

# **RESEARCH ON SMART TASK MANAGER MOBILE APPLICATION USING ANDROID JETPACK COMPOSE**

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## **1. ABSTRACT**

Task management is an important part of daily life. Many people face difficulty in organizing and tracking their tasks effectively.

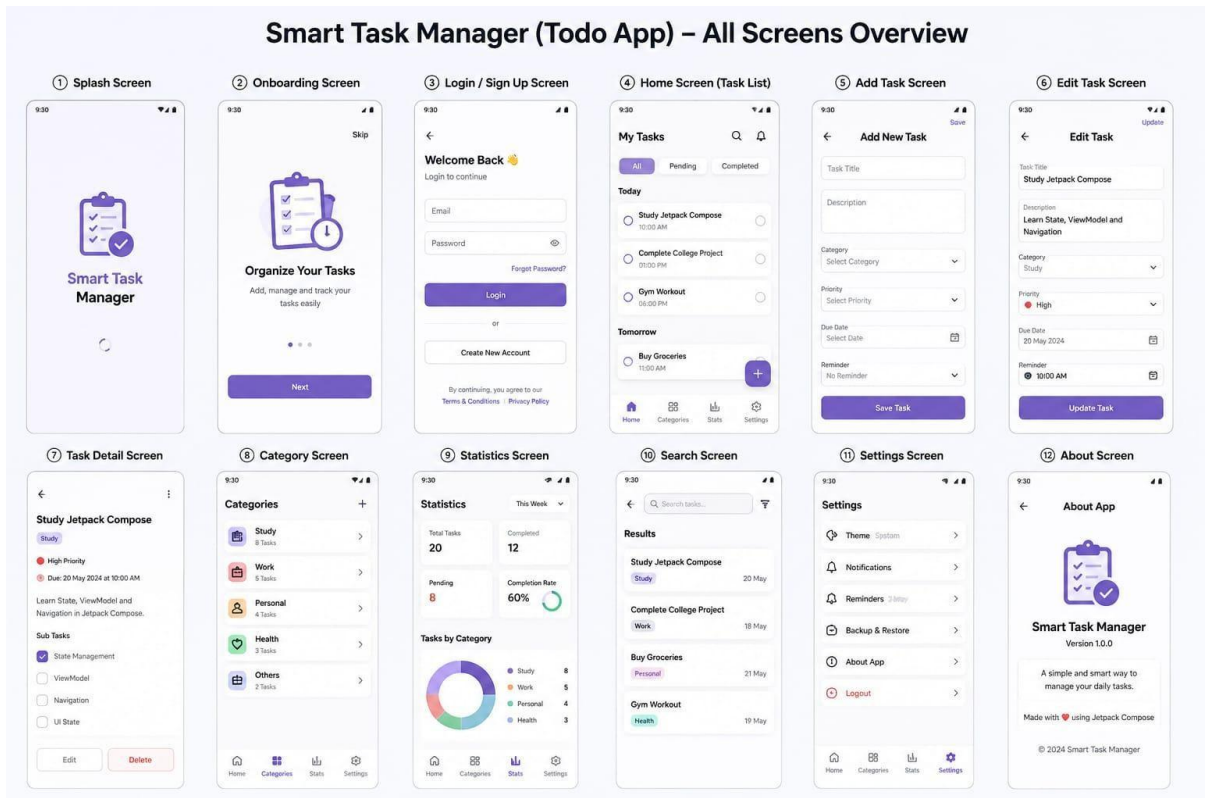
This project presents a Smart Task Manager mobile application developed using Android Jetpack Compose. The application allows users to add, update, delete, and manage tasks with features like priority, due date, category, and reminders. The app uses MVVM architecture and Room Database for offline storage. It provides a simple, fast, and user-friendly solution for managing daily tasks efficiently.

## **2. INTRODUCTION**

The rapid growth of digital technology has increased the need for effective task management systems. Managing daily activities using traditional methods such as paper notes and reminders is often inefficient and time-consuming. To solve this problem, the Smart Task Manager mobile application is developed using modern Android technologies.

The application helps users organize, manage, and monitor their daily tasks efficiently through a simple and user-friendly interface. Users can create tasks, update task information, assign priorities, set due dates, organize tasks into categories, and search tasks easily.

The project is developed using Kotlin and Jetpack Compose while following the MVVM architecture pattern. Room Database is used for offline storage, allowing users to access and manage tasks without internet connectivity. The application aims to provide a reliable, modern, and efficient solution for everyday task management.



### 3. RELATED WORK

Various task management applications such as Google Tasks, Microsoft To Do, and Todoist are widely used for organizing daily activities. These applications provide features like reminders, task categorization, and synchronization across devices. However, many existing applications depend heavily on internet connectivity and sometimes contain complex interfaces that may not be suitable for all users.

The Smart Task Manager application is designed as a lightweight and offline-first solution that focuses on simplicity, usability, and performance. Unlike many existing systems, this application stores all task-related information locally using Room Database, ensuring faster access and reliable offline functionality. The project mainly focuses on providing a clean user interface and smooth task management experience for everyday users.

#### **4. METHODOLOGY**

The Smart Task Manager application follows the MVVM (Model-View-ViewModel) architectural pattern to maintain proper separation between the user interface and business logic. This architecture improves code organization, maintainability, and scalability.

The system consists of multiple layers including the UI layer developed using Jetpack Compose, ViewModel for managing UI-related data, Repository layer for handling data operations, and Room Database for local data storage. The application workflow allows users to create, update, delete, search, and manage tasks efficiently.

The use of modern Android development practices ensures better performance, smoother user experience, and easier future enhancements of the application.

#### **5. TECHNOLOGY STACK**

The application is developed using modern Android technologies. Kotlin is used as the programming language, while Jetpack Compose is used to design the user interface. The application follows the MVVM architecture, which helps in maintaining a clean and structured codebase. Room Database is used for storing task data locally, allowing the application to work without internet connectivity. Android Studio is used as the primary development tool. These technologies together help in building a modern, efficient, and user-friendly mobile application.

#### **6. IMPLEMENTATION**

The application is implemented using Android Studio, with Jetpack Compose used for designing the user interface. It provides all the essential functionalities required for effective task management, including adding new tasks, editing existing tasks, deleting tasks, setting priorities, assigning due dates, organizing tasks into different categories, searching tasks, and viewing task-related statistics. The application uses Room Database for local data storage, which ensures that all task information is securely stored and accessible even without an internet connection.

## **7. APP SCREENS DESCRIPTION**

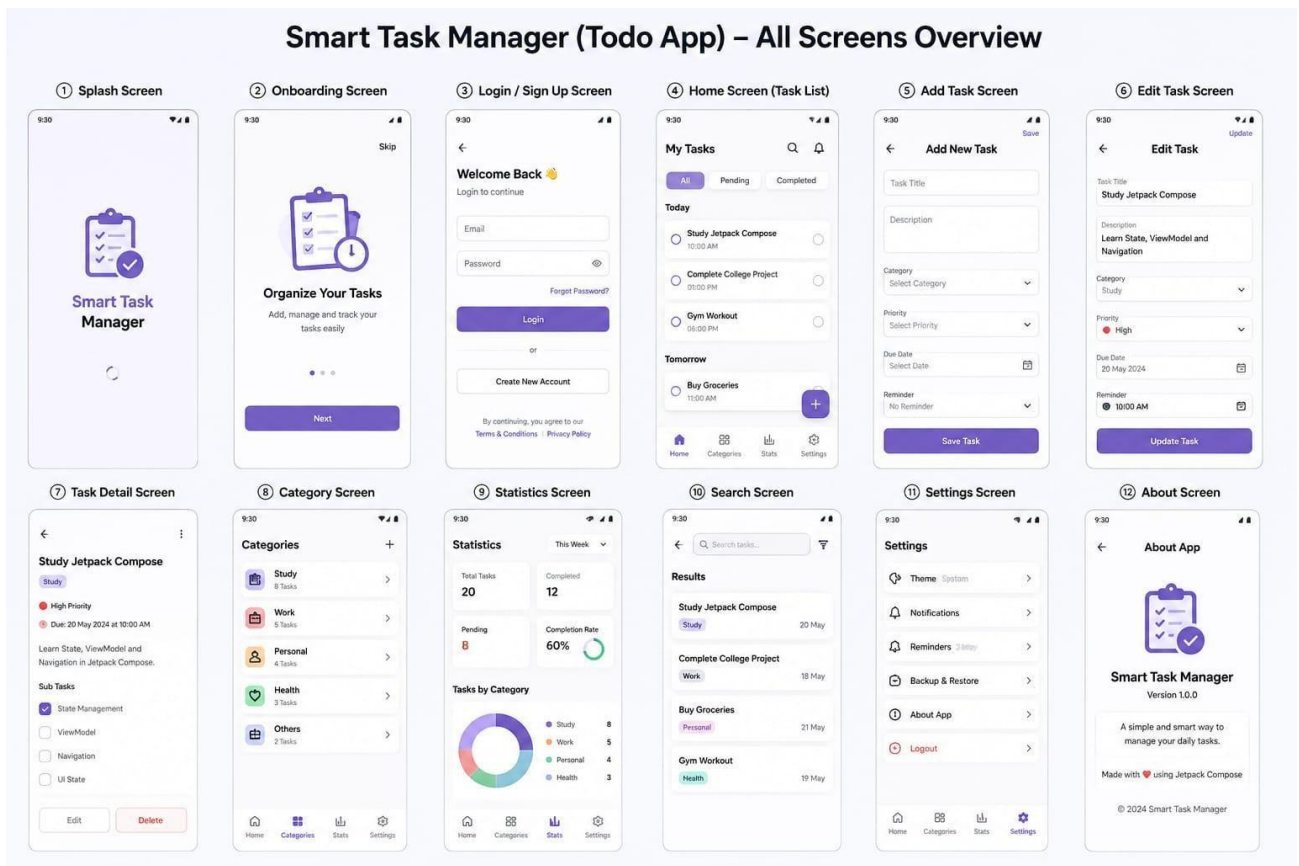
The application consists of multiple screens designed to provide a smooth and organized user experience. It includes a Splash Screen that displays the app loading interface, a Home Screen that shows the list of tasks, and an Add Task Screen for creating new tasks. Users can modify tasks through the Edit Task Screen and view complete task details in the Task Detail Screen. The application also provides a Category Screen for managing task categories and a Statistics Screen to display task-related data and performance insights. Additionally, a Search Screen is included to help users quickly find tasks, along with a Settings Screen for application preferences and an About Screen that provides information about the application. All screens are designed using Jetpack Compose to ensure a modern and user-friendly interface.

## **8. RESULTS AND EVALUTION**

The Smart Task Manager application performs efficiently and provides a smooth and responsive user experience. All major functionalities such as task creation, task updating, deletion, categorization, searching, and statistics monitoring work successfully without any major issues.

The integration of Room Database allows the application to function properly even without internet connectivity, ensuring reliable offline task management. The use of Jetpack Compose improves UI responsiveness and enhances the overall user experience.

Testing results show that the application successfully fulfills its primary objective of helping users organize and manage daily tasks effectively through a modern and user-friendly Android application.



## 9. CONCLUSION

The Smart Task Manager application provides an effective solution for organizing daily tasks in a simple and efficient manner. By using modern Android technologies such as Jetpack Compose for UI design, MVVM architecture for structured development, and Room Database for local data storage, the application ensures better performance, maintainability, and usability. This project demonstrates how these technologies can be combined to build a reliable and user-friendly task management system.

## 10. REFERENCES

- [1] Android Developers Documentation and Modern Android Application Development Concepts.
- [2] Kotlin Programming Language Official Documentation and Android Development Guide.
- [3] Jetpack Compose UI Toolkit and Declarative User Interface Documentation.
- [4] Room Database Persistence Library and Offline Storage Management Concepts.
- [5] MVVM Architecture Pattern and Android Application Structure Documentation.
- [6] Android Studio Development Environment and Mobile Application Development Tools.
- [7] Task Management System Design and Productivity Application Concepts.
- [8] Local Database Management and Offline-First Mobile Application Techniques.
- [9] User Interface Design Principles and Mobile User Experience Practices.
- [10] Modern Android Application Development Techniques using Jetpack Compose.
- [11] Search and Categorization Mechanisms in Mobile Task Management Applications.
- [12] Statistics Visualization and Productivity Monitoring Features in Android Applications.