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SafeHer - A Women Safety App

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Abstract - This study is focused on the use of mobile applications aimed at assisting women in their quest for safety resources. The key research question stems from the fact that women's safety is currently facing numerous limitations, for instance; access to help is limited and there is little knowledge on what resources are available. To mitigate these dangers, a mobile application was designed with a number of safety features attached and with a means for women to via services directly. and with a means for women to via services directly. To include women users and safety service providers, interviews, surveys, and prototype testing were all part of the new strategy. All the collected and developed feedback was directed to the improvement of the application's features in order to fulfil the purpose of the application effectively.

INTRODUCTION

The primary objective of the study is to develop a smartphone application tool that appropriately links women to services for safety, taking into account the barriers of lack of awareness, unavailability, and inactivity of mechanisms for seeking help in a timely manner.

The report findings indicate that even in the existence of safety measures, most women use the networks, which slows down response rates. The use of digital tools can improve response and access to safety measures, hence the need to incorporate such tools in the mobile application.

By conducting a synthesis and evaluation of existing safety mechanisms for women, we intend to develop a functional mobile application that helps connect women with vital safety services. The Application will verify all the service providers and ease the access of critical assistance for women within their reach. The system enables women to search and reach out to safety services within their vicinity, thus helping them when the need for assistance arises. This includes a systems that operates all the time that is online for reporting, victims aids and tips and resources for safety. The outreach of women's mobile application does not only complement the conventional way of requesting for safety help; it enhances it by enabling women to have access to the rescue services within the shortest time possible and in a safe way.

1.Review Of Literature

1.1 Study of Existing System

Internet Dependency: All these applications need internet connectivity to operate effectively and thus become inconsequential in areas with poor network coverage.

Consumption of Battery: The constant use of GPS tracking and real-time updates drains the battery for users, leaving them helpless during emergency cases.

Privacy and Security Risks: Real-time location sharing and personal data leave users exposed to several privacy issues if accessed unproperly by the parties involved.

Slowed Response Time: Integration with emergency services is limited, hence delayed response times, reducing effectiveness of the app in the critical situation.

False alarms or accidental triggers: High false alarm and accidental SOS triggering may reduce reliance and prompt users or responders to ignore alerts.

1.2 Findings from Literature Review

By conducting a synthesis and evaluation of existing safety mechanisms for women, we intend to develop a functional mobile application that helps connect women with vital safety services. The Application will verify all the service providers and ease the access of critical assistance for women within their reach.

2.Objective of Proposed System

•**Strengthening Women's Safety:** Enable quick alerts to families or authorities during emergencies.
•**User-Friendly Interface:** Simplified design for easy access to safety features like SOS buttons and tracking.
•**Safety Resources:** Information on self-defense techniques and contact details for local police and safe zones.
•**Community Trust:** User reviews for safety resources to promote transparency and trust.
•**Empowerment Networks:** Connect women for support and advice.

•**Real-Time Tracking:** Share locations and send SOS alerts to trusted contacts.
•**Support Women Entrepreneurs:** Help women expand their businesses in safety products.

3.Methodology

The design and development of women's safety apps should be done methodically to provide a reasonable and usable solution. The procedure is divided into the following important layers.

Presentation Layer: This is the front-end of the application, ensuring that the design provides for easy navigation by the use of buttons, text boxes, icons, and the like. The focus here is to make sure the users can easily access and use the safety features even when under extreme pressure.

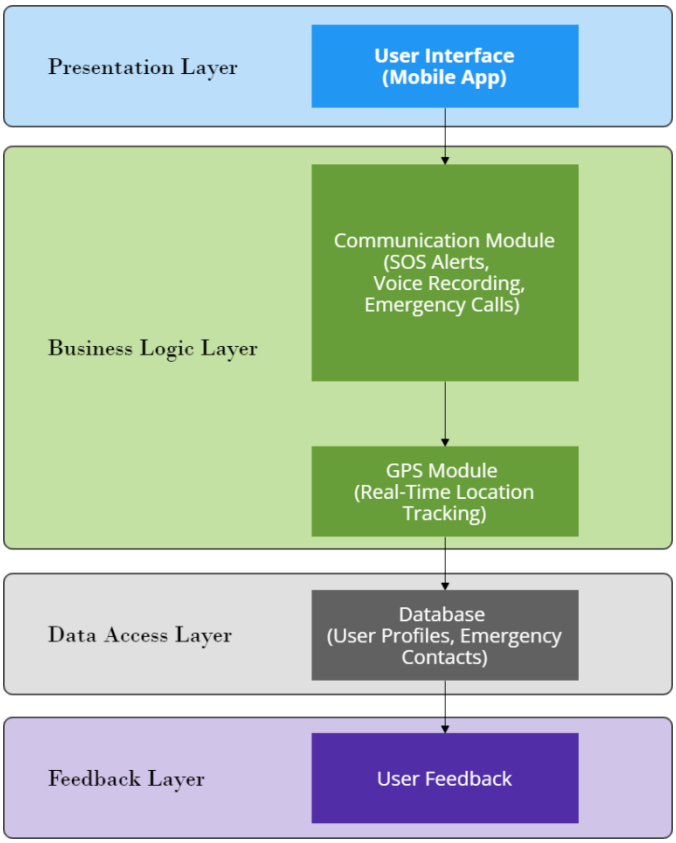
Business Logic Layer: This involves the main purpose of the application. It includes the processing of information (such as user request), the storage of emergency contacts, the triggering of SOS alert buttons, the use of safety measures like a GPS tracker, an alarm and a messaging system that sends alerts to designated contacts. The business logic also caters for rules within the application and example providing location information to users only in emergency cases and restricting access to some features to authenticated users only.

Data Access Layer: This component of the application manages the databases. This includes creating and retrieving essential information such as user data, contact lists, and history of events. Data protection measures are also taken to ensure that sensitive information such as the users' location and even profiles do not get compromised while real time access is made available in case of emergencies.

Feedback Layer: The feedback loop is very critical in any project that requires iterative development. It contains an assessment of the app's performance by integrating reviews from users, feedback on incidents, and statistics on how well the system performs. This information is used in the process of maintaining the existing features, repairing of the problems, and adds things the user did not have before such as better gun response times or new emergency protocols due to changes in the user's security environment.

All the layers work together to make the app effective, safe, and dependable while developing in accordance with the changing users and technology.

Flowchart Describes the overall and description of the WOMEN SAFETY Application:



4.Modules of Software System

1.Real-Time Location Tracking: Continuously fetches and updates user's GPS location and sends periodic location alerts to registered contacts.
2.SOS Alert: Sends emergency messages with the user's location to pre-registered contacts and authorities every 30 seconds.
3.Siren Feature: Activates a loud siren to alert nearby individuals and potentially deter attackers.
4.Voice Recording: Captures surrounding audio during an emergency for future evidence.
5.Helpline Numbers: Provides quick access to essential emergency numbers like police, ambulance, and women's safety helplines.

5.Requirements

5.1 Software Requirement

5.1.1 Frontend
XML

5.1.2 Backend
Java
Firebase

5.2 Software Requirement

5.2.1 Hardware with specification

16 GB RAM,
1TB SSD,
i7 processor

6.Application of Proposed System

User Management: Users can register and create accounts to manage their profiles, enabling them to track alerts, access safety features, and update personal information.
Admin Management: Admins can create accounts to manage system features, monitor usage, and update safety resources, ensuring timely assistance for users.
Emergency Notification System: Integration with local emergency services allows users to quickly alert authorities and share their location during distress situations.
Real-Time Tracking: Provides users with continuous location monitoring, ensuring that registered contacts are aware of the user's whereabouts in emergencies.

7.Advantages and Disadvantages

7.1Advantages:

- **Real-Time Tracking:** Continuous monitoring enhances user safety by allowing quick identification of their location.
- **Emergency Notifications:** SOS alerts and social media integration enable broad notification networks in emergencies.
- **Evidence Collection:** Features like voice recording provide crucial evidence in distress situations.

7.2Disadvantages:

- **Dependence on Connectivity:** Limited functionality in areas with poor signal or internet access.
- **Privacy Concerns:** Sharing location data with contacts raises potential privacy issues.
- **Battery Drain:** Continuous tracking may quickly deplete device battery life.

8.Conclusions and Future Work

In conclusion, the proposed Women Safety Apps create an interactive platform for users to enhance their safety and emergency response. By integrating real-time tracking and direct communication with authorities, these apps aim to digitalize personal safety measures, providing quicker assistance and support. Future updates will focus on advanced features, ensuring a more reliable and user-friendly experience that continuously adapts to the needs of women, thereby fostering a safer environment in everyday situations.

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