



UNIVERSITI MALAYSIA TERENGGANU

CSM3114 FRAMEWORK-BASED MOBILE APPLICATION DEVELOPMENT (K1)

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**BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH
HONOURS**

FINAL REPORT

“UMT STUDENT TASKHUB: TASK MANAGER”

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Executive summary of the prototype

The prototype developed using the Flutter framework represents a pivotal step toward creating a comprehensive task management application. By adeptly integrating state management via the Provider package, the application ensures real-time updates and streamlined interactions, enhancing user engagement and functionality.

The core components, including the TaskProvider class and distinct UI screens such as DashboardScreen and TasksScreen, exemplify a cohesive approach to task management, facilitating seamless operations from task addition to deletion. Furthermore, the prototype underscores a commitment to user-centric design, featuring a responsive interface and intuitive navigation elements. This foundational model sets a robust precedent for future iterations, emphasizing scalability, efficiency, and an optimal user experience as cornerstones for further development and commercial viability.

Prototype design

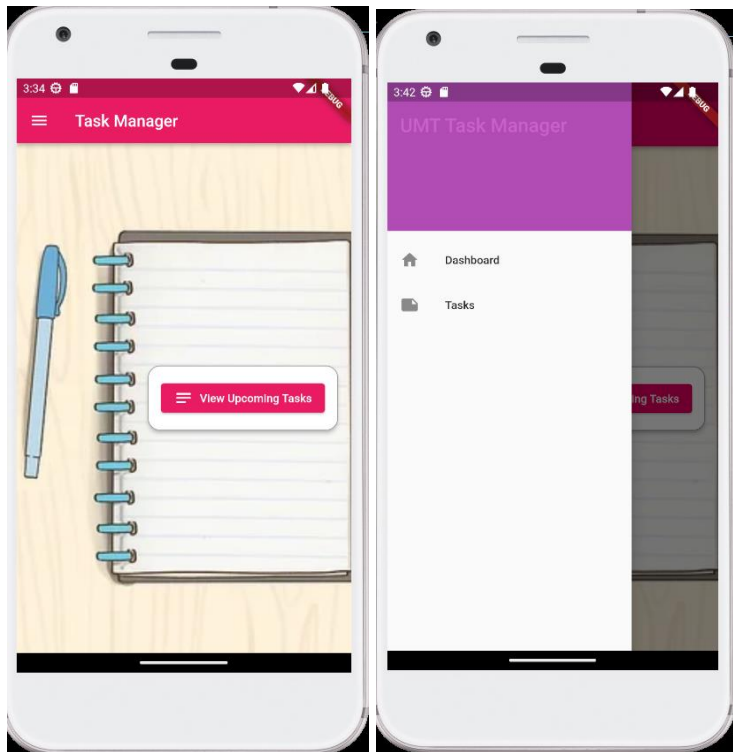


Figure 1 Dashboard Screen and Drawer Navigation for Task Manager App

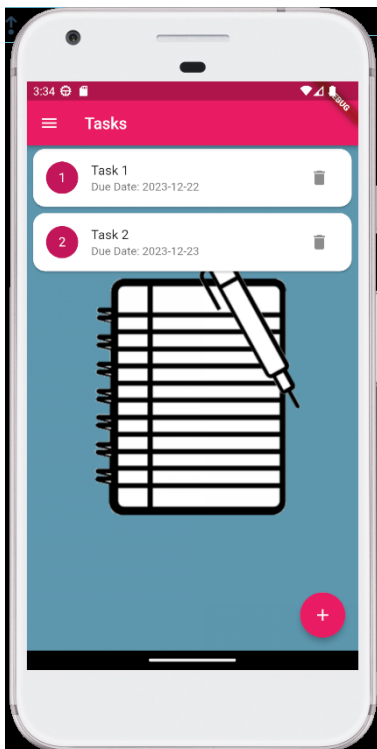


Figure 2 Task Screen for Task Manager

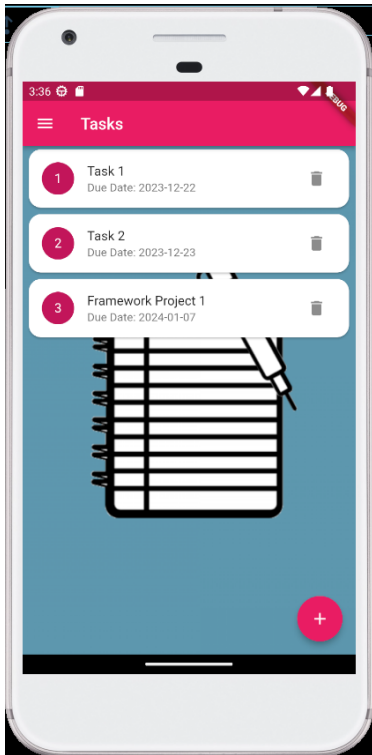


Figure 3 Task Screen after Add Task for Task Manager



Figure 4 Task Screen after delete Task 1 for Task Manager

Wireframe

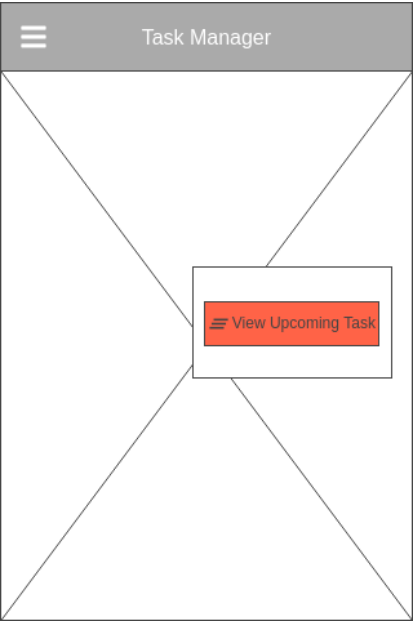


Figure 5 Dashboard Screen

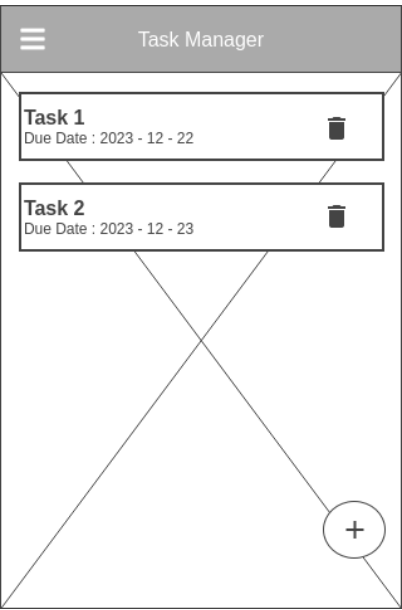


Figure 6 Task Screen

The UI for application with explanation



Dashboard Screen:

Background Image: The background image enhances the visual appeal and establishes a thematic connection with the application's purpose.

Navigation Button: The "View Upcoming Tasks" button provides a clear call-to-action, guiding users to the primary functionality of the app.

Drawer Navigation: The drawer offers intuitive navigation options, ensuring users can easily explore different features and sections.



Tasks Screen:

Task List: The organized display of tasks ensures users can quickly identify and manage their tasks effectively.

Delete Functionality: The ability to delete tasks with a simple tap streamlines the task management process, enhancing user productivity.

Add Task Dialog: The dialog-based approach to adding tasks provides a user-friendly interface, allowing users to input task details seamlessly.

Potential commercial value and the pricing of the prototype

Commercial Value

The prototype establishes a robust foundation for a task management solution with significant commercial potential. It caters to a broad spectrum of users, from individuals seeking to organize personal tasks to teams collaborating on complex projects. By prioritizing user-friendly interfaces, real-time updates, and efficient data management, the application addresses key pain points in task organization and productivity. Furthermore, the modular architecture and scalable design principles ensure adaptability to evolving user requirements and market dynamics. This versatility positions the solution as a viable asset for various industries and user demographics, fostering growth opportunities and competitive differentiation in the marketplace.

Pricing Strategies

Subscription Models:

Implementing subscription-based access offers a structured revenue stream while aligning with user preferences for customizable features and scalability. By introducing tiered pricing models based on functionality, user capacity, and additional value-added services, the application can cater to diverse user segments, from individual users to enterprise clients. This approach incentivizes long-term user engagement, fosters customer loyalty, and facilitates continuous revenue generation through recurring subscriptions. Additionally, incorporating promotional offers, bundled packages, and flexible payment options can enhance affordability and accessibility, further enhancing the solution's commercial viability.

Freemium Model:

Adopting a freemium model presents an opportunity to broaden the user base by offering essential features at no cost, enticing users to explore the application's capabilities without initial financial commitment. This strategy facilitates user acquisition, fosters brand awareness, and encourages user engagement through trial usage. To monetize the platform effectively, introducing premium features, advanced functionalities, or exclusive content through in-app purchases or subscription upgrades can incentivize users to transition to paid tiers. Furthermore, leveraging targeted marketing campaigns, referral programs, and user analytics can optimize conversion rates, maximize revenue potential, and maintain a

sustainable business model while accommodating diverse user preferences and budget constraints.

Lesson learned

State Management:

The incorporation of robust state management solutions, particularly utilizing the Provider package, is paramount in ensuring a seamless user experience and efficient application functionality. By centralizing state logic and data management, the application facilitates real-time updates, enhances responsiveness, and mitigates potential inconsistencies across various components and screens. The Provider package's inherent capabilities, such as `ChangeNotifier`, enable streamlined data flow, synchronization, and communication between widgets, promoting modularity, scalability, and maintainability. This approach not only optimizes performance but also empowers developers to implement complex features, integrate third-party services, and adapt to evolving user requirements with ease and precision.

UI/UX Design:

The emphasis on user-centric design principles, encompassing intuitive navigation, aesthetic appeal, and accessibility, is foundational to fostering an engaging and enjoyable user experience. By prioritizing usability, consistency, and visual coherence, the application resonates with user expectations, minimizes cognitive load, and promotes efficient task completion. Incorporating intuitive navigation patterns, responsive layouts, and interactive elements enhances user engagement, facilitates information retrieval, and encourages prolonged usage. Furthermore, adhering to accessibility guidelines and accommodating diverse user demographics ensures inclusivity, compliance with regulatory standards, and broadens the application's reach, fostering brand loyalty, and competitive differentiation in the marketplace.

Data Management:

Effective management of data structures, coupled with comprehensive CRUD (Create, Read, Update, Delete) operations, underscores the importance of data integrity, security, and performance optimization. By employing efficient data modelling techniques, database design principles, and data normalization strategies, the application ensures consistent, reliable, and scalable data storage and retrieval capabilities. Implementing robust data validation, error handling, and synchronization mechanisms mitigates risks associated with data inconsistencies, redundancy, and corruption. Furthermore, integrating caching mechanisms, indexing strategies, and data encryption protocols enhances performance,

facilitates rapid data access, and safeguards sensitive information, fostering trust, reliability, and compliance with data privacy regulations.

Conclusion

In conclusion, the prototype stands as a foundational pillar in the journey towards crafting a robust task management application primed for substantial commercial success. Its meticulous focus on user experience, functionality, and scalability highlights its potential to cater to a diverse spectrum of users, from individuals aiming for organizational efficiency to enterprises seeking collaborative project management solutions. Prioritizing user-centric design, intuitive navigation, and aesthetic appeal, the prototype encapsulates a seamless and captivating user interface, transcending traditional boundaries and setting a precedent for engaging user experiences.

Additionally, the prototype's commitment to data management excellence, including comprehensive CRUD operations, data integrity safeguards, and performance optimization, fortifies its reliability, security, and scalability attributes. This holistic development approach harmoniously blends technological innovation, industry best practices, and user-centric design principles, laying the groundwork for future enhancements, advanced features, and alignment with evolving market trends. Embracing industry standards, regulatory compliance, and quality assurance protocols, the prototype exemplifies a dependable, secure, and scalable solution capable of adapting to dynamic technological landscapes, competitive dynamics, and user preferences. By fostering innovation, collaboration, and iterative refinement, the application is poised to redefine industry benchmarks, empowering users with unparalleled productivity, efficiency, and success.

References

1. *Flutter documentation* Flutter. Available at: <https://docs.flutter.dev/> (Accessed: 17 December 2023).
2. *Task Manager. ChatGPT*. Retrieved December 17, 2023, from <https://chat.openai.com/c/bc356dba-68be-4ed4-983e-f4a39522d566>
3. *expense_app* (Lab Dr Mohamad Nor)

Link GitHub

1. https://github.com/FathiahIzzati/task_app