Flutter File Manager App - Project Document

Project Overview

The Flutter File Manager app is a modern, fully-featured file explorer for Android devices. It offers an intuitive user interface, robust file operations, and privacy-focused design. This app aims to provide users with a customizable and ad-free experience.

Target Audience

- Android users who need an ad-free, fast, and secure file explorer.

- Power users who want file encryption, backup, and cloud integration.

Core Features

- Browse files (internal & external storage)
- Copy, Move, Delete, Rename, Share
- Create new folders
- Show file details (size, date, type)
- Toggle hidden files

Advanced Features

- Zip/Unzip files
- Secure Vault with PIN/biometric lock
- Large & duplicate file finder
- File categorization (Images, Videos, Docs)
- Real-time file search
- Dark Mode with AMOLED Black
- File tagging and color labeling

Smart Features

- Recent files section
- Auto backup to Google Drive
- Storage usage visualized in chart
- AI-based file suggestions

UI/UX Design

- Material 3 + Cupertino mix design
- Floating bottom navigation bar
- Hero animations for file transitions
- FAB for quick actions
- Light, Dark & AMOLED themes
- Grid/List toggle view

Technical Stack

- Flutter (Dart)
- Provider / Riverpod for state management
- file_picker, path_provider, permission_handler plugins
- Android Scoped Storage
- Firebase for backup (optional)
- SQLite for tagging system

Folder Structure

lib/
■■■ main.dart
■■■ screens/
■ ■■■ home_screen.dart
■ ■■■ vault_screen.dart
■ ■■■ settings_screen.dart
■■■ widgets/
■ ■■■ file_tile.dart
■ ■■■ floating_navbar.dart
■■■ services/
■ ■■■ file_service.dart
■ ■■■ vault_service.dart
■■■ models/
■ ■■■ file_model.dart
■■■ utils/

Permissions & Security

- Scoped Storage access
- MANAGE_EXTERNAL_STORAGE (Android 11+ fallback)
- File encryption (AES)
- PIN/Biometric for vault

Future Enhancements

- Windows/Linux port (Flutter Desktop)
- WebDAV/FTP file server
- Plugin system for extensions
- Built-in media player
- Web share over HTTP

Conclusion

This app combines power, speed, and elegant UI to deliver a next-gen file manager. With the open-source potential and modular architecture, it can evolve into a fully-fledged system utility.