based software market can help determine competitive pricing strategies.

Target audience and value proposition: Pricing should be tailored to the specific needs and budgets of the target audience, ensuring the app offers a perceived value that justifies the cost.

Lesson Learned

This Flutter project offered valuable lessons in several key areas:

Functional Efficiency:

- Implementing CRUD operations without a database demonstrated the potential of lightweight data structures for efficient data manipulation and user interaction. Network image handling techniques showcased effective strategies for seamless image loading and display, particularly with caching for optimized performance.
- Implementing real-time validation for new event additions ensured data integrity and prevented invalid entries, leading to a cleaner and more manageable data set.

Code Optimization and Scalability:

- While the project functioned well, analyzing the code structure and error handling mechanisms could reveal opportunities for improvements in maintainability and resilience. Considering the possibility of future growth, exploring alternative data storage solutions like databases would provide valuable insights into scalability and long-term data management.

Conclusion

In conclusion, e-Merit app help students at UMT discover and engage in events to earn merit points. Before it was introduced, there was no platform or websites that students could go to find out about activities or programs at the university. This app bridges that gap, offering a comprehensive directory of events within UMT.

Finally, the e-Merit app serves as a catalyst for holistic student development within UMT, promoting engagement and achievement beyond the classroom. By showcasing detailed event information and the corresponding merit points upon participation, students can make informed choices aligned with their interests and academic goals. This not only simplifies the process of event selection but also encourages greater participation in extracurricular activities.

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