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# Safe Zone Survival App

Smart, Swift & Secure  
Stay Calm, stay prepared, Stay Safe

## SOFTWARE ENGINEERING

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## PROBLEM STATEMENT

In moments of crisis—whether medical, environmental, or situational—immediate access to trusted information, emergency contacts, and reliable communication can mean the difference between chaos and control.

Unfortunately, many individuals face critical delays in receiving help due to fragmented systems, limited preparedness, and the absence of a centralized survival toolkit.

**Owl Vox** aims to bridge this gap by offering a user-friendly, all-in-one emergency survival platform that empowers individuals to navigate unexpected challenges with confidence. From real-time SOS alerts and location-based reporting to curated survival guidance, emergency contact integration, and alert systems tailored to specific crisis types (medical, fire, accidents, workplace, outdoor), **Owl Vox** is designed to be both proactive and reactive.

With an intuitive interface that includes personalized sign-up/log-in flows, location-based mapping, and a robust sidebar of essential features (profile management, reporting, emergency contacts, and safety tips), Owl Vox ensures that users—whether in urban settings or remote areas—have a reliable companion during times of uncertainty.

The problem we are addressing is not just about emergency response; it's about **readiness, rapid communication, and informed action** when it matters most.

## **FUNCTIONAL REQUIREMENTS:**

### **FR1 – User Login**

- FR1.1: The system shall allow users to log in using a valid email
- FR1.2: The system shall allow users to log in using a valid password.
- FR1.3: The system shall allow users to log in using Facebook.
- FR1.4: The system shall allow users to log in using Twitter.
- FR1.5: The system shall allow users to log in using LinkedIn.
- FR1.6: The system shall allow users to log in using Gmail.
- FR1.7: The system shall allow users to recover their password using a "Forgot Password" feature.
- FR1.8: The system shall send a 4-digit verification code to the user's phone for password recovery.
- FR1.9: The system shall allow users to input the verification code to reset their password.

### **FR2 – User Registration (Sign Up)**

- FR2.1: The system shall allow users to register by providing their Gmail.
- FR2.2: The system shall allow users to register by providing their password.
- FR2.3: The system shall allow users to register by providing their name.
- FR2.4: The system shall require users to agree to the terms and conditions during registration.
- FR2.5: The system shall allow users to register using Facebook.
- FR2.6: The system shall allow users to register using Twitter.
- FR2.7: The system shall allow users to register using LinkedIn.
- FR2.8: The system shall allow users to register using Gmail.
- FR2.9: The system shall allow users to enter their phone number during registration.
- FR2.10: The system shall allow users to enter their date of birth during registration.
- FR2.11: The system shall allow users to enter their gender during registration.
- FR2.12: The system shall send a 4-digit verification code to activate the account.
- FR2.13: The system shall activate the account once the user verifies the code.

### **FR3 – Password Recovery**

- FR3.1: The system shall allow users to recover their account using phone number verification.
- FR3.2: The system shall allow users to enter their phone number to request a verification code.
- FR3.3: The system shall send a 4-digit verification code to the user's phone.
- FR3.4: The system shall allow users to input the received code to reset their password.
- FR3.5: The system shall allow users to log in after resetting their password.

### **FR4 – Profile Management**

- FR4.1: The system shall allow users to update their address.
- FR4.2: The system shall allow users to update their blood group.
- FR4.3: The system shall allow users to update their emergency contact.
- FR4.4: The system shall allow users to change their password.
- FR4.5: The system shall allow users to view their profile from the sidebar.
- FR4.6: The system shall allow users to view notification settings from the sidebar.
- FR4.7: The system shall allow users to toggle privacy settings.
- FR4.8: The system shall allow users to manage account preferences from the settings tab.

### **FR5 – Report Creation**

- FR5.1: The system shall allow users to create a new survival report.
- FR5.2: The system shall allow users to save survival reports.
- FR5.3: The system shall allow users to add text to a survival report.
- FR5.4: The system shall allow users to attach images to a survival report.
- FR5.5: The system shall allow users to attach videos to a survival report.
- FR5.6: The system shall allow users to attach documents to a survival report.
- FR5.7: The system shall allow users to categorize survival reports.

### **FR6 – Map Interface and Incident Logging**

- FR6.1: The system shall allow users to view their current location on a map.
- FR6.2: The system shall request location access from the user.
- FR6.3: The system shall display a timestamp with the user's current location.
- FR6.4: The system shall allow users to enter a description of an incident.

- FR6.5: The system shall allow users to submit incident reports from the map interface.

## **FR7 – SOS Emergency Alert System**

- FR7.1: The system shall allow users to activate the SOS alert system.
- FR7.2: The system shall provide an SOS button on the main page.
- FR7.3: The system shall provide an SOS button on the map interface.
- FR7.4: The system shall request location permission before sending an SOS alert.
- FR7.5: The system shall send an emergency email with the user's data and location coordinates.

## **FR8 – Emergency Categories and Guidance**

- FR8.1: The system shall display emergency guidance categorized by alert type.
- FR8.2: The system shall provide a search bar for finding emergency guidance.
- FR8.3: The system shall provide medical alert guidance content.
- FR8.4: The system shall provide fire alert guidance content.
- FR8.5: The system shall provide road alert guidance content.
- FR8.6: The system shall provide workplace alert guidance content.
- FR8.7: The system shall provide outdoor alert guidance content.
- FR8.8: The system shall display helpline numbers with each emergency category.
- FR8.9: The system shall display precautionary steps for each emergency category.

## **FR9 – Survival Guidance Access**

- FR9.1: The system shall provide survival manuals accessible through the sidebar.
- FR9.2: The system shall provide survival manuals accessible through the bottom navigation bar.
- FR9.3: The system shall categorize survival tips.
- FR9.4: The system shall categorize survival precautions.
- FR9.5: The system shall allow users to read survival tips from within the app.

## **FR10 – Emergency Contacts**

- FR10.1: The system shall allow users to add personal emergency contacts.
- FR10.2: The system shall allow users to edit emergency contact details.
- FR10.3: The system shall provide default emergency contacts including police.
- FR10.4: The system shall provide default emergency contacts including ambulance.
- FR10.5: The system shall provide default emergency contacts including fire brigade.

## **FR11 – Offline Emergency Mode**

- FR11.1: The system shall allow users to press the SOS button while offline.
- FR11.2: The system shall store the SOS alert when the user is offline.
- FR11.3: The system shall send the stored SOS alert automatically once a connection is available.
- FR11.4: The system shall display a confirmation message that the SOS will be sent when online.

## **FR12 – Notifications and Reminders**

- FR12.1: The system shall send notifications for new survival tips.
- FR12.2: The system shall send notifications for survival alerts.
- FR12.3: The system shall notify users of profile updates.
- FR12.4: The system shall send reminders to update medical information.
- FR12.5: The system shall send reminders to update emergency contact details.

## **FR13 – Search Functionality**

- FR13.1: The system shall provide a global search bar.
- FR13.2: The system shall allow users to search for survival reports.
- FR13.3: The system shall allow users to search for emergency tips.
- FR13.4: The system shall allow users to search for emergency contact names.
- FR13.5: The system shall auto-suggest related topics based on entered keywords.

## **FR14 – View Report History**

- FR14.1: The system shall display a list of all submitted survival reports.
- FR14.2: The system shall show timestamps for each submitted report.

- FR14.3: The system shall allow users to edit previously submitted reports.
- FR14.4: The system shall allow users to delete previously submitted reports.

### **FR15 – Role-Based Access (Admin/User)**

- FR15.1: The system shall allow admins to view all submitted reports.
- FR15.2: The system shall allow admins to flag inappropriate content.
- FR15.3: The system shall allow admins to manage inappropriate content.
- FR15.4: The system shall restrict regular users to access only their own reports.
- FR15.5: The system shall allow all users to access public survival guidance content.

### **FR16 – Community Assistance**

- FR16.1: The system shall display nearby survival incidents on the map.
- FR16.2: The system shall allow users to view survival reports submitted by nearby users.
- FR6.3: The system shall allow users to request help from nearby users.
- FR16.4: The system shall allow users to send a status update (e.g., "I'm safe").



## **NON-FUNCTIONAL REQUIREMENTS:**

### **NFR1 – Security and Data Protection**

- NFR1.1: The system should encrypt all user data during storage.
- NFR1.2: The system should encrypt all user data during transmission.
- NFR1.3: The system should support two-factor authentication for user login.
- NFR1.4: The system should enforce password strength requirements during account creation.
- NFR1.5: The system should enforce password strength requirements during password updates.

### **NFR2 – Location Privacy and Permission**

- NFR2.1: The system should ask for user consent before accessing location data.
- NFR2.2: The system should allow users to manually enter their location.
- NFR2.3: The system should notify users when location tracking is active.

### **NFR3 – Response Time and Speed**

- NFR3.1: The system should send SOS alerts within 2 seconds of user action.
- NFR3.2: The system should load all critical pages within 3 seconds.
- NFR3.3: The system should limit map update delays to under 1 second.

### **NFR4 – Offline Capability**

- NFR4.1: The system should cache emergency alerts when offline.
- NFR4.2: The system should cache survival reports when offline.
- NFR4.3: The system should automatically sync cached data once an internet connection is restored.
- NFR4.4: The system should notify users when offline mode is active.

### **NFR5 – Mobile and Platform Compatibility**

- NFR5.1: The system should function on Android mobile devices.
- NFR5.2: The system should function on iOS mobile devices.
- NFR5.3: The system should adapt to various screen sizes including mobile.
- NFR5.4: The system should adapt to various screen sizes including tablet.
- NFR5.5: The system should adapt to various screen sizes including desktop.
- NFR5.6: The system should support touch gestures on mobile devices.
- NFR5.7: The system should implement mobile-specific UI features for better usability.

## **NFR6 – Scalability**

- NFR6.1: The system should support more than 1000 concurrent users.
- NFR6.2: The system should automatically scale based on user load.
- NFR6.3: The system should maintain consistent performance during high traffic periods.

## **NFR7 – Data Backup and Recovery**

- NFR7.1: The system should back up all data daily to a secure storage location.
- NFR7.2: The system should allow admins to manually restore data from backups.
- NFR7.3: The system should ensure all backups are encrypted and tested for integrity.

## **NFR8 – Usability and Accessibility**

- NFR8.1: The system should support screen reader accessibility.
- NFR8.2: The system should use fonts that are readable on all devices.
- NFR8.3: The system should use high-contrast color themes for visibility.
- NFR8.4: The system should allow users to perform critical actions in no more than 3 clicks.

## **NFR9 – Notifications**

- NFR9.1: The system should send push notifications for important updates.
- NFR9.2: The system should send email notifications for critical alerts.
- NFR9.3: The system should allow users to customize their notification preferences.
- NFR9.4: The system should limit non-critical alerts to a maximum of 3 per day.

## **NFR10 – System Availability**

- NFR10.1: The system should be available 99.9% of the time.
- NFR10.2: The system should display a user-friendly error page during downtime.
- NFR10.3: The system should notify users in advance of planned maintenance windows.

## **NFR11 – Maintainability**

- NFR11.1: The system should use modular code architecture to support easy updates.
- NFR11.2: The system should log errors and exceptions for backend debugging.
- NFR11.3: The system should support backend changes without affecting the frontend.

## **NFR12 – Audit and Logging**

- NFR12.1: The system should log all user login activities.
- NFR12.2: The system should log all SOS alert actions by users.
- NFR12.3: The system should log all survival report submissions.
- NFR12.4: The system should store logs securely for administrative access.
- NFR12.5: The system should support log filtering by date.
- NFR12.5: The system should support log filtering by event type.

## **NFR13 – Testability**

- NFR13.1: The system should include unit tests for all major modules.
- NFR13.2: The system should allow testing of SOS alerts without sending real messages.
- NFR13.3: The system should support mock data generation for development and testing.

## **NFR14 – Session Management**

- NFR14.1: The system should automatically log users out after 15 minutes of inactivity.
- NFR14.2: The system should alert users one minute before session timeout.
- NFR14.3: The system should allow users to extend their session without data loss.

## **NFR15 – Search Optimization**

- NFR15.1: The system should return search results within 2 seconds.
- NFR15.2: The system should support keyword-based filtering in search.
- NFR15.3: The system should highlight matched keywords in the search results.

## **NFR16 – Analytics and Monitoring**

- NFR16.1: The system should track and report SOS usage trends to admins.
- NFR16.2: The system should monitor user engagement with guidance content.
- NFR16.3: The system should display analytics data on an admin dashboard.