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Women Safety Application

Harini M[1], Mr Arun M[2]

[1]III BSC CS B, Sri Krishna Adhitya College of arts and science, Coimbatore.
[2]Department Computer Science, Sri Krishna Adithya College of Arts and science, Coimbatore .

ABSTRACT:-

The growing concerns about women's safety demand the adoption of effective technological solutions. This project introduces a Women Safety Application, a mobile platform designed to provide immediate assistance, enhance security, and empower women in distress. The app includes the following key features:

1. Emergency SOS Alert: Users can send an alert with their location details to selected emergency contacts and authorities with a single click.

2. Real-Time Location Tracking: Trusted contacts can monitor the user's live location during travel or emergencies for added safety.

3. Panic Button: Includes a physical or digital panic button to ensure swift action during critical situations.

4. Safety Notifications: Provides details about nearby police stations, hospitals, and marked unsafe zones using GPS.

5. Voice Activation: Allows hands-free activation of safety features, ensuring quicker responses during emergencies.

6. Community Reporting: Enables users to report unsafe incidents and contribute to a safety map for the community.

7. Self-Defense Learning: Offers tutorials and safety tips to educate users on personal safety and basic self-defense techniques.

The app utilizes technologies like GPS, cloud services, and location-based services to deliver an effective, easy-to-use, and reliable solution. Its primary goal is to ensure women's safety by connecting technology with practical safety measures.

Keywords: Women safety, SOS alerts, location tracking, community safety, personal security.

INTRODUCTION:-

In today's world, women's safety has become a pressing concern. Women often face harassment in various spaces, including educational institutions, workplaces, and even within their homes. Many women hesitate to step out of their comfort zones due to fears about their security. With the rising incidence of crimes against women, their freedom is increasingly curtailed. Critical situations can arise unexpectedly, necessitating a solution that allows women to seek help or escape danger quickly and easily.

One of the challenges with current law enforcement is the inability to respond swiftly to distress calls. This is often due to a lack of precise location details or even the unawareness of an ongoing crime. In such situations, victims may find it difficult to contact the police discreetly and confidently. To address these limitations, a dedicated Women's Safety Application has been developed. This smartphone application provides a reliable method for women to contact emergency services when they need assistance.

Gender-based violence remains a global issue despite years of efforts by civil society and women's rights organizations. While many nations have laws against domestic violence, sexual assault, and other crimes, enforcing these laws effectively remains a significant challenge. This lack of enforcement contributes to a society that feels unsafe and unjust for women, with many perpetrators escaping punishment. To create a safer and more equitable society, it is imperative to utilize modern technology to empower women and protect them from harm.

This women's safety app is designed to provide an effective tool for women in distress. It uses GPS technology to determine the user's location and sends an alert message with a live location URL to pre-registered emergency contacts. The app also sends location updates to these contacts every three minutes until the user clicks the "Stop" button. This ensures that the user's movements are continuously monitored, enabling quick and precise rescue efforts.

In today's environment, especially for women, traveling alone at night can be risky. Identifying resources and leveraging tools to navigate unsafe situations is crucial to reducing the risk of violent crime. A smartphone safety app can play a vital role in helping women lower these risks and get assistance when

needed. Unlike many applications that are used only during emergencies, this app can also be used for precautionary purposes, emphasizing the importance of prevention.

The primary goal of this applicati”n is to create a safer environment through the widespread use of smartphones, which have become an integral part of daily life. With just one click, users can send an alert to the police and their emergency contacts, sharing their location and necessary details. This document outlines the features, development, and technical implementation of the application, which is dedicated to ensuring a secure environment for women everywhere.

RELATED WORK:-

A. ABHAYA: An Android Application for Women’s Safety:

The Android application “ABHAYA” aims to prevent incidents like the Delhi Abhaya case by providing a safety tool for women. This app uses 3G/2G data connectivity to track the user’s location in emergencies. It sends location updates through SMS with a clickable URL to the registered contacts every five minutes until the user clicks the “stop” button. When the “start” button is pressed, the app initiates a call to the first registered contact and sends location details to all contacts, enabling continuous tracking of the user’s movements for quick assistance.

B. S-ZONE: A System for Women’s Safety and Security

The “S-ZONE” system is designed to minimize the risk of women becoming victims of violent crimes such as robbery, assault, or domestic violence. This program is developed for the Android platform and leverages modern mobile technologies. By integrating GPS, the app enables emergency services to locate and rescue individuals swiftly during critical situations. The focus of S-ZONE is on providing quick and efficient responses to help women escape dangerous scenarios.

C. SHIELD: A Personal Safety Application:

The “SHIELD” application serves as a personal protection tool for users, offering instant safety assistance. It sends a message with real-time location updates to all registered contacts, allowing live tracking of the user's movements. The application heavily relies on GPS for location tracking and updates, which are reflected on the system’s website in real time, often within 0.5 seconds, depending on internet connectivity. This ensures that assistance is timely and effective.

D. Women Safety Android App:

The “Women Safety Android App” is designed to enhance safety using a simple and intuitive system. Unlike traditional SOS features, the app allows users to press the power button twice to send an emergency notification to selected contacts and law enforcement. This feature works even without internet or GPS connectivity. Continuous location updates are sent every minute, helping responders track the victim’s movement. Additionally, the system includes a control panel for the police to monitor cases and quickly locate victims based on highlighted location alerts, enabling rapid intervention.

E. Women Safety Mobile App:

The “Women Safety Mobile App” operates using GPS and advanced hardware integration for enhanced safety. The app activates when the user authenticates their fingerprint. It requires periodic fingerprint scans every minute, and failure to scan triggers an automatic SMS alert to registered contacts. This alert includes the user’s GPS location and activates a loud buzzer to draw the attention of nearby individuals. The system employs a GSM modem and a microcontroller-based circuit, ensuring the app is functional even in critical situations where the user cannot manually trigger the SOS feature. This functionality is particularly beneficial for scenarios where the victim is incapacitated or unable to physically operate the device.

DRAWBACKS:-

While women safety applications offer numerous benefits, there are several limitations and challenges that need to be addressed to improve their efficiency. These include:

1. Reliance on Internet and GPS:

Most safety apps depend heavily on internet connectivity and GPS for real-time tracking and alerts. However, in areas with poor network coverage or no connectivity, these apps may fail to function effectively.

2. Accidental Activation:

Unintentional triggering of SOS features can cause unnecessary alarm and waste valuable resources, especially for emergency services.

3. High Battery Usage:

Continuous GPS usage and app functionality can drain the smartphone’s battery quickly, which may render the app unreliable in prolonged emergencies.

4. Difficult Accessibility:

In high-pressure situations, users may struggle to access or operate the app, particularly if the interface is not straightforward or requires multiple steps.

5. Low Awareness and Adoption:

Many people are not familiar with such applications or how to use them effectively. Limited awareness and adoption reduce their overall impact.

6. Delayed Police Response:

Even when the app sends out alerts successfully, authorities may face challenges in responding promptly due to logistical or resource limitations.

7. Privacy and Security Risks:

Sharing location data raises concerns about privacy breaches and the potential misuse of personal information by third parties or hackers.

8. Dependence on Devices:

These apps require users to have a functional and charged smartphone. If the device is lost, damaged, or unavailable, the app becomes ineffective.

9. Financial Constraints:

Some applications include premium features or require additional hardware, which may not be affordable for everyone.

10. Language and Literacy Issues:

Many safety apps may not support all languages or consider users with limited literacy, making them less accessible to certain populations.

Overcoming these challenges through better technology, user-friendly design, and increased awareness can make women safety applications more reliable and effective.

EXISTING SYSTEM:-

Recent advancements in women's safety solutions include various options like smartphone applications, security systems, and wearable devices designed for everyday use.

One solution involves sending an alert to the police or pre-selected contacts when the user presses the power button on their smartphone. This system then shares the victim's real-time location after one minute, ensuring updated information if the user changes location.

Another approach incorporates fingerprint authentication. The user must periodically scan their fingerprint, typically every minute, to confirm their safety. If the scan is not completed, the system automatically sends the user's location to registered contacts via SMS. In critical situations, the user does not need to take any action apart from ceasing the fingerprint scans, triggering the alert process.

ADVANTAGES:-

The proposed system integrates advanced features, including real-time location tracking, while also incorporating functions from existing systems, such as GPS tracking and offline capabilities for scenarios without internet connectivity. Women can choose the most appropriate feature based on the situation they are facing.

The primary goal of this project is to create a portable women's safety software tool with the following functionalities:

1. SOS Alert: Sends an emergency message containing the user's GPS location to pre-registered contacts every 30 seconds to ensure real-time tracking during critical situations.
2. Siren: Activates a loud police siren to alert nearby people of the danger. In some cases, this can discourage the attacker from proceeding with harmful intentions.
3. Voice Recording: Includes a recording feature to capture surrounding audio, which can later serve as evidence during police investigations.
4. Helpline Numbers: Allows the user to quickly contact emergency services using a dedicated helpline feature within the app.

This system aims to provide women with a versatile and reliable tool to enhance their personal safety in various scenarios.

MODULE DESCRIPTIONS:-

Women Safety Application – Module Overview

1. User Registration and Profile Management:-

Users can sign up through email, phone number, or social media accounts.

Personal details such as emergency contacts, medical information, and location preferences are securely stored for quick access during emergencies.

2. Emergency Alert System:-

SOS Button: Instantly sends an alert to emergency contacts and authorities.

Auto SMS/Call: Automatically shares location details and a distress message via SMS or calls to predefined contacts.

Silent Alarm: Activates a discreet alert without sound, ideal for covert emergency situations.

3. Real-Time Location Tracking:-

Users can share their live location with chosen contacts in emergency situations.

There is an option to set up regular safety check-ins by sharing location at predefined intervals.

4. Incident Reporting:-

Allows users to report dangerous locations or incidents they encounter.

Users can upload evidence such as photos, videos, or audio recordings for more accurate reporting.

5. Safe Zone Identification:-

Displays the nearest safe locations like police stations, hospitals, and women's shelters.

Provides navigation directions to the closest safe zone for quick access during a crisis.

6. Self-Defense Resources:-

Offers a library of instructional content, including videos, guides, and articles on personal safety and self-defense techniques.

Users can also book self-defense classes or workshops available in their local area.

7. Community and Support Groups:-

Facilitates connection with local or virtual support groups for women.

Users can join discussion forums to share safety tips, experiences, and advice with others.

8. Threat Detection System:-

Monitors for unusual activity or movement, utilizing device sensors (such as fall detection).

Automatically triggers alerts if abnormal behavior or a possible threat is identified.

9. Helpline and Emergency Services:-

Provides quick access to local helplines for police, medical emergencies, and women's safety services.

Includes a chatbot for answering questions and directing users to appropriate resources in times of need.

10. Language and Accessibility Features:-

The application supports multiple languages to cater to diverse user needs.

Voice commands and text-to-speech functionality ensure the app is accessible to users with different abilities.

11. Guardian Monitoring Feature:-

Enables parents or guardians to monitor the user's location and activity in real-time.

Sends notifications if the user checks in or if an emergency alert is triggered.

12. Feedback and Analytics:-

Collects user feedback to continually improve the app's functionality.

Provides analytics on reported incidents and identifies areas with higher risks to enhance safety planning.

This structure is designed to offer a comprehensive set of tools for women's safety, ensuring ease of use, accessibility, and a range of proactive features in emergencies.

PROPOSED SYSTEM:-

The proposed system integrates advanced features, including live location tracking, and combines functionalities from existing systems like GPS tracking, along with additional capabilities for use in situations without an internet connection. Women can utilize any of these features based on their assessment of the situation they encounter.

The objective of this project Is to design a portable women's safety application that offers the following key features:

1. SOS Alert: Sends an emergency message to pre-registered contacts every 30 seconds, including the user's GPS location, to enable real-time tracking during emergencies.
2. Siren: Activates a loud police siren to alert nearby individuals of the ongoing situation. This feature can also act as a deterrent, discouraging the attacker from continuing their actions.
3. Voice Recording: Provides a recording option to capture surrounding audio, which can be valuable as evidence during police investigations.
4. Emergency Helpline: Includes a direct-call feature, allowing users to quickly contact emergency services through preloaded helpline numbers.

This system is designed to provide women with a reliable, multi-functional tool to enhance their personal safety in various scenarios.

CONCLUSION AND FUTURE ENHANCEMENT:-

This study presents the design and implementation of a women's safety system in the form of a mobile application. A location tracking subsystem was successfully developed to meet the project's objectives, and the key findings have been documented. The system is designed to be enhanced further as outlined in the future scope.

The application utilizes GPS technology to track the user's location through latitude and longitude coordinates. It provides a secure and supportive environment for women, enabling them to pursue activities such as working late hours without fear. By deterring potential offenders, this system aims to reduce crimes against women. It serves as a powerful tool for ensuring safety and security and is compatible with any Android smartphone.

With further research and innovation, the concept could be adapted into wearable devices like watches, necklaces, or bracelets. These devices would integrate GPS and GSM modules, enabling them to collect location data, generate a valid Google Maps link, and send it to pre-selected contacts for assistance. This advancement would make the system even more accessible and convenient for users.

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