

Safe Track - Women Safety App

APPLICATION DETAILS:

Safe Track is a Flutter-based mobile application designed to enhance the personal safety of women. The app provides emergency SOS alerts, real-time location sharing with emergency contacts.

It leverages Firebase for backend services like authentication and Fire store for storing user data (emergency contacts). It also integrates OpenStreetMap for lightweight and privacy-respecting map visualization.

CORE FEATURES:

1. User Authentication (Firebase Auth):

- Login and Register screens with Firebase Authentication.
- Secure user registration and sign-in functionality.

2. Emergency SOS Trigger:

- A dedicated SOS screen to instantly send emergency SMS with the user's live location to registered contacts.
- Sends alerts via SMS including Google Maps location links.

3. Location Sharing:

- Share your live location via SMS to emergency contacts manually.
- Automatically fetches real-time location using `geo_locator` and embeds Google Maps URL.

4. Map Integration:

- Uses Open Street Map via `flutter_map` package.
- Displays user's current location on the map with a custom marker.

5. Emergency Contacts Register:

- A form where users can save multiple emergency contact numbers to Fire store.
- Dynamically fetches and sends alerts to saved numbers.

6. Localization :

- Supports English and Tamil (can be extended).
- Allows users to switch languages within the app settings.
- Uses `flutter_localizations` and `.arb` files for text translations.

7. Settings Module:

- Allows user to navigate to profile, notifications, privacy settings, and help section.
- Also handles language switching.

CONCEPT AND TECHNOLOGIES USED:

Concept	Usage in App
Flutter Widgets	Scaffold, App Bar, List View, Elevated Button, Text, Form etc.
State Management	State full Widget for screens like Map Screen, Register Screen
Firebase Authentication	User login, registration, and logout
Firebase Fires tore	Save and retrieve emergency contact numbers dynamically
Geo location (<code>geolocator</code> package)	Get user's real-time latitude & longitude

SMS Integration (url_launcher)	Send emergency alerts via SMS with Google Maps location link
Flutter Map (Open Street Map)	Display real-time user location on an interactive map
Localization (i18n)	Multi-language support with .arb files and App Localizations
Material Design	Clean and responsive UI following Material Design principles
Routing / Navigation	Navigator.pushNamed() for screen transitions

APPLICATION WORKFLOW:

1. Login/Register Screen

➡ **Authenticates user using Firebase Auth.**

2. Home Screen

➡ **User sees basic options like "SOS Alert" & "Save Contact".**

3. SOS Screen

➡ **Tap SOS button to send live location to emergency contacts via SMS.**

4. Map Screen

➡ **Shows user's live location on Open Street Map + option to manually share location.**

5. Register Contact Screen

➡ **User can add multiple emergency contact numbers to Fire store.**

6. Settings Screen

➡ **Options to manage profile, privacy, notifications, help, and switch language (localization).**

EXTRA TOUCHES:

- Toasts and Snack bars to confirm actions (e.g., "Location shared successfully").
- Rounded buttons and color them with `Colors . deep purple`.
- Smooth navigation with `Navigator . push Named()`.
- Responsive layout with padding & spacing.