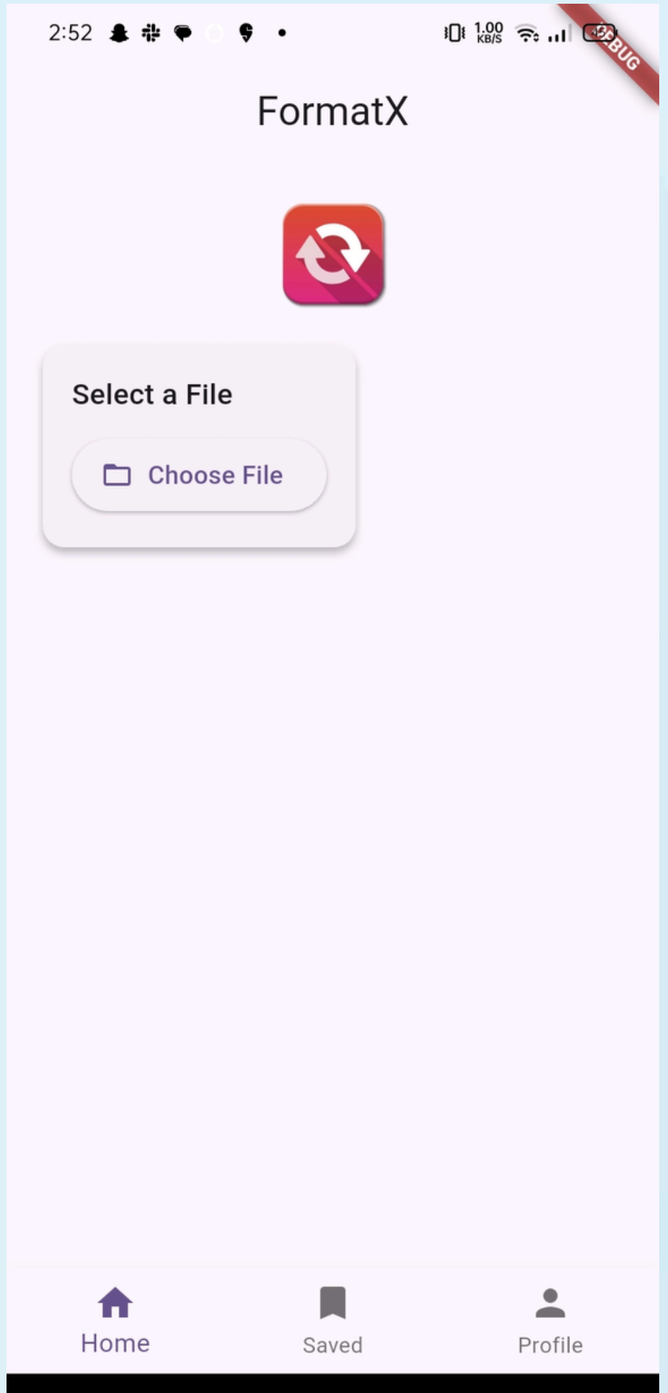
FormatX

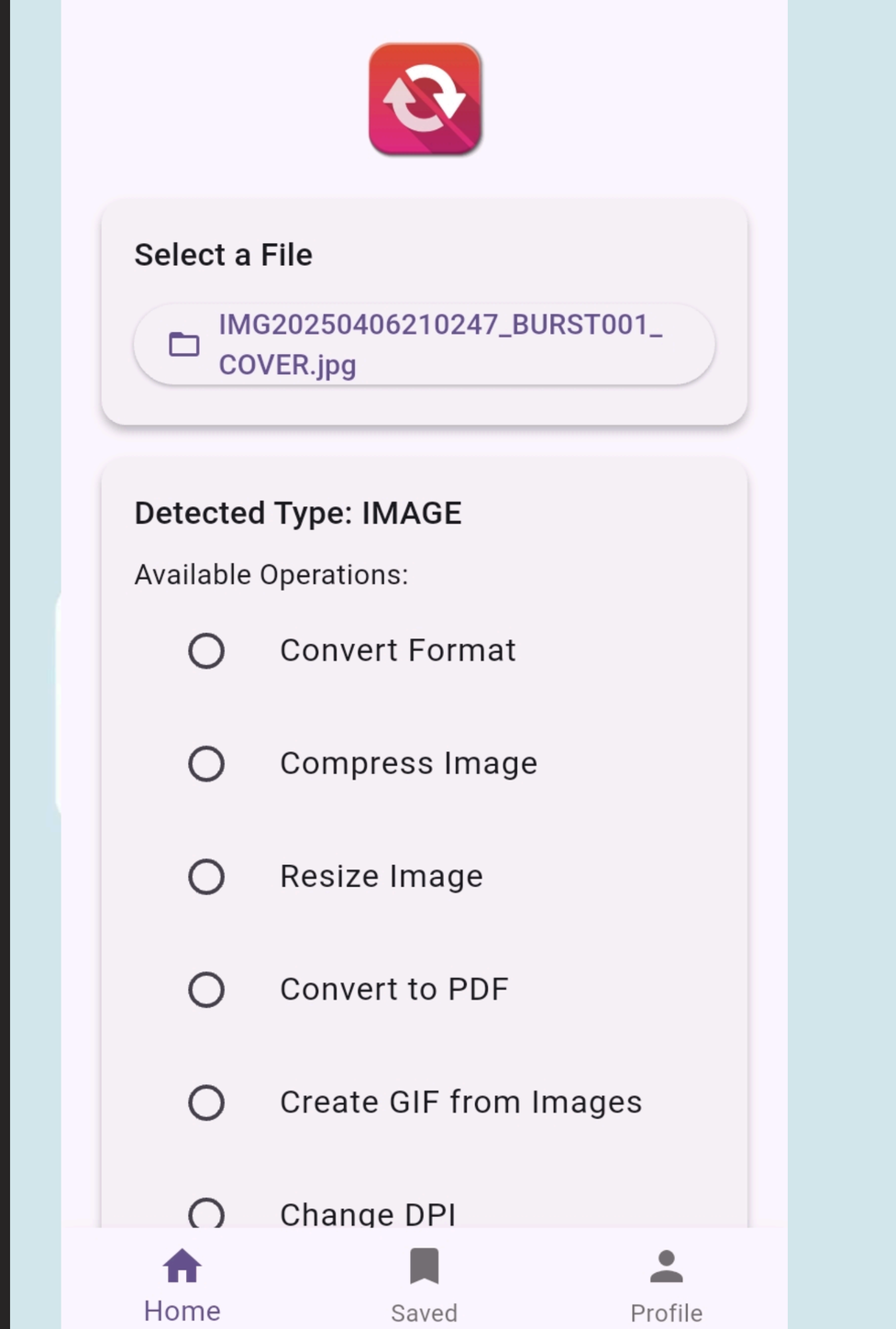
Media Conversion & Compression App

By Abhishek Chaurasiya



Overview

- FormatX is a Flutter-based mobile app for converting and compressing media files using FFmpeg. It supports audio, video, and image formats and includes Firebase authentication.



Key Features

File type detection

Automatic detection of audio, video, and image file types.

Format conversion

Convert between formats (e.g., MP4 to MP3, AAC).

Media compression

Reduce the size of video, audio, and image files.

PDF conversion

Convert images to PDF documents.

Firebase Authentication

User authentication and profile management using Firebase.

Scalable operation mapper

Organized by operation mapper for scalability.

App Architecture

- **Flutter Frontend:** Utilizes multiple screens for a user-friendly interface.
- **Firebase Integration:** Employs Firebase for authentication and cloud storage solutions.
- **FFmpeg Execution:** Executes FFmpeg commands through the `flutter_ffmpeg_utils` package.
- **Modular Operation Mapping:** Implements organized operation mapping via `operation_mapper.dart` for enhanced scalability and maintainability.

Screen Flow

- 1. HomeScreen: File selection & operation picking
- 2. ConversionScreen: Format-based conversion UI
- 3. CompressionScreen: Compression level setting
- 4. SavedScreen: Placeholder for saved file access
- 5. ProfileScreen: User profile & photo update

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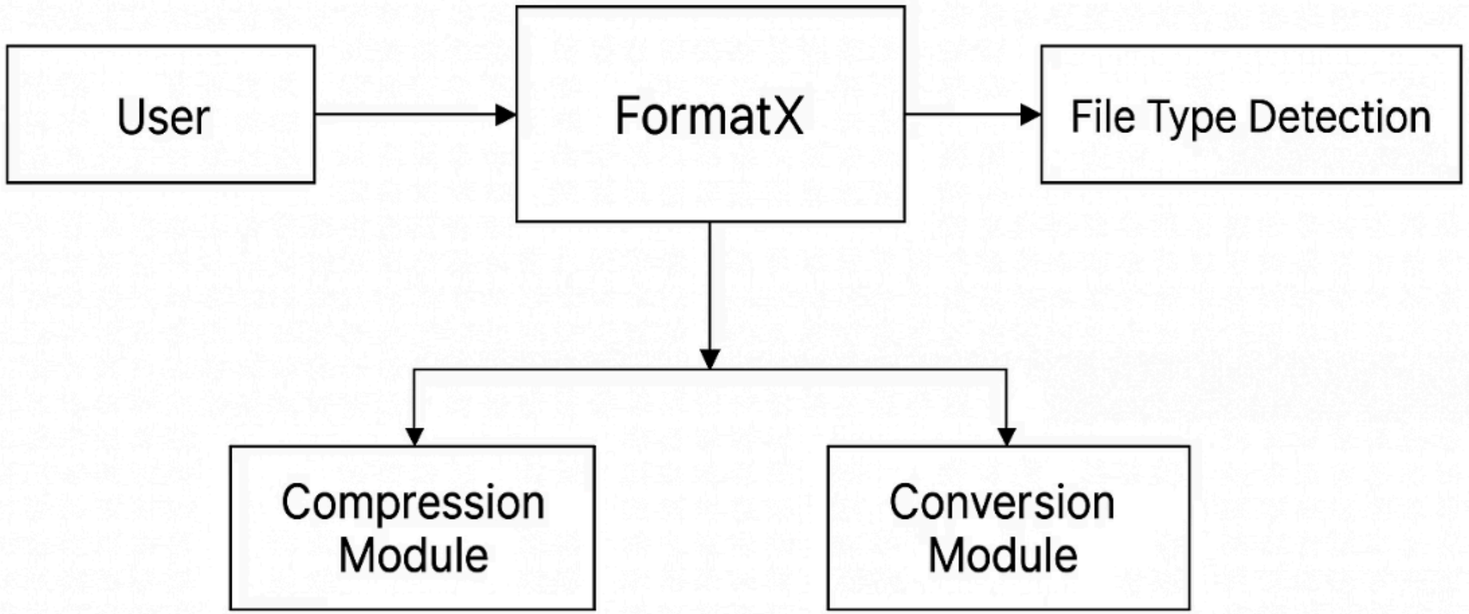
Technologies Used

- - Flutter
- - Dart
- - Firebase Auth, Firestore, Storage
- - FFmpeg (via flutter_ffmpeg_utils)
- - Path & File Picker libraries
- - Permission handling

SYSTEM ARCHITECTURE



Firebase Integration

- - FirebaseAuth: Email & Google login
- - Firebase Storage: Profile photo upload
- - FirebaseUI: Auth screens and widgets

Future

- - Add batch processing for files
- - Include more FFmpeg features (e.g., trim, gif creation)
- - Save & view file history
- - UI/UX improvements & animations
- - Web and desktop versions

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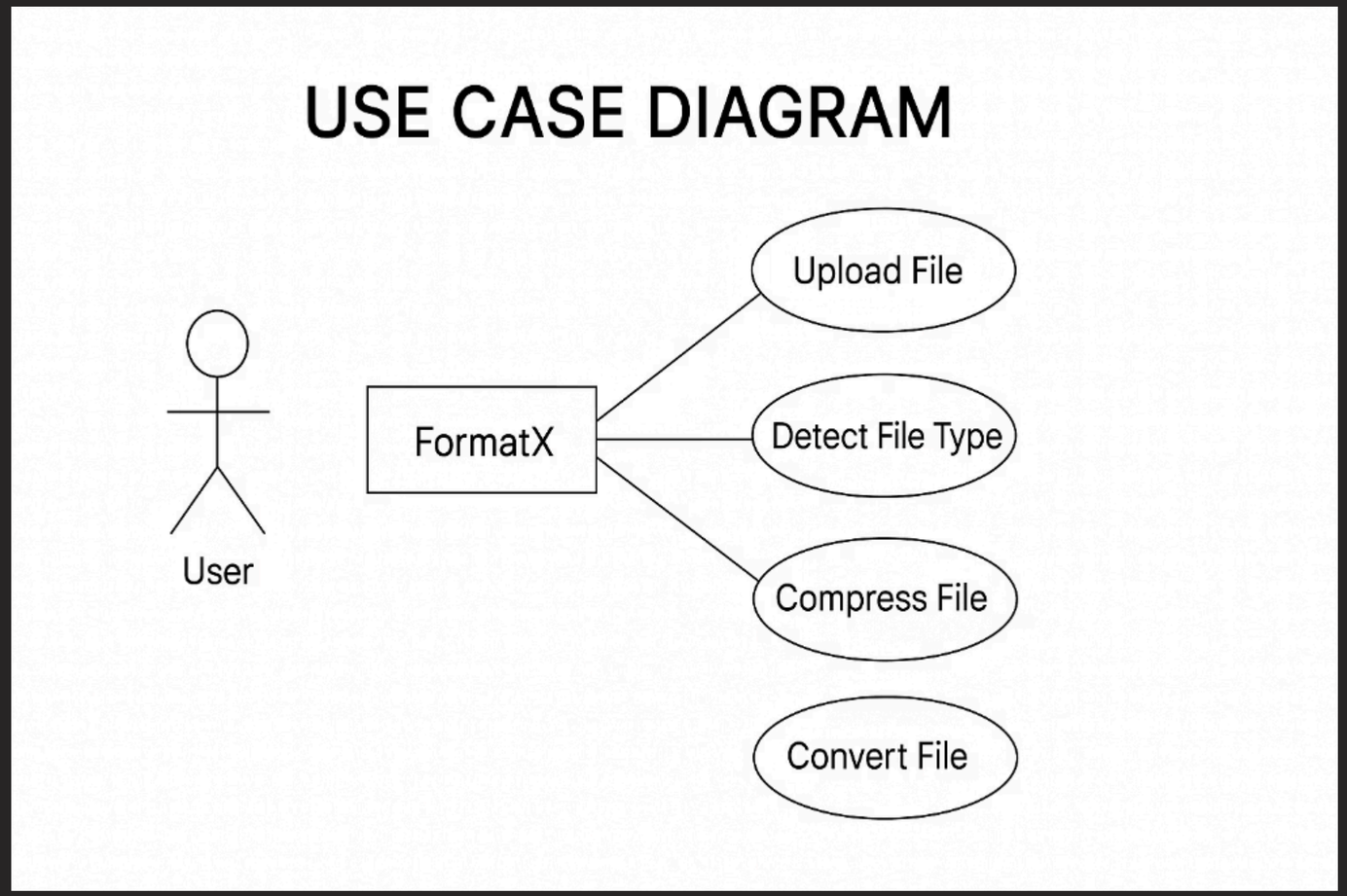
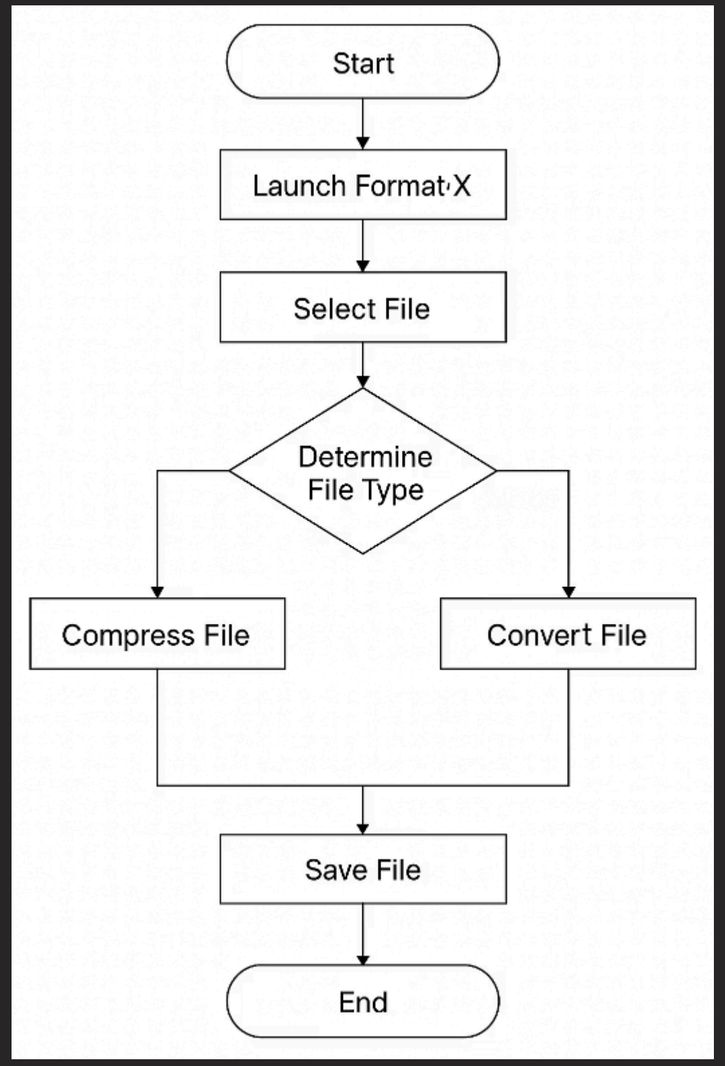
Use Case Diagram



Operational Flowchart



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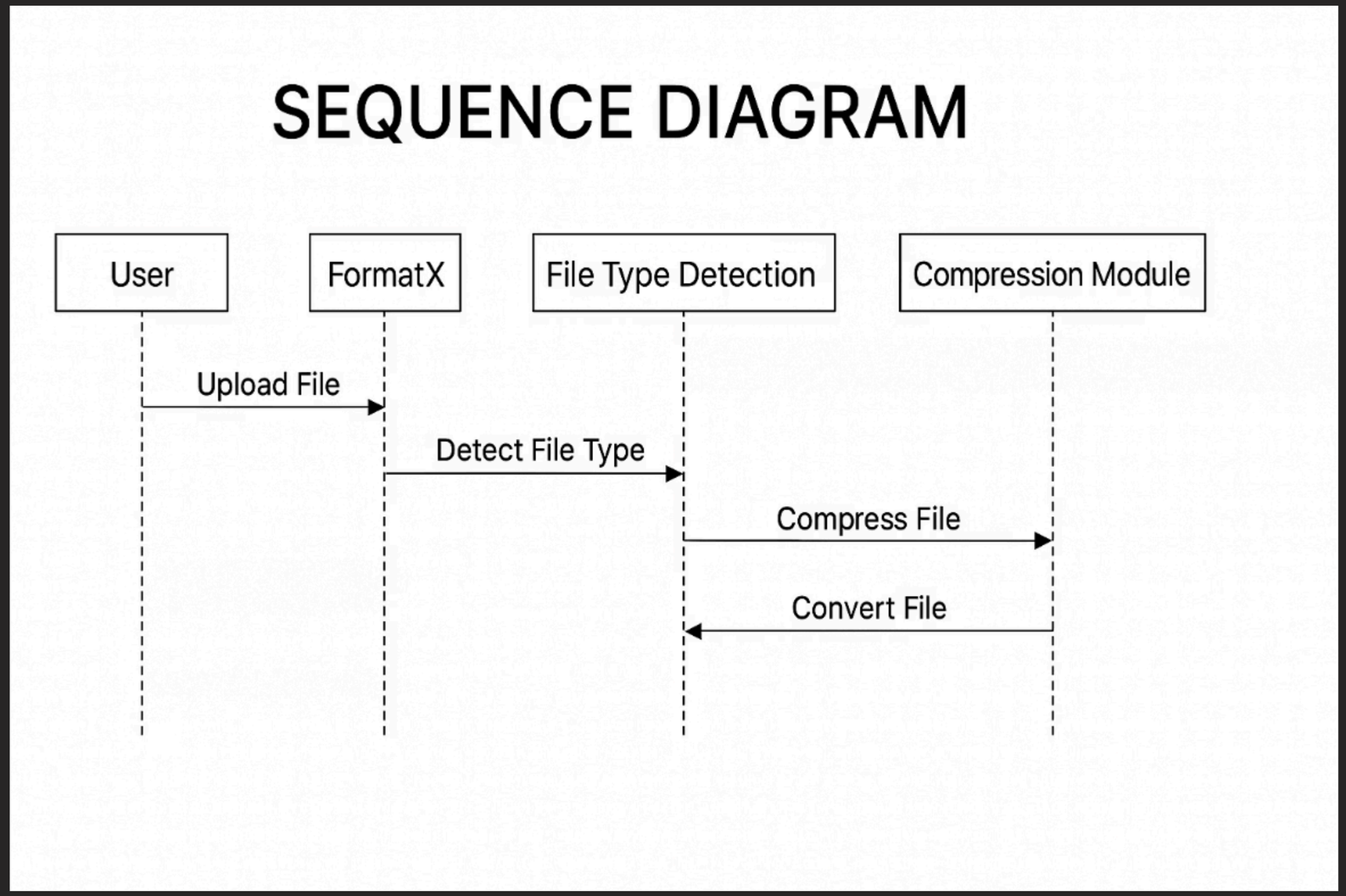
Sequence Diagram



Thank You!