Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Project Kit

Title of the Project

SOSTIFY (Women Traveller Security and Safety App)

Abstract of the project

SOSTIFY is a women-centric safety and security mobile application designed to provide rapid assistance in emergencies. The app allows users to register trusted contacts, and with just three power button taps, it sends an emergency SMS with the user's live location and places an automatic call to the primary contact. If further danger is sensed, an additional three taps trigger a loud siren alarm, which can be deactivated by tapping three more times. The app also includes a hidden camera detector using the magnetometer sensor and offers safety tips, sharing features, and an intuitive user interface for a seamless experience.

Keywords

Generic Keywords

Android, Sensors, Mobile App

Specific Technology Keywords

Java, XML, FusedLocationProviderClient API, Broadcast Receiver, Magnetometer Sensor, Shared Preferences

Project Type keywords

Analysis, Design, Implementation, Testing, User Interface, Emergency Response System

Functional components of the project

Following is a list of functionality of the system. More functionality that you find appropriate can be added to this list. And, in places where the description of functionality is not adequate, you can make appropriate assumptions and proceed.

Users of the system: Women Users (General) and Admin (Developer/Support)

Functionality:

When the user opens the app for the first time, permission requests are prompted. The homepage includes several modules such as:

Menu should contain following page :

- Emergency SOS Activation via 3x Power Button Press
- Siren Alarm Activation/Deactivation via Power Button Sequences
- Hidden Camera Detection using Magnetometer
- Manual Spy Cam Detection Tips
- Contact and Share Features
- About Us, App Tour
- Feedback and Help Desk

Menu pages:

1. Emergency SOS Page: Saves contact numbers and initiates call and SMS with location using background service and power button detection.
2. Hidden Camera Detector Page: Uses magnetic field sensor to detect electromagnetic radiations, warns user with beeps.
3. Siren Alarm Page: Triggers siren using Media Player API.
4. About Us / Contact Us: Users can contact via email and read about the development team.
5. App Tour: Brief walkthrough of the app.
6. Share Feature: Users can share the app link with others to raise awareness.

Steps to start-off the project:

The app is developed using Android Studio with Java and XML. Location APIs, Broadcast Receivers, and background services are essential. Testing and user-centric UI design are key.

The following steps will be helpful to start off the project :- 1.

1. Learn Android SDK, Java Basics
2. Study background services, sensor APIs, and SMS Manager
3. Plan and create UI screens and logic flow
4. Integrate Fused Location Provider and Broadcast Receiver for emergency triggers
5. Implement and test SOS and siren features
6. Fine-tune camera detection using sensor values.

Requirements :-

Hardware requirements -

Number	Description	Alternatives (If available)
1	Android Phone with Sensor Support and 4GB+ RAM	NA

Software requirements -

Number	Description	Alternatives (If available)
1	Android Studio	None
2	Java SDK	Kotlin
3	Gradle	Maven
`	Windows	Linux

Manpower requirements

2 students can complete this in 4 – 6 months if they work parttime on it.

Milestones and Timelines

Number	Milestone Name	Milestone Description	Timeline (Weeks)	Remarks
1	Requirements Specification	Define and document SOS flow, detection methods, siren features	2–3	Include safety tips and offline mode options
2	Technology Familiarization	Understand APIs, Android components, permissions	4–5	Learn service and sensor integration practically
3	Database/Local Storage Setup	Implement Shared Preferences for contact storage	5–7	No backend needed for MVP

4	Front-End Implementation	Design UI for 7 modules using Material Design	10–12	Include splash screen with Lottie
5	Backend & Sensor Logic	Integrate sensors, services, and emergency functions	12–13	Ensure accuracy and background trigger
6	Integration Testing	Test power button functionality, GPS, messaging	14–15	Cover locked phone scenarios
7	Final Review	Fix issues and finalize APK for demo	16–18	Prepare user manual and video demo

Guidelines and References:

- https://developer.android.com
- https://developer.android.com/training/location
- https://developer.android.com/reference/android/hardware/SensorManager
- https://material.io/components