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Adhivira: Women Safety Application

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Abstract: ***This research paper offers a thorough overview of the existing state of women's safety applications, reviewing the features, functionality, and user experience. The analysis pinpoints the main strengths and weaknesses of these applications, providing insights into their real-world effectiveness. With the continued escalation of violence against women in different parts of the globe, the creation and implementation of effective technological solutions have become more and more important. Along with assessing existing solutions, the paper outlines key features that should be prioritized in future development work, such as usability, accessibility, reliability, and integration with emergency response systems.***
Keywords: Women's safety application, Features, Functionality, Effectiveness, Violence against women, Technological solutions, Usability, Accessibility

I. INTRODUCTION

The problem of women's safety in society is a critical issue that affects women worldwide. Women face a higher risk of violence and harassment in both public and private spaces, and the impact of these crimes can be devastating and long-lasting. In today's world, ensuring the safety of women is more important than ever. Technology can play a key role in addressing this issue by providing women with tools that offer immediate assistance, real-time location tracking, and emergency communication. This women's safety application is designed to empower users with a sense of security and support in potentially dangerous situations. By integrating features such as one-touch emergency alerts, live GPS tracking, trusted contacts, and direct communication with emergency services, the application aims to create a quick and effective response system.

II. LITERATURE REVIEW

Different researches on women's safety have been done, and numerous apps have been created to cater to the same. The National Institute of Justice conducted a survey that indicated that 90% of women perceive that they are safer if they have a personal safety device with them. Furthermore, women who used safety applications felt safer when they were walking alone late at night. The research also pointed out that the majority of women want apps with features like GPS location tracking, emergency notifications, and direct communication with the police. An examination of available apps showed that there are a number of apps with these features, including "FRNDY", "Raksha" Some drawbacks were also mentioned, including slow response times, incorrect location tracking, and high battery usage. Furthermore, certain apps demand internet connectivity, which can be absent in certain locations. Acceptance by users of women's safety apps is determined by various factors like ease of use, perceived usefulness, and trustworthiness

III. KEY FEATURES OF WOMEN SAFETY APPLICATION

The WOMEN application is designed for safety and empowerment, beginning with a secure login system where users authenticate via mobile number or email. Once logged in, the app accesses the user's live location using GPS, allowing real-time tracking that can be shared with trusted contacts or emergency services. Key features include an SOS button for instant alerts, route tracking for travel safety, emergency contact integration, and live location sharing. Additional tools may include nearby help centre locators, safety tips, and in-app communication with guardians or authorities. All data is encrypted to ensure user privacy and security throughout the experience.

IV. METHODOLOGY

The development of the WOMEN safety application followed a structured methodology to ensure user security, reliability, and user-friendliness. Initially, the requirements were gathered which highlighted the need for features like SOS alerts, live location tracking, emergency contacts, and nearby help center locators. The application was then carefully designed with a simple and intuitive user interface, suitable for emergency use. During development, frameworks such as Flutter were used, along with services like custom APIs to handle authentication, real-time updates, and notifications.

Location tracking was implemented using GPS and integrated with Google Maps API to provide accurate and continuous live tracking. An emergency alert system was developed to send instant location-based alerts to trusted contacts via a one-tap SOS button. Thorough testing was carried out to ensure performance, accuracy, and ease of use, especially under emergency scenarios.

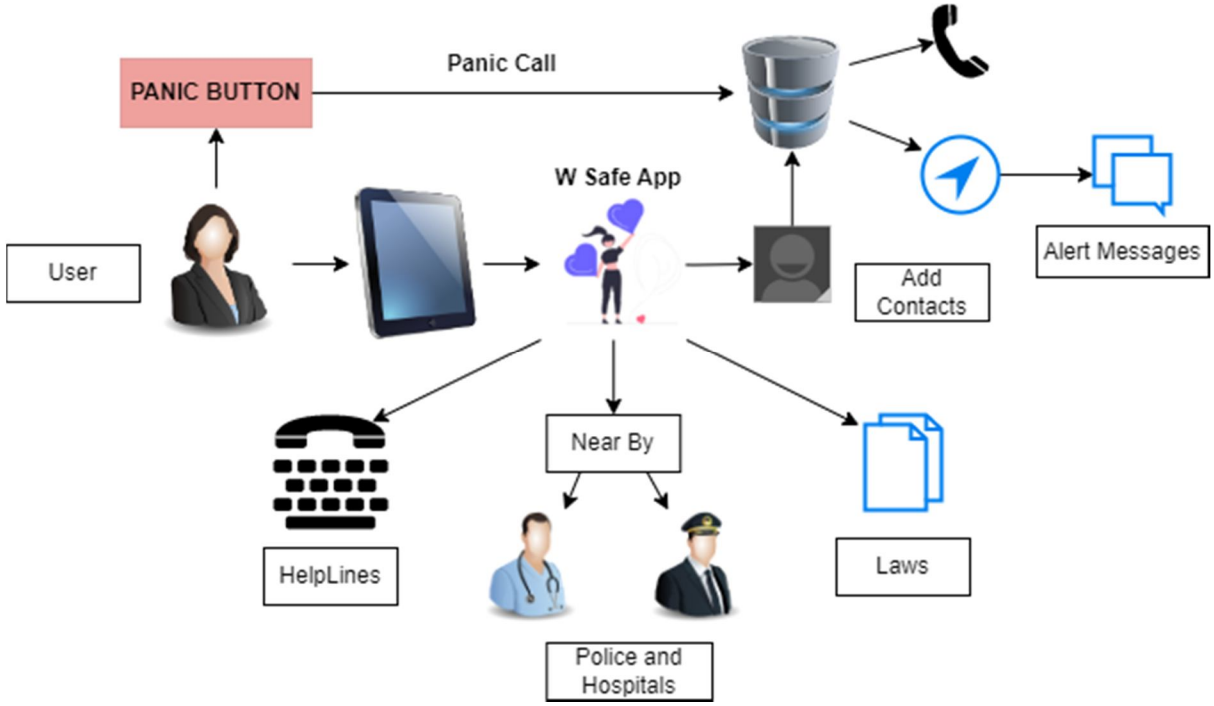

Figure.1 Visual Representation of the application

When a woman triggers an SOS alert wearable device, or an in-vehicle panic button—the system immediately captures essential information such as her unique user ID, real-time GPS location, and the timestamp of the alert. This data is securely transmitted to a backend server over the internet, typically via an API request using HTTPS. Once received, the server processes the data and stores it in a database MongoDB. The stored data includes key details such as the user's location, time of the incident, and alert status, which helps in tracking and managing emergency responses. Simultaneously, the system triggers instant notifications to assigned responders—such as the internal security team, admin, or emergency contacts—through various channels like SMS, email. Some systems also display the alert on a live map dashboard to help responders act quickly. This entire process ensures that the SOS Is not only recorded efficiently but also acted upon in real-time to enhance women's safety.

V. CONCLUSION

At the end of the day, every woman deserves to feel safe, supported, and empowered in every space she occupies—whether it's at home, at work, on the street, or online. Safety is a fundamental right, not a privilege, and it should never be compromised. Our hope is that the resources, tips, and supportive community found here will serve as a source of strength and guidance

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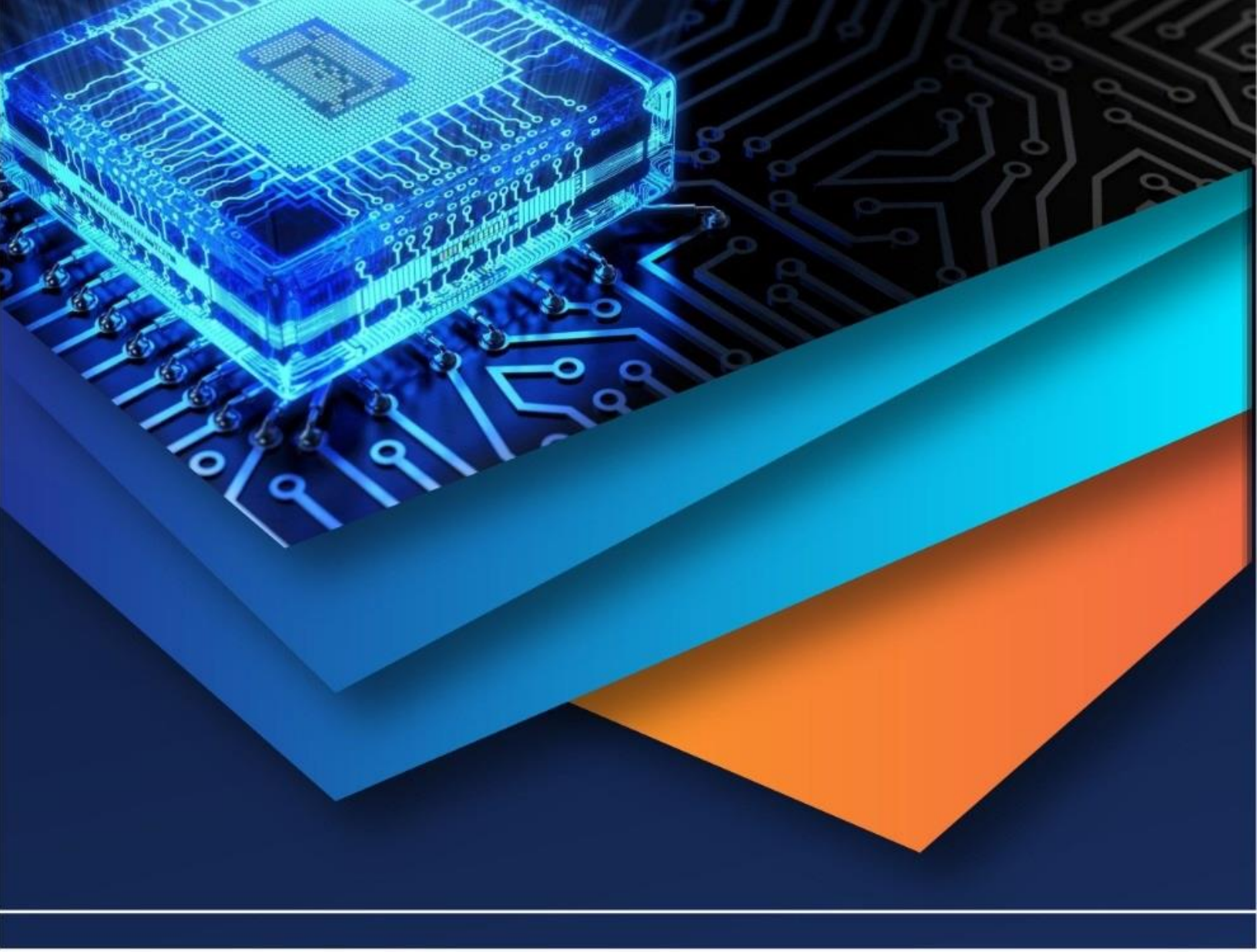

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