Women's Safety Analytics

Arpita Ankush Jagdale[1],Kunjal Pravin Machale[2], Sharaya Sharad Nimbale[3],Pooja Suryakant Satbhai[4],Swati Sunil Waghmare[5], Rukmini Ramakant Pamul[6] , Neeta.S.Alange[7]

[1]Diploma Student, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, arpitajagdale10@gmail.com

[2]Diploma Student, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, kunjalmachale@gmail.com

[3]Diploma Student, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, sharayunimbale694@gmail.com

[4]Diploma Student, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, poojasatbhai716@gmail.com

[5]Diploma Student, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, waghmareswati504@gmail.com

[6]Lecturer, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, rukminipamul123@gmail.com

[7]HOD, Department of Information Technology, Shri Siddheshwar Women's Polytechnic, Solapur, neetaalange@gmail.com

Abstract-

Women's personal security as of now, is a matter of grave concern worldwide, especially in India, being directly influenced by the wrongdoings aimed at women in the age group of elderly to small children-like sexual offenses, rape, harassment, discrimination, and abduction. The ever-increasing sexual humiliation meted out against women in education, work, and public transport in many countries casts a dark shadow upon personal security. Even in a place full of regulations for women's protection, cases are still increasing. Real-time location sharing is a solution for implementing safety in real-time, provided there exists a system for hotspot identification and voice activation. The integration of technology with safety apps and surveillance systems is significant, too, for immediate help and personal safety. Therefore, a women-friendly environment can work as a stepping stone toward greater gender equality and better living standards.

I. Introduction

Under the Women's Safety Analytics the application called as SheSecure is developed.It is an ingenious women's safety app which is designed to provide the real time alets and safety to the female users.It has builted the advanced features like -location tracking,real time alerts,voice activation,law enforcements,safety tips for the women so that they are connected to their emergency contacts and the authorities to take the action in a serious situation within a swipe response.The app also include alerts the alerts for high risk areas ,if the user is detected in the regarding area.

With the features such as hotspot identification, real time alerts, emergency contacts, high risk assistance, she Secure stands out with a great and impactful solution regarding Women's Safety.It hold the pioneering technologies such as React Native, PHP, Cloud Based Services, which provide a seamless response to the users in need.

The chief role of SheSecure is to provide womens an empowerment by enhancing their personal security

along with them, it may reduce the crime, and give an innovative way to increase the response time for the authorities nearby. By offering SAFETY AT EVERY STEP, it gives the user the satisfaction and dignity to walk forward with protection and support in every single situation.

II. Literature Survey

The paper "A Novel Women's Safety Analysis and Monitoring System over Social Media using Machine Learning" gives a deep overview of enhancing women's safety by examine the contents through the techniques of machine learning. The system collects the data from the platforms such as twitter using safety related and text preprocessing to prepare the data. They are then classified into positive, neutral or negative sentiments, it also helps to identify the unsafe situations. The machine learning algorithm like as naïve Bays, SVM, and logistic regression are implemented. It includes data visualization and its features such as graphs, heatmaps to highlight the geographical hotspots. This solution raises the awareness regarding the threats from online discourse. Overall, this paper demonstrates the practical use of machine learning and its algorithms to promote women's safety in the digital era.[1]

In the paper "Challenges of Smart Cities: How Smartphone Apps Can Improve the Safety of Women" explores how emerging technologies, particularly smartphone applications, how they play a role in developing the women's safety in urban areas. The discussion begins with hoe women live in the smart cities, innovation. creativity and population related to women. The author gives a glance for violence against women's, alarming statics on harassment, kidnapping and et. In the cities of world like India, China and Mexico.

The central focus of this paper is on the role of smartphone applications related to the safety alerts and solutions. The study also include Circle Armored, Anai powered safety app developed by the authors, designed to detect human activity ang recognizes distress signals using voice commands and sensors. The app also includes some Machine Learning algorithms to send the alerts, PS coordinates, emergency contacts.[2]

The paper" AI-Enabled Predictive Analytics for Women's Safety: From Threat Detection to Incident Prevention" Propropes AI driven frameworks to enhance the women's safety by taking measures to protect through the threats. The author presents a system called as AI-Driven Women's Safety Framework (AI-WSF) which combines the technique of advanced machine learning and data analysis to identify potential threats to respond quickly.

It includes three main parts: The Anomaly Detection Algorithm to identify unusual or suspicious patterns using Gaussian Mixture Models; the Risk Scoring Algorithm which give the priority for the upcoming risks based on past crimes.

This paper highlights the integration of AI with various data sources, including the social media for safety solutions. The study concludes the predictive measures for the AI and enhances the measures that should be taken to create a safe environment.[3]

III. Methodology

The application followed the regular procedure methodology. It confirms that the application was effective development, more reliable and user friendly and spread the women's safety analytics.

The application was having category like Requirement of system, testing and development of system, designing and final deployment or spread.

1. Requirement of system:

The Existing incident happens because of delay response and absence of real time protection. The aspect like real time location sharing, voice activation, hotspot identification is given more importance.

2.Designing of system:

The application was three tiers

Fronted: React JS, HTML, CSS, JavaScript which more user friendly

Backend: Python for voice activation and emergency alert.

Database (MYSQL): It help to store user information and also other information.

VPS (Virtual Private Server): The VPS server help us for hotspot identification and quick response and cloud storage integration, scalability.

3.Development:

The real time location sharing happen using GPS and also google map Api to find out exact location of user.

Voice activation merge with voice command using command SOS will generate with user emergency contact.

Hotspot identification it most periodized in urban area incident happen before then SOS will generate alert user will dangerously Zone.

4.Testing:

The application was tested in two forms

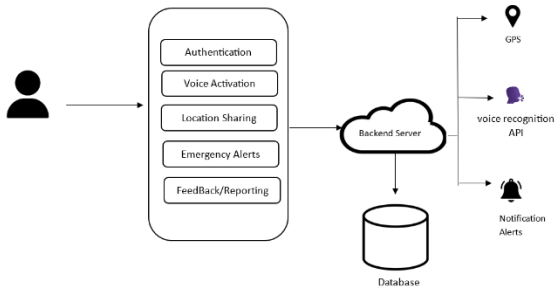
Black Box testing:

During the Black Box testing it confirm that all module is work at functional level with looking internal code and logic.

White box testing:

The white Box testing also indicate that the application was user friendly and verified the all-code structure and security related problem and errors.

IV. System Architecture



The System diagram shows that architecture of the Women's safety App.The system is designed with high real-time responsiveness, user-friendliness, and reliability for rapid response in case of emergencies. The system merges different modules on both client and server ends to provide a secure experience

User Interaction layer (Client App):

At the left of above diagram there is a user and interface to mobile application.

The mobile application contains some more modules where the user interacts during critical condition:

Authentication: This modules states about user authentication. The system authenticates the user through login credentials, allowing only valid users to use the system's capabilities

Voice Activation: Enables the user to activate emergency functions using voice commands i.e., in situation where the user cannot manually interact with phone interface.

Location Sharing: Forwards real time location of user to emergency contacts to facilitate and early rescue

Emergency Alerts: forwards the user a notification to preestablished contacts and backed system immediately in case of emergencies

Feedback/Reporting: Enables users to report accidents and provides recommendations, which assist in enhancing safety coverage and app performance

Backend Server:

The backend server is the central processing unit with which the client communicates

It authenticates and securely stores user information in Database.

It integrates with a voice Recognition API to process voice commands.

It processes GPS information and forwards it to concerned parties.

It Notifies authorities or emergency contacts of notification alerts.

External Services

Three essential external services are integrated with the backend:

For real time location tracking use a GPS module.

To interpret voice commands, use the Voice Recognition API

Notification Alert System that promptly broadcast emergency messages.

V. *Impacts of the Women's Safety*

Empowers Women-

The system aims to empower women to take more control of their own safety. The app has features, like voice-activated alerts, GPS-based location tracking, and easy access to emergency services, that allow users to react quickly in threatening situations. As they move through public space, women can be more confident, knowing they have a tool to increase their safety.

Reduces Crime-

Real-time alerts and location sharing act as a disincentive to potential offenders. The likelihood to offend, in the case of harassment, stalking, or assault, declines when a potential offender is aware that a woman has the ability to alert authorities and share her location in real-time. Reporting the incident will also allow for a data driven approach to identifying high-crime areas to better help law enforcement respond to incidents.

Enhances Emergency Response-

The GPS and backend integration makes sure that the emergency alerts find the correct responders in a timely manner. With the removal of communication delays and the automation of location identification, the system enhances the speed and precision of emergency response. This can be important in saving lives and avoiding harm during critical periods

Reliable-

Though safe authentication, encryption of data handling and solid infrastructure, the system establishes user trust. Users can trust the app to execute in real-time without exposing their personal data.

Sense of security-

The greatest impact, perhaps is the psychological reassurance that it brings. Feeling that there's a protective mechanism in place for help when need alleviates stress and anxiety. Whether traveling alone to work or heading out in unknown area, individual is become less apprehensive, and the enhances their quality of life and liberty of movement

VI. Conclusion

Our application provides reliable solution due to concern of women's safety. With the key aspect of real time location sharing, voice activation, hotspot identification, it covers the gap between emergency need in timely manner. Application integrates with VPS cloud server provided laws enforcement make technology helpful social life. The user interface system allows easy interact with system, backend service are guarantees speed, security, scalable and reliable. The goal of this application make step forward for women's safety and safe society.

VII. References

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