

Todo List App Documentation

Overview

The Todo List App is a productivity application designed to help users efficiently manage their tasks. Built with Android using the Jetpack Compose framework, it leverages modern development practices like MVVM Clean Architecture and Room Database for offline task storage. This app is intuitive, visually appealing, and ensures a seamless user experience.

Features

Core Features:

1. Task Management

- Add, edit, and delete tasks.
- Mark tasks as complete or incomplete.
- Categorize tasks for better organization.

2. Offline Capability

- Tasks are stored locally using Room Database, ensuring availability even without internet connectivity.

3. User-Friendly Interface

- Built with Jetpack Compose, offering a dynamic and visually consistent UI.

Technical Stack

Frameworks and Libraries:

- Jetpack Compose: For building declarative and responsive UI components.
- Room Database: For storing and managing offline tasks.
- MVVM Clean Architecture: To maintain a scalable and testable codebase.
- Kotlin Coroutines: For handling asynchronous operations seamlessly.
- Voyager: For navigation.

Architecture

The app follows the MVVM (Model-View-ViewModel) Clean Architecture pattern:

1. Presentation Layer

- Composed of Jetpack Compose UI components.
- State is managed using ViewModel.

2. Data Layer

- Repository pattern is used to abstract data operations.
- Room Database serves as the local data source.

Key Components

1. ViewModel

- Handles the app's state and communicates with the domain layer.

2. Room Database

- Entity classes define the schema for storing tasks.
- DAO interfaces manage data operations (e.g., insert, update, delete).

3. Jetpack Compose UI

- Modern UI toolkit for creating reactive and declarative user interfaces.

How to Use

1. Adding a Task

- Tap the "Add" button, enter the task, and it will be saved automatically in the app.

2. Deleting a Task

- Long press on a task to delete it.

Conclusion

The Todo List App is a simple yet powerful tool for task management. By combining modern Android development practices with a clean architecture, it offers a robust foundation for future enhancements while ensuring a smooth user experience.