NariSurakshit : A Smart Companion App for Women's Safety

Abstract

Women's safety remains a critical issue in modern society, especially in urban and semi-urban areas where rising crime rates pose constant threats. While several mobile safety applications exist, many lack intelligent, proactive alert systems and personalized emergency response mechanisms. This paper introduces NariSurakshit, a React Native-based mobile application designed to offer core safety features such as emergency alerts, smart timer-based check-ins, and secure emergency contact management. Built using Expo CLI and Firebase backend, the app is privacy-conscious, beginner-friendly, and easily scalable for future AI-powered upgrades.

Keywords

Women's safety, React Native, Firebase, Smart Timer, SOS, Emergency Contacts, Location Alerts, Expo CLI, Mobile App.

1. Introduction

The increasing incidents of crimes against women have made personal safety a top priority. Traditional safety apps provide basic SOS buttons or location tracking but fail to adapt to real-time scenarios or work reliably in low-connectivity areas. This research proposes a lightweight, smart companion app that combines Firebase authentication, emergency contact integration, and a smart timer feature to proactively manage safety, especially in situations where direct SOS activation may not be feasible.

2. Problem Statement

Most existing safety applications either lack adaptability, depend heavily on internet availability, or do not incorporate smart alert systems that function based on user inactivity or missed check-ins. There is a need for a safety app that is simple to use, supports offline features, and intelligently triggers alerts even when the user cannot interact with the device.

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3. Objectives

- To build a beginner-friendly Android app for women's safety using React Native (Expo CLI).
- To implement Firebase for secure login and contact management.
- To design a Smart Timer Alert System that can send alerts automatically if not manually cancelled.
- To ensure easy future upgrades with AI, location analytics, and voice-triggered safety mechanisms.

4. Existing Systems and Their Limitations

Apps like bSafe, 112 India, Raksha, and My Safetipin offer safety features but lack proactive alert systems, offline reliability, and AI-enhanced intelligence. Most depend on continuous internet access or provide limited emergency contact handling.

5. Proposed System

NariSurakshit offers:

- Firebase Authentication for secure login/signup.
- Contact management using Firebase Firestore.
- Smart Timer which triggers alerts if not cancelled.
- Optional geolocation access.
- Android-first responsive design.
- Ready-to-upgrade structure for future AI-based features.

- **Uniqueness of the NariSurakshit App**
- **1. Smart Timer-Based Safety Alert System**
- **2. AI-Ready, Modular Design (Future-Proof)**
- **3. Offline-Sensitive Design**
- **4. Personalized Emergency Contact System**
- **5. Beginner-Friendly & Open for Customization**
- **6. Built with Rural Accessibility in Mind**
- **7. Focus on Prevention, Not Just Reaction**

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Comparison with Existing Apps

Feature	NariSurakshit	bSafe	112 India	Raksha	My Safetipin
Smart Timer Alerts	☑ Yes	✗ No	✗ No	✗ No	✗ No
Emergency Contacts	☑ Firebase	☑	✗	☑	✗
Offline Support (Timer-based)	☑ Partial	✗	✗	✗	✗
Future AI Integration	☑ Planned	✗	✗	✗	✗
Open Source / Student Customizable	☑ Yes	✗	✗	✗	✗

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6. Technologies Used

React Native (Expo): Frontend mobile app

Firebase: Authentication, Firestore database

JavaScript: Logic and timer

Expo Location API: Optional location access

7. Results and Outcomes

The app was successfully tested on Android. Key results include reliable smart timer alerts, smooth user onboarding, and contact data stored securely with Firebase. Optional location access was user-controlled and worked well.

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8. Future Scope

The app can be enhanced with:

- AI-based Risk Analyzer
- Safe Route Suggestion using heatmaps
- Voice-triggered SOS alerts
- RakshaScore for safety indexing
- Multilingual support with Bhashini

9. Conclusion

NariSurakshit proves that a lightweight mobile app can significantly enhance personal safety. It balances simplicity with smart features and provides a strong foundation for building an AI-powered safety solution.

"**NariSurakshit** stands out as a **preventive**, **intelligent**, and **AI-ready** personal safety app that combines smart alerting with offline reliability and user personalization—making it more accessible, future-focused, and context-aware than existing alternatives."

10. References

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