

# Notes & Todo App

The **Samreen Notes & Todo App** is an Android application developed to manage personal notes and tasks efficiently. It provides users with a simple, intuitive interface to create, edit, delete, search, and organize notes, as well as manage to-do lists. The project leverages modern Android development practices including **Jetpack Compose** for UI, **Room Database** for persistent storage, and **MVVM** architecture for clean separation of concerns.

## 1. Objective

The main objective of the project is to build an all-in-one productivity application where users can:

- Create and manage **personal notes**.
- Perform CRUD (Create, Read, Update, Delete) operations on notes.
- Search notes in real-time using a **search bar**.
- Sort notes based on **last updated time**.
- Maintain **To-Do tasks**, mark them complete/incomplete, and delete tasks.
- Navigate between notes and tasks using a **bottom navigation bar**.

## 2. Features and Functionalities

### 2.1 Notes Module

- **Add Note:** Users can create a new note by tapping the "+" button, which navigates to the note editor.
- **Edit Note:** Existing notes can be edited; both the title and content are editable.
- **Delete Note:** Users can remove unwanted notes via the delete icon on each note.
- **Search Notes:** A search bar at the top allows filtering notes based on the query.
- **Sort Notes:** Notes can be sorted by **latest update** in ascending or descending order.
- **Last Edited Timestamp:** Each note shows the last edited timestamp for tracking changes.
- **Navigation:** Clicking a note opens it in the editor for viewing or modification.

### 2.2 To-Do Module

- **Add Task:** Users can add new tasks to the list with a text field.
- **Mark as Done:** Tasks can be toggled between done and pending states.

- **Delete Task:** Tasks can be removed individually.
- **Persistent Storage:** Tasks are saved using **Room Database**, ensuring persistence across app restarts.
- **Simple Interface:** Clean layout with checkboxes and delete buttons for quick task management.

## 2.3 Bottom Navigation

- The app implements a **Bottom Navigation Bar** for switching between **Notes** and **Todo List** modules.
- Provides seamless navigation and maintains state for each section.

## 2.4 Architecture

- **MVVM Pattern:** Ensures separation between UI, data, and business logic.
- **ViewModel:** Handles UI state, LiveData/Flow collections, and exposes data to Composables.
- **Repository Pattern:** Interacts with Room database to perform CRUD operations.

## 3. Database Design

The app uses **Room Database** for storing notes and to-do tasks:

### Note Table:

- `id`: Primary key
- `title`: Note title
- `content`: Note content
- `createdAt`: Timestamp when note was created
- `updatedAt`: Timestamp when note was last edited

### Todo Table:

- `id`: Primary key
- `text`: Task description
- `isDone`: Boolean to indicate completion
- `createdAt`: Task creation timestamp
- `updatedAt`: Task last updated timestamp

## 4. User Interface

- **Jetpack Compose UI:** Modern declarative UI framework for Android.
- **Scaffold Layouts:** Used to organize top app bar, floating action button, content, and bottom navigation.
- **LazyColumn:** Displays lists of notes and tasks efficiently with scrollable UI.
- **Cards and Buttons:** Each note/task is displayed in a card with clickable actions.
- **OutlinedTextField:** Used for searching notes and adding new tasks.

## 5. Functional Workflow

**Launch App:** The user sees a bottom navigation bar with two tabs: Notes and Todos.

### Manage Notes:

- Tap "+" to create a new note.
- Edit existing notes by clicking on them.
- Search notes via the search bar.
- Sort notes using the sort icon.
- Delete notes using the delete button.

### Manage Todos:

- Add new tasks via the input field.
- Toggle task completion by clicking the checkbox.
- Delete tasks using the delete button.

**Persistence:** All notes and tasks are saved in Room DB, so data remains available even after closing the app.

## 6. Advantages

- Simple, clean, and intuitive interface.
- Combines both notes and task management in one app.
- Uses modern Android architecture and best practices.
- Supports real-time search and sorting for notes.
- Persistent data ensures no loss of information.

## 7. Conclusion

The **Samreen Notes & Todo App** provides a lightweight yet powerful solution for personal productivity. Its modular design, clean architecture, and intuitive UI make it a practical tool for managing both notes and tasks. The app demonstrates the effective use of **Jetpack Compose**, **Room Database**, and **MVVM architecture** to build scalable and maintainable Android applications.

## 8. Screenshort

