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Sheshield -Women's Safety Management Portal

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Abstract : ***Women's safety is a major concern in today's society, especially when travelling alone or facing unexpected situations. She Shield – Women's Safety Management Portal is a mobile application developed to provide essential safety features in one place. It includes Emergency SOS, live location sharing, Safe Journey tracking, emergency contacts, Fake Call, Loud Siren, Strobe Light, and Safety Map. The application also provides AI-based safety guidance and educational resources to improve safety awareness. With its simple and user-friendly interface, She Shield aims to help women access emergency support, stay connected with trusted contacts, and feel more confident and secure in their daily lives.***

IndexTerms - Women's Safety, She Shield, Emergency SOS, GPS Location Sharing, Safe Journey, Mobile Application, Personal Security, AI Safety Assistant.

I. INTRODUCTION

Women's safety has become an important social concern in today's world. Despite improvements in education, technology, and communication, many women still face safety challenges while travelling alone, returning home late at night, using public transportation, or visiting unfamiliar places. In emergency situations, getting immediate assistance and informing family members or trusted contacts can sometimes be difficult. These challenges highlight the need for accessible and reliable safety solutions that can support women in their daily activities.

With the rapid growth of smartphone technology, mobile applications have created new opportunities to improve personal safety. Smartphones offer useful capabilities such as GPS tracking, internet connectivity, communication services, cameras, and notification systems. By combining these technologies, it is possible to develop an application that provides multiple safety-related services through a single platform.

She Shield – Women's Safety Management Portal is designed with this objective. It is a mobile application that brings together different safety tools to help women respond to uncomfortable situations, communicate with trusted people, and access useful safety information. Instead of depending on multiple applications, users can access essential safety features from one organized dashboard.

1.1 Background of the Project

In everyday life, women may encounter situations where they feel uncomfortable or unsafe. Sometimes, they may not have enough time to search for emergency contact numbers or explain their location to someone. In such circumstances, quick access to safety tools can be helpful.

Traditional safety methods mainly depend on phone calls, messages, and assistance from nearby people. However, these methods may not always be convenient, particularly when a person is unable to communicate openly.

She Shield aims to address these challenges by using mobile technology to provide convenient access to emergency assistance, location sharing, journey monitoring, and safety awareness resources.

1.2 Need for the Application

There is a growing need for a single platform that provides different personal safety features in an easily accessible manner. Users may need emergency assistance, location sharing, journey reminders, or safety guidance depending on their situation.

The main reasons for developing She Shield include:

- **Quick Emergency Assistance:** To provide easy access to emergency alerts through the SOS feature.
- **Location Sharing:** To help users share their current location with trusted contacts.
- **Journey Monitoring:** To allow users to set journey details and receive reminders to confirm safe arrival.
- **Personal Safety Tools:** To provide options such as Fake Call, Loud Siren, and Strobe Light.
- **Safety Awareness:** To provide useful information about personal safety and emergency preparedness.
- **Easy Accessibility:** To combine important safety features in one simple and user-friendly application.

1.3 Overview of She Shield

She Shield is developed as a centralized women's safety application that focuses on emergency support, communication, and personal safety awareness. The application provides different modules to support users in various situations.

The Emergency SOS module is designed to alert registered contacts when assistance is required. The Safe Journey module helps users manage their travel details and expected arrival times. The Emergency Contacts section allows users to save trusted people for quick communication.

In addition, the Safety Map provides a map-based interface for accessing relevant location information. The She Shield AI module offers safety-related suggestions and travel guidance, while the Empower Learning Hub provides educational content related to personal safety.

Other useful tools, including Fake Call, Loud Siren, Strobe Light, Share GPS, Bystander QR, and Silent Evidence, are included to make the application more comprehensive.

1.4 Main Features of the Proposed System

The proposed application includes the following major features:

1. **Emergency SOS:** Provides a quick way to initiate emergency alerts and notify registered contacts.
2. **Safe Journey:** Helps users monitor their journeys and confirm their safe arrival.
3. **She Shield AI:** Offers AI-assisted safety suggestions and preventive guidance.
4. **Safety Map:** Provides a map-based interface for viewing relevant safety-related locations.
5. **Emergency Contacts:** Allows users to store and access trusted contact information.
6. **Fake Call:** Simulates an incoming call to help users leave uncomfortable situations.
7. **Loud Siren:** Produces a loud sound to attract attention when required.
8. **Strobe Light:** Uses the smartphone flashlight to provide a visual signal.
9. **Share GPS:** Supports sharing the user's location with trusted people.
10. **Empower Learning Hub:** Provides safety awareness and educational resources.

1.5 Objectives of the Proposed System

The primary objective of She Shield is to develop a convenient and accessible mobile platform that supports women's personal safety.

The specific objectives are:

- To develop a centralized platform containing multiple women's safety features.
- To provide quick access to emergency assistance.
- To support location sharing with trusted contacts.
- To improve journey safety through arrival reminders and check-ins.
- To provide useful tools for handling uncomfortable situations.
- To increase awareness about personal safety and emergency preparedness.

  To create a simple interface that can be easily used by different age groups

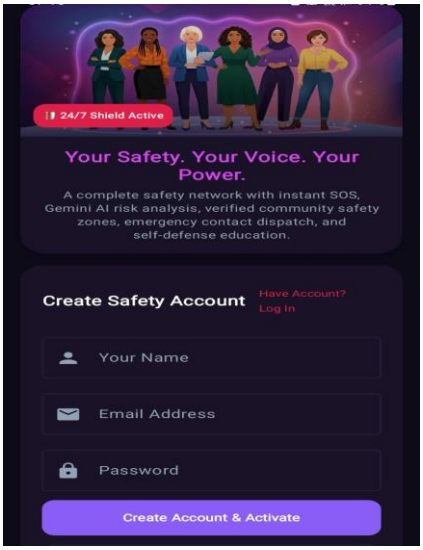

Fig 1. Login Page



Fig 2.Dashboard Page

2. Analysis

The She Shield application was developed to provide women with easy access to different safety-related services through a single mobile platform. After completing the development of the application, its major features were considered for functional and performance evaluation. The main purpose of this evaluation was to understand how the application works, whether its features meet the expected requirements, and how easily users can access the available services.

The application brings together several features, including Emergency SOS, GPS Location Sharing, Safe Journey, Emergency Contacts, Safety Map, and AI-based safety guidance. Each feature serves a different purpose, but all of them contribute towards the common goal of supporting women's personal safety.

2.1 Functional Results

During functional evaluation, the different modules of She Shield were examined based on their intended purpose. The main focus was to check whether users could access the features and perform the required operations without difficulty.

The Emergency SOS module provides a simple interface for initiating an emergency alert. The Safe Journey module allows users to enter journey details and manage arrival reminders. Similarly, the Emergency Contacts section helps users save and access important contact information when required.

Other features, such as Fake Call, Loud Siren, and Strobe Light, provide additional tools that may be useful in uncomfortable situations. The Safety Map and GPS Sharing modules are designed to provide location-related assistance.

The functional evaluation helps identify whether each module performs its expected task and whether any improvements are needed.

2.2 Emergency SOS and Location Sharing Analysis

Emergency assistance and location sharing are two important parts of the She Shield application. During evaluation, attention is given to how easily users can access the SOS option and how the application handles emergency notifications.

The location-sharing feature is designed to help users communicate their current whereabouts to trusted contacts. This can be particularly useful when travelling alone or visiting unfamiliar places.

However, these features depend on factors such as internet connectivity, GPS availability, and device permissions. Therefore, their performance needs to be checked under different conditions to understand their practical limitations.

2.3 Safe Journey Analysis

The Safe Journey feature is developed to help women keep track of their journeys and confirm their safe arrival. Users can enter their journey information and set an expected arrival time.

The application uses the configured time to provide reminders and support the arrival confirmation process. This feature is useful because it encourages users to stay connected with trusted people during travel.

The evaluation mainly focuses on whether journey details are recorded correctly, reminders work as expected, and arrival confirmation is handled properly.

2.4 Analysis of Additional Safety Features

She Shield includes several additional tools to provide more options for users in different situations.

The Fake Call feature simulates an incoming call, which may help users leave an uncomfortable situation. The Loud Siren produces an audible alarm, while the Strobe Light uses the smartphone flashlight to provide a visual signal.

The Bystander QR feature provides access to relevant information through a QR code, depending on its configuration. Silent Evidence is intended to support the recording or storage of safety-related information.

These features make the application more comprehensive by offering different types of safety support through one platform.

2.5 AI-Based Safety Assistance Analysis

The She Shield AI module is included to provide users with general safety information, preventive suggestions, and journey preparation guidance.

Its usefulness depends on how clearly and accurately it responds to users' questions. During evaluation, the responses can be examined based on their relevance, readability, and response time.

This feature adds an interactive element to the application and makes safety-related information easier to access. However, AI-generated suggestions should be treated as general guidance rather than a replacement for emergency services.

2.6 User Interface and Usability Analysis

The user interface is designed to make the application simple and convenient to use. The dark theme with purple and magenta highlights gives the application a consistent appearance, while separate cards help organize the different features.

The dashboard provides access to important safety tools without requiring users to search through multiple screens. The bottom navigation bar also makes it easier to move between different sections.

From a usability perspective, easy navigation, clear icons, readable text, and quick access to emergency functions are important factors. These design choices aim to make the application understandable even for users who are not highly familiar with mobile technology.

2.7 Performance Analysis

The performance of She Shield can be understood by examining different technical parameters, including response time, GPS accuracy, alert delivery, and application reliability.

The response time indicates how quickly the application reacts to user actions. GPS accuracy helps determine the quality of location information, while alert delivery measures whether emergency notifications reach the intended contacts.

Battery consumption and application stability are also important because the application may use location services and background reminders.

These parameters help identify areas where the application can be improved to provide a smoother and more reliable experience.

3. Methodology

The methodology of the She Shield application focuses on designing and developing a mobile-based women's safety platform that combines emergency assistance, location sharing, journey monitoring, and safety awareness features. The development process follows a systematic approach, starting from identifying user requirements and designing the application interface to implementing its modules and testing their functionality.

The main aim of this methodology is to create a simple, accessible, and reliable application that allows users to access different safety features from a single platform. The application uses smartphone capabilities such as GPS, internet connectivity, notifications, and other device features wherever supported.

3.1 Requirement Analysis

The first stage of development involves identifying the safety needs of users and understanding the problems they may face in everyday situations. Based on these requirements, different features are selected and organized into separate modules.

The major functional requirements include:

- **User registration and profile management.**
- **Emergency contact management.**
- **Emergency SOS alerts.**
- **GPS-based location sharing.**
- **Safe Journey monitoring and arrival reminders.**
- **Fake Call, Loud Siren, and Strobe Light.**
- **Safety Map and location-related information.**
- **AI-assisted safety guidance.**
- **Safety education and awareness resources.**
- **Community and safety reporting features.**

The application is also designed to provide a simple interface, easy navigation, and quick access to important functions.

3.2 System Design and Architecture

After identifying the requirements, the overall structure of the application is designed. The system is divided into different modules so that each feature can perform its specific function independently while remaining part of the same application.

The main components include:

- **User Interface: Provides the dashboard, navigation menu, and different safety-related screens.**
- **Emergency Management Module: Handles SOS alerts and emergency contact information.**
- **Location Management Module: Uses GPS services to obtain and share location information, subject to device permissions.**
- **Journey Management Module: Stores journey details and manages arrival reminders.**
- **Safety Tools Module: Provides Fake Call, Loud Siren, and Strobe Light functionality.**
- **AI Assistance Module: Provides safety-related suggestions and guidance according to the implemented AI functionality.**
- **Information Module: Manages learning resources, community information, and safety reports.**

This modular structure makes the application easier to maintain, test, and improve.

3.3 User Interface Development

The user interface is designed to provide a smooth and convenient experience. Since the application is intended for use during both normal and emergency situations, important features are placed in easily accessible locations.

The dashboard displays the main safety functions through separate cards with recognizable icons and short descriptions. A dark-themed design with purple and magenta highlights is used to maintain a consistent visual appearance.

The bottom navigation bar helps users move between different sections of the application, while the prominent SOS button makes the emergency feature easy to identify.

3.4 Emergency SOS Implementation

The Emergency SOS module is one of the main components of She Shield. It is designed to help users request assistance when they encounter an unsafe or emergency situation.

The user can activate the SOS option from the application. Based on the available permissions and implemented communication services, the system can prepare or send an emergency notification to registered contacts along with the user's location information.

This feature aims to reduce the time required to communicate an emergency and make it easier for trusted contacts to respond.

3.5 GPS Location Sharing

The location-sharing module uses the smartphone's GPS functionality to obtain the user's geographical location. After obtaining the location and receiving the necessary permissions, the application can support sharing it with selected trusted contacts.

This module is useful when users are travelling alone or want their family members to know their current whereabouts. The accuracy and availability of location information depend on device settings, GPS availability, network connectivity, and user permissions.

3.6 Implementation of Quick Safety Tools

The application includes several quick safety tools to support users in uncomfortable situations.

- **Fake Call: Simulates an incoming call to help users leave an uncomfortable situation.**
- **Loud Siren: Produces a loud alarm sound to attract attention.**
- **Strobe Light: Uses the smartphone flashlight to provide a flashing visual signal.**
- **Share GPS: Allows users to share their location with trusted contacts.**
- **Bystander QR: Provides access to relevant emergency or medical information through a QR-based interface.**
- **Silent Evidence: Provides an interface for recording or storing safety-related evidence, subject to device permissions and applicable privacy requirements.**

These tools are designed to provide additional options that users can access directly from the application.

4. Conclusion

She Shield – Women's Safety Management Portal is developed to make personal safety easier and more accessible for women through mobile technology. The application brings together several useful features, including Emergency SOS, GPS Location Sharing, Safe Journey, Emergency Contacts, Safety Map, Fake Call, Loud Siren, and other safety tools in one place.

The main idea behind developing this application is to reduce the difficulty of accessing safety services during unexpected situations. Instead of depending on different applications for different purposes, women can use She Shield to access important safety features through a single platform. Features such as location sharing and journey reminders also help users stay connected with their trusted contacts.

Another important aspect of the application is its focus on safety awareness. The AI-based safety assistant and Empower Learning Hub are included to provide useful suggestions and information related to personal safety. The simple interface also makes it easier for users to understand and access the available features.

Although the application offers several useful facilities, there is still scope for improvement. Future development can focus on improving emergency alert delivery, GPS accuracy, AI assistance, and overall application performance.

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