Final Project Report
for
Women Safety App-EchoSafe

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Contents

Chapter 1

Introduction

1.1 Purpose

The purpose of *EchoSafe* is to provide a complete safety solution for women who may find themselves in risky situations while outside. This app is designed to offer features that enable users to quickly seek help, alert authorities or trusted contacts, and ensure their safety. By integrating multiple safety tools into one app, EchoSafe aims to become an essential companion for women seeking to enhance their personal security.

1.2 Intended Audience

The intended audience for *EchoSafe* includes:

- Women who require additional safety measures when they are outside or traveling alone.
- Families and friends of women who want to ensure that their loved ones are safe.
- Organizations or institutions that advocate for women's safety and empowerment.

This app is particularly suitable for women who prioritize personal security and wish to have access to a variety of safety features on a single platform.

1.3 Intended Use

The primary use of *EchoSafe* is to act as a safety tool during potentially dangerous situations. Users can:

- Activate the **SOS** feature to notify emergency contacts.
- Use the **Siren** feature to draw attention to their situation.
- **View and Add Contacts** to keep their trusted network accessible.
- Access **Self-Defense** tutorials for learning protective techniques.
- Quickly call relevant **Helplines** for assistance.

- **Record Audio** in situations that require evidence collection.
- Trigger a **Fake Call** to exit uncomfortable situations.
- Utilize the **Where Am I?** feature to identify and share their location.

1.4 Product Scope

EchoSafe is designed to provide a user-friendly interface with robust safety features for real-time assistance. The app includes:

- Intuitive navigation and layouts to ensure accessibility for all users.
- Features tailored to address various safety needs.
- Customizable options such as adding trusted contacts and saving recorded audio.
- Tools for both prevention and response during emergencies.
- Compatibility with Android devices, making it accessible to a wide audience.

1.5 Risk Definition

While *EchoSafe* aims to provide essential tools for safety, certain risks are associated with its use:

- Dependence on mobile networks and GPS availability for location-based features.
- Risk of misuse or false alarms that trigger unnecessary responses.
- Potential security risks if user data, such as contact information, is not adequately protected.

To mitigate these risks, the app includes safeguards like user consent for data sharing and fallback mechanisms for key features.

Chapter 2

Overall Description

2.1 User Classes and Characteristics

EchoSafe is designed to cater to a diverse range of users, primarily focusing on:

- **Women in Vulnerable Situations:** Women who travel alone or in unfamiliar areas, where quick access to safety features is crucial.
- **Trusted Contacts:** Friends, family members, or colleagues who are part of the user's emergency contact network.
- **Safety Advocates:** Organizations and individuals who promote personal safety and can benefit from recommending this app to their communities.

Each user class interacts with the app differently, with women being the primary users, while trusted contacts support them through the app's notification features.

2.2 User Needs

Users of *EchoSafe* have specific needs that the app aims to fulfill:

- **Quick Response:** Users need immediate access to emergency features like SOS and Siren.
- **Location Sharing:** Real-time sharing of their location with trusted contacts for quick assistance.
- **Evidence Collection:** Tools such as audio recording to collect evidence during incidents.
- **Personalization:** Options to add and manage trusted contacts and customize app settings.
- **Guidance:** Access to self-defense tips and helpline numbers for support during emergencies.

2.3 Operating Environment

EchoSafe operates in environments with the following characteristics:

- **Mobile Devices:** Designed for Android smartphones, leveraging GPS, network connectivity, and device sensors.
- **Internet Connectivity:** Some features, such as location sharing and SOS alerts, rely on stable internet access.
- **Offline Functionality:** Features like Siren and Fake Call work without internet connectivity to ensure usability in remote areas.

The app is optimized for use in urban, suburban, and rural environments, providing flexibility for different user scenarios.

2.4 Constraints

Development and usage of *EchoSafe* are subject to certain constraints:

- **Device Compatibility:** The app supports Android devices only, with a minimum API level requirement.
- **Battery Usage:** Continuous use of GPS and background processes can impact battery life.
- **Data Privacy:** Ensuring user data security and compliance with privacy regulations is critical.

2.5 Assumptions

The following assumptions are made for the design and operation of *EchoSafe*:

- Users will grant necessary permissions, such as access to location, microphone, and contacts.
- Internet connectivity will be available for most users when needed.
- Users will proactively manage and update their emergency contact list in the app.

Chapter 3

Main features and Interfaces

3.1 get started

The introductory splash screen welcoming users to EchoSafe.

Figure 3.1: Get Started

3.2 Registration

The registration page includes input fields for:

- **Name**
- **Address**
- **Occupation**
- **Phone Number**

A **Continue** button allows users to proceed. Below the form, a clickable text, *"Already have an account?"*, navigates users to the login interface.

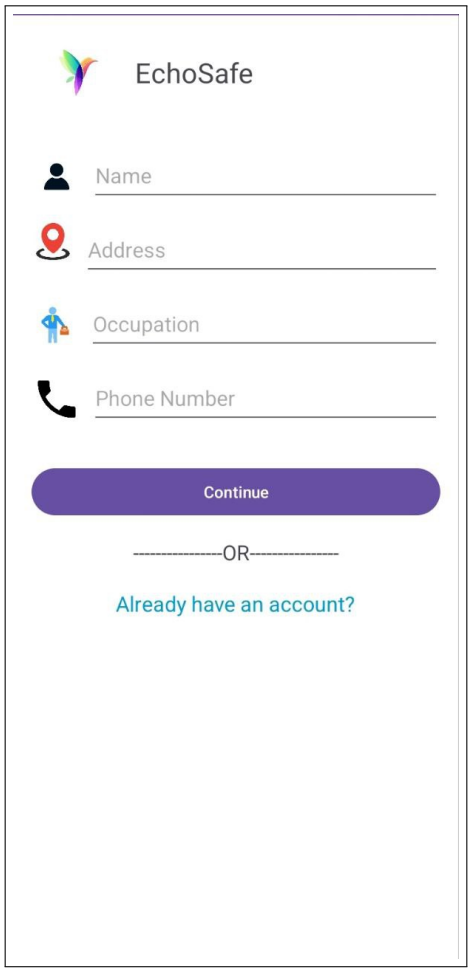

Figure 3.2: Registration

3.3 Login

The login page includes input fields for:

- **Phone Number**
- **Username**
- **PIN Code**

After logging in, users will be redirected to the home page for accessing the app's features.

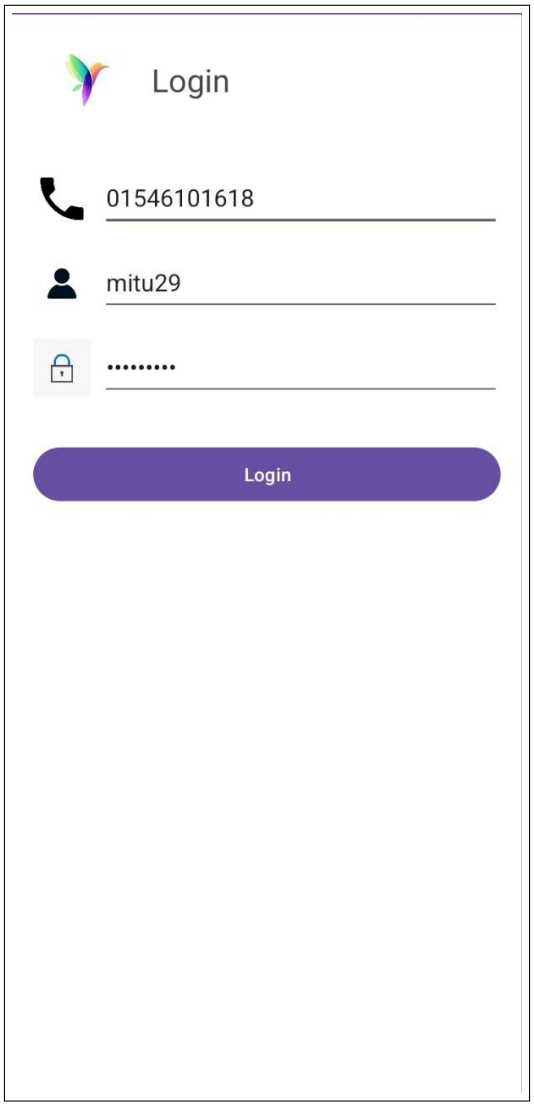

Figure 3.3: Log In

3.4 Home page

The *EchoSafe* home page features quick access to safety functions like **SOS**, **Siren**, **View Contacts**, **Record Audio**, **Self Defence**, **Help Lines**, **Fake Calls**, and **Where Am I?**. These features empower users to take action and stay connected in critical situations.

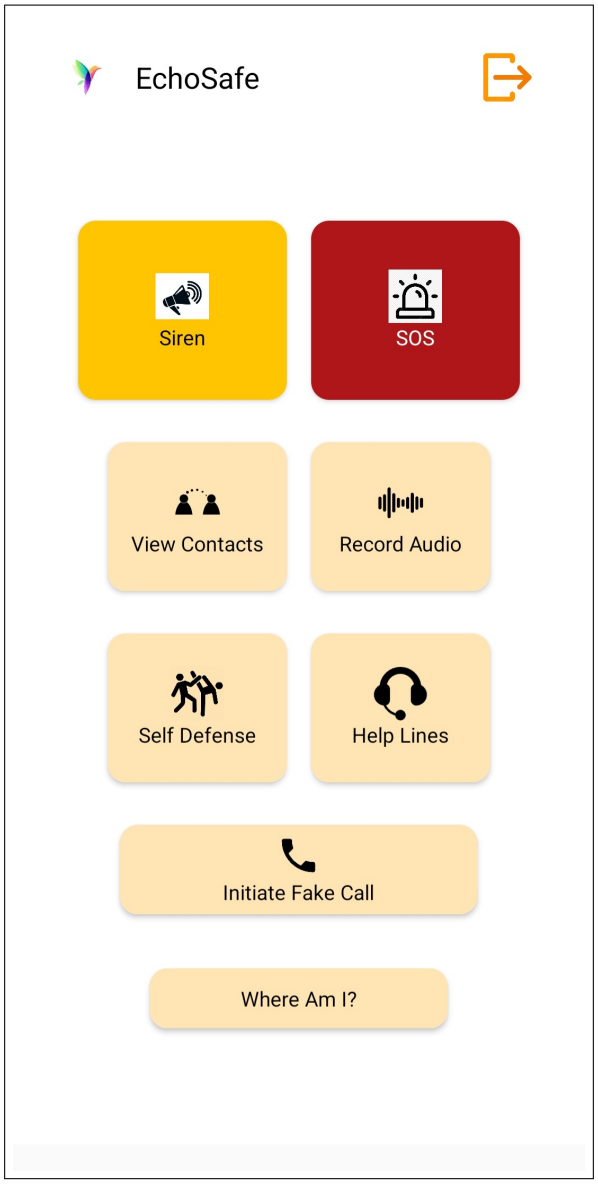

Figure 3.4: Home page

3.5 Siren button

The **Siren button** in *EchoSafe* draws attention quickly by triggering a loud siren sound on the user's device, alerting passersby or nearby individuals. This feature is useful in emergencies when users need to signal for help.

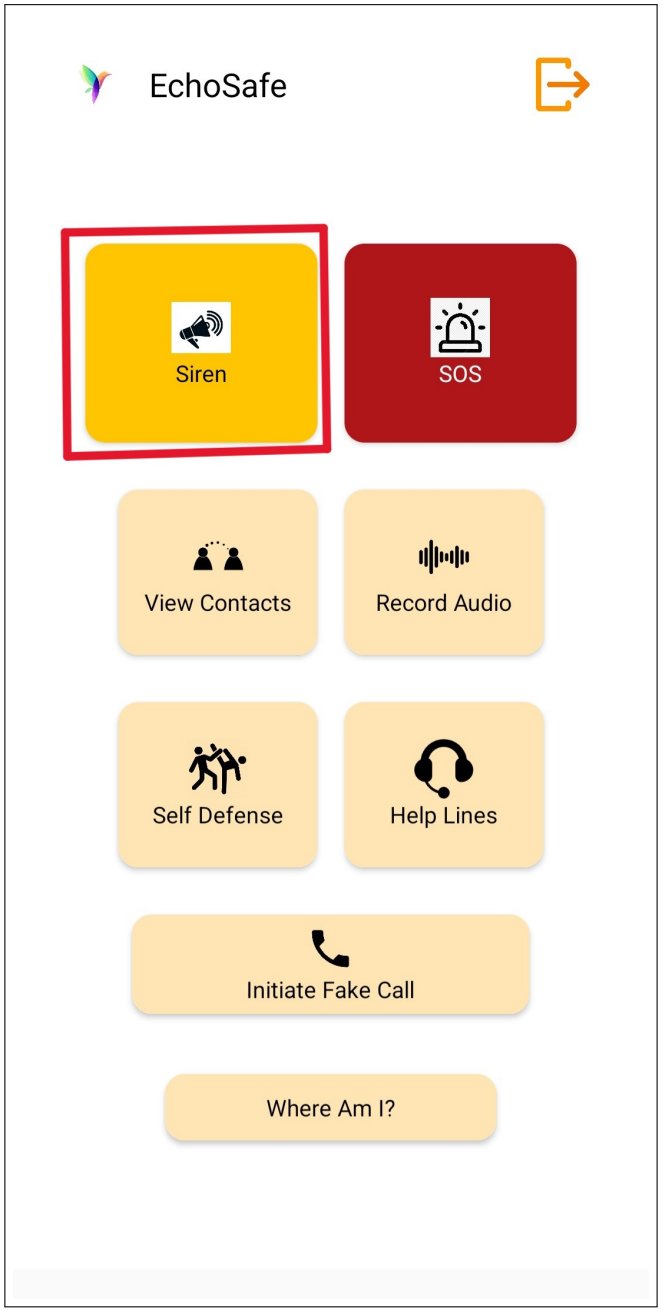

Figure 3.5: Siren Button

3.6 SOS Button

The **SOS button** in *EchoSafe* provides quick access to emergency assistance. When activated, it sends alerts to preset contacts and authorities, notifying them of the user's location. This feature is crucial for users in distress, offering immediate help. The button is prominently displayed on the home screen for easy access.

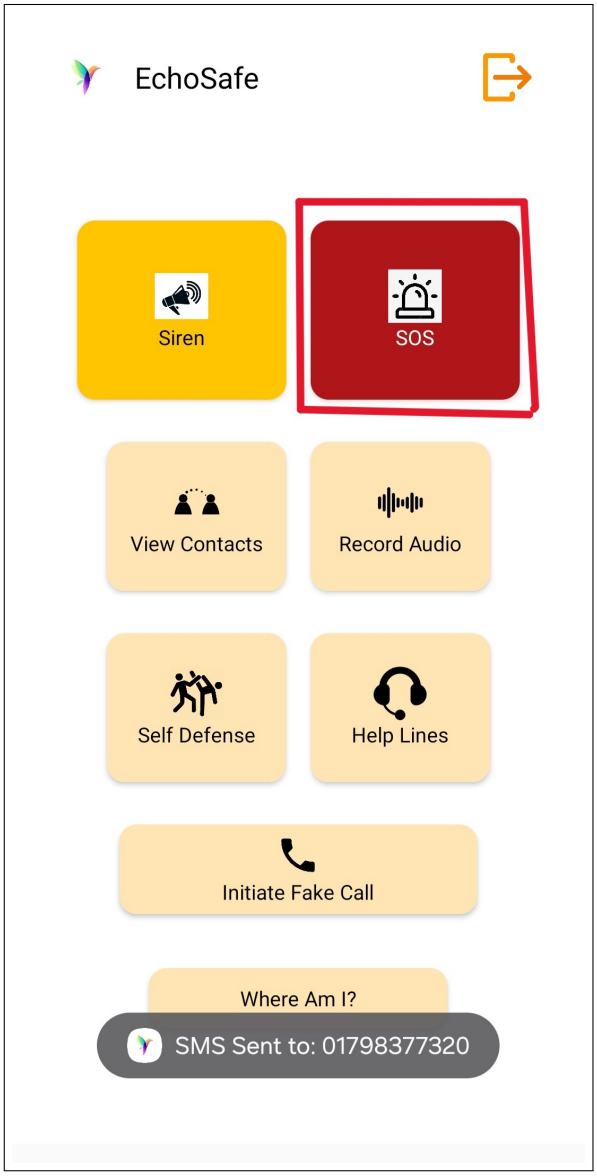

Figure 3.6: SOS Button

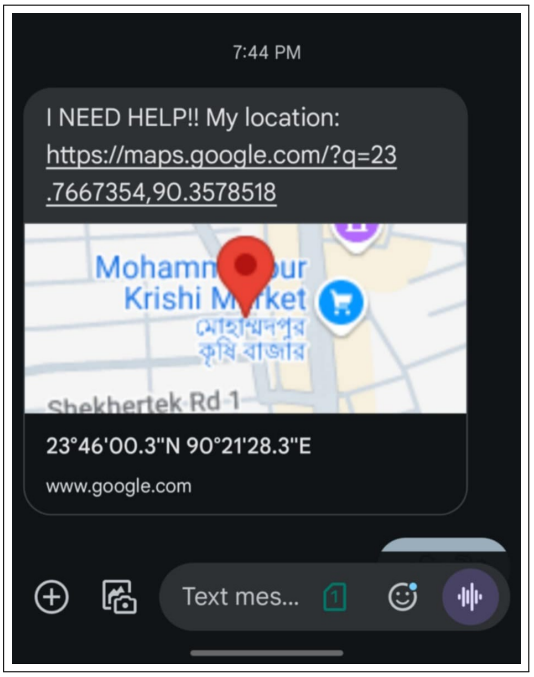

Figure 3.7: SOS message to contact

3.7 View Contacts

The **View Contacts** feature allows users to manage up to 5 contacts, enabling them to delete, add, or modify their list anytime, ensuring quick access to emergency contacts.

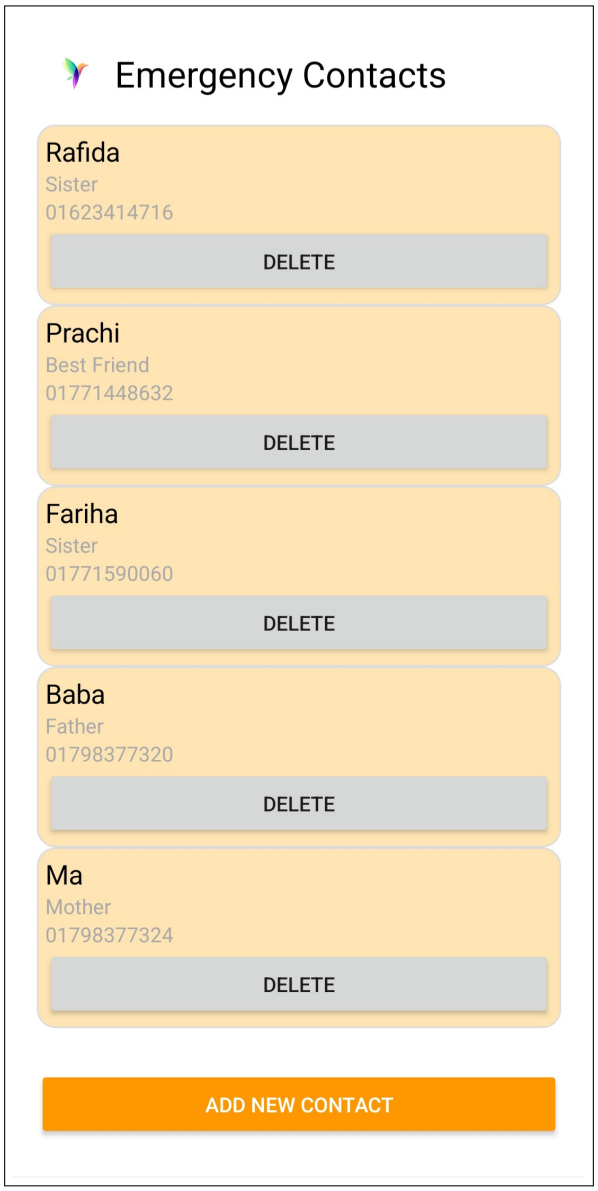

Figure 3.8: View Contacts

3.8 Record Audio

The **Record Audio** feature enables users to capture audio recordings in real time, providing evidence and facilitating communication during emergencies.

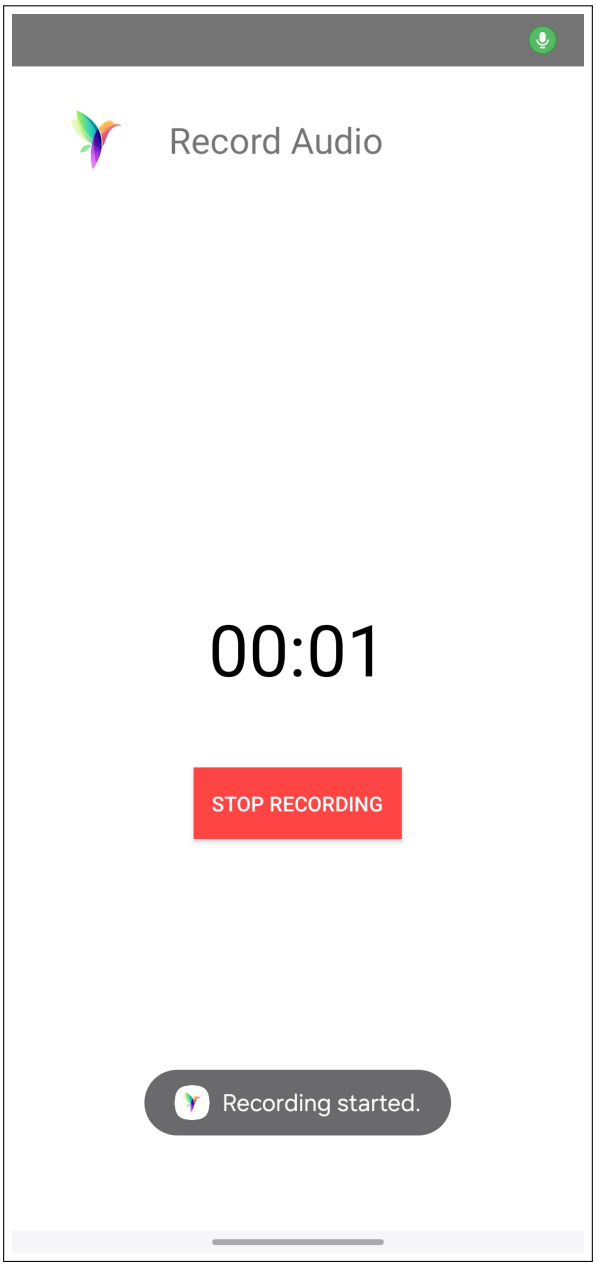

Figure 3.9: Audio Record

3.9 Self Defense

The **Self Defense** button provides quick access to safety tips, tutorials, and resources to empower users with knowledge and techniques for personal protection.

Figure 3.10: Self Defense

3.10 Helpline

The **Helpline** feature provides quick access to three essential contacts: **law**, **emergency number**, and **police**, enabling users to connect with the appropriate support during critical situations.

Figure 3.11: Helpline

3.10.1 Law

The **Law** helpline provides users with immediate access to legal advice and support from qualified professionals for any legal issues or emergencies.

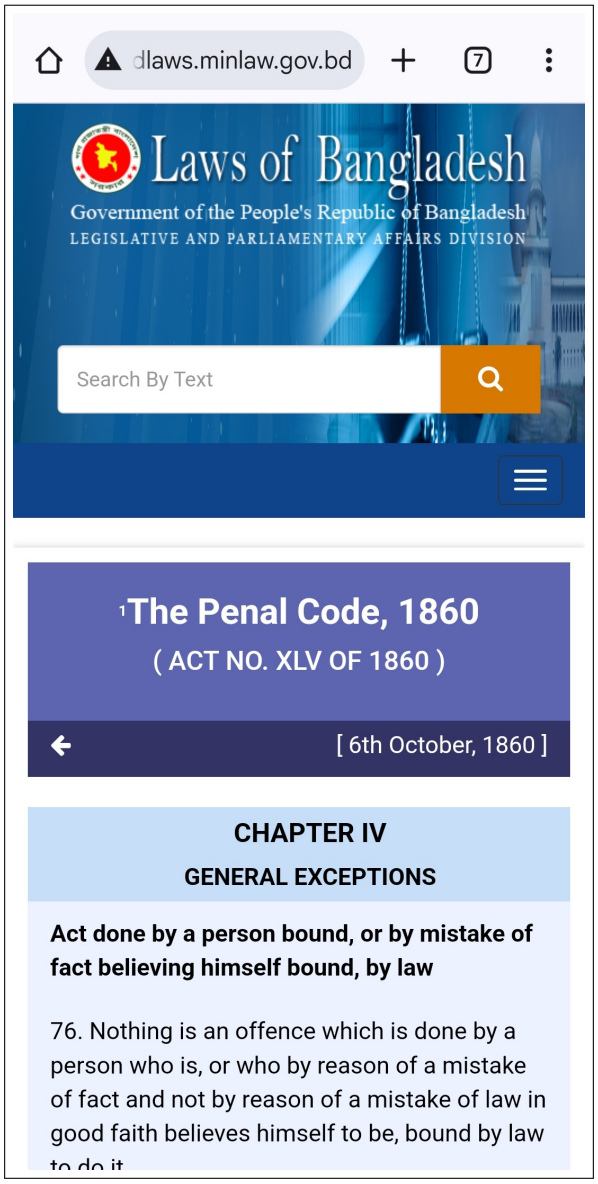

Figure 3.12: Helpline - Law

3.10.2 Emergency Contact

The **Emergency Contact** feature allows users to quickly connect with emergency services, ensuring immediate assistance in critical situations.

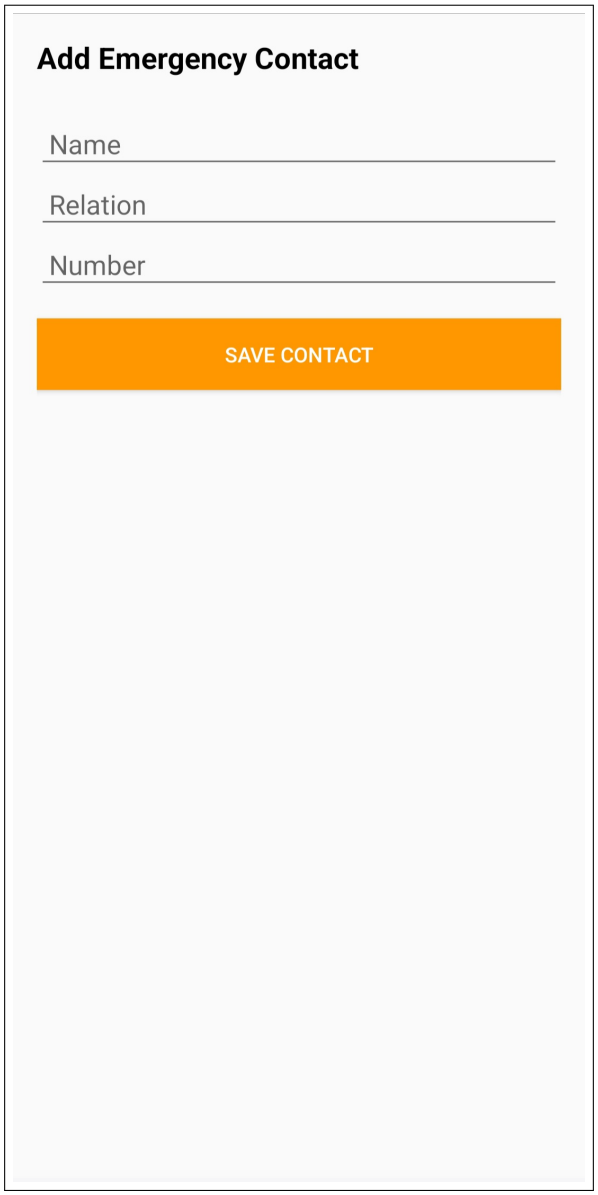

Figure 3.13: Helpline - Emergency Contact

3.10.3 Police

The **Police** feature enables users to quickly reach law enforcement for help in emergencies, ensuring a fast response to urgent situations.

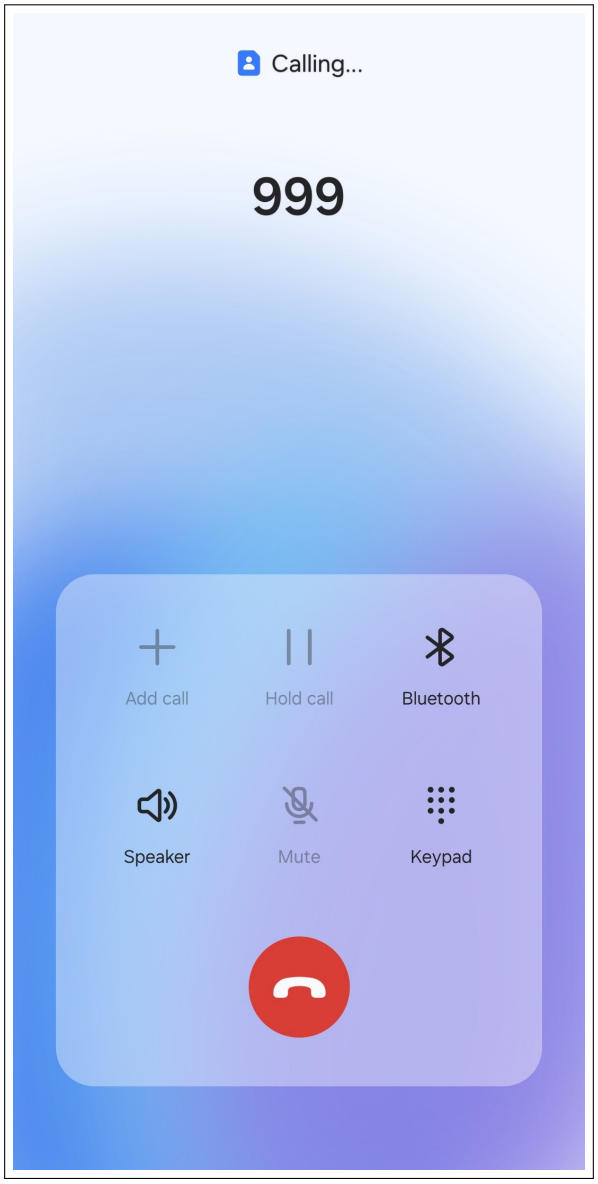

Figure 3.14: Helpline - Police

3.11 Fake Call

The **Fake Call** feature provides users with a simulated incoming call to help them discreetly exit uncomfortable situations.

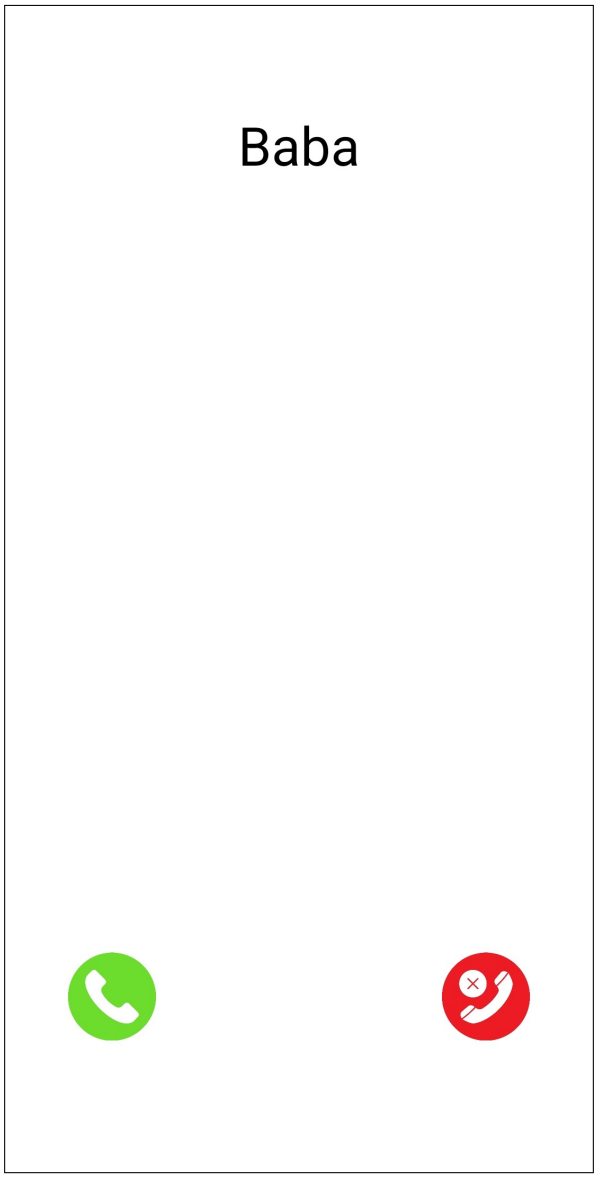

Figure 3.15: Fake Call

3.12 Where Am I?

The **Where Am I?** button allows users to view their current location on a map, helping them understand their surroundings and plan their next steps.

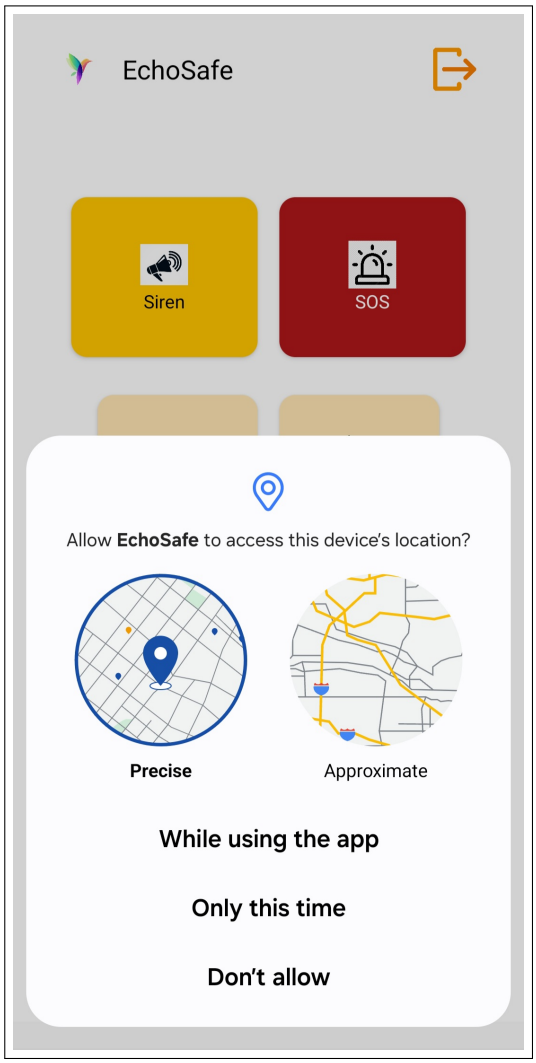

Figure 3.16: Permission for Location

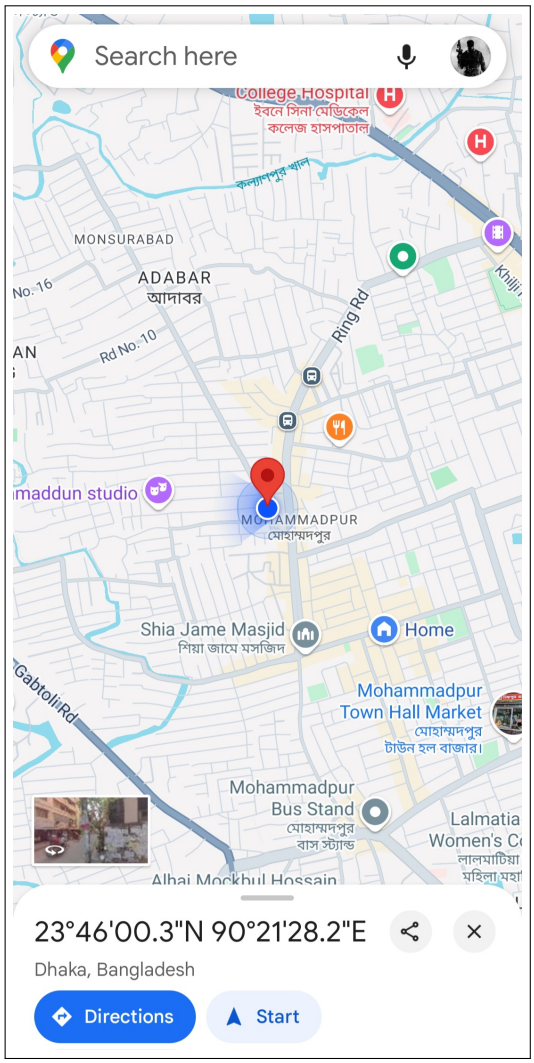

Figure 3.17: Location in map

Chapter 4

Conclusion

EchoSafe is a dedicated solution for enhancing women's safety through its comprehensive and user-friendly features. By integrating tools like SOS alerts, Siren, location sharing, and self-defense resources, the app addresses critical safety needs effectively.

While challenges like device compatibility and network dependency exist, the app's design prioritizes accessibility and reliability. With potential for future advancements, *EchoSafe* aims to remain a vital tool in empowering women and ensuring their security in various environments.