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Women's Safety and Security App Using Android Application

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ABSTRACT: To mobilize different groups for regular cause, women are good at it. Often times, they work across race, religion, ideology and intellect, to promote peace. The significance of women's security is understood but we should see that they get highly concealed. Women are not strong physically compared to men; in times of crisis, they would need someone to lend them a hand. Many ill-fated incidents have been happening with regard to women. There could be troubles from any direction such as ladies going alone on the road after their jobs or going shopping in the supermarket among many other reasons which force them to go alone outside the house. It is not certain if they will come back safely home for those who remain behind her at home. Also, another reason why woman dies without knowing is because she participates in trips and excursions offered by companies without knowledge of what causes it and how it happens, though it's not suicide but attacks on ladies. As Android users grow rapidly and internet becomes cheaper, we can provide a simple medium for creating safety awareness among young working and professional women. Women Safety Application may guide you about exact location of the lady who needs assistance through her precise place along with various other locations where she might be found by her loved ones or friends for aid in emergency case numbers.

KEYWORDS: Women's Safety, Emergency Alert, SOS, Panic Button, Location Tracking, Self Defense, Personal Security, Trusted Contacts,

I. INTRODUCTION

Women's safety has been the most sought-after topic in the minds of many because of which it deserves utmost attention. Women safety is the issue which should greatly concern be, be it at home, outside the home or the work place. There is few crimes against by ladies especially, rapes was a very serious and fearful matter. Women, of all ages, are forced into this death-trap in which they are exposed to violence, domestic abuse, and sexual harassment. Many of whose pain is forgotten when compared to men's complaints. It should be remembered that in a majority of times, night time is the time when ladies should travel. For this reason, it's better to be vigilant and safe. Although government is doing important work to protect women, there are also apps available for women to help them stay safe that are not prohibited. To most females these days it is an almost necessity to have their cell phone with them, thus the basic safety application needs to be the first one to get installed. This security app for women will either assist in doing it or will help us to a certain extent. The interface is very to use making to even those who do not understand the scientific behind the fitness app to interact with it effectively as it is in their phones. We strive to you the easiest and quickest channel to connect to your local aid. At this mode, user is required to feed in the contacts for emergency need the same can be sent SMS and also can call on the one of the numbers fetched into the system. After a distinguished tone has sounded, the phone starts ringing and I hear the siren. This offers an example for the everyday safety and, thus concisely, it is a necessary tool for all [1].

II. RELATED WORK

Creating a women's security and safety app for Android involves various components and considerations, including features, user interface design, backend infrastructure, and more. Here's a breakdown of related work for such an app:

1. Research and Analysis- Conduct extensive research on existing women's safety apps to understand their features, strengths and weaknesses. Analyze user feedback and reviews of these apps to find common pain points and areas for improvement.
2. Identification of features- Identify key features of the application, such as integration of emergency contacts, GPS tracking, panic button, safety tips, self-defence tips and community support.
3. User Interface Design- Create an intuitive and user-friendly user interface, taking into account target preferences and accessibility features. Create frameworks and prototypes to visualize application layout and interaction prior to development.

4. Technical Development- Develop a robust back-end infrastructure to support features such as real-time location tracking, notification delivery and secure data storage. Use Android development tools and libraries to ensure compatibility with multiple devices. and Android versions.
5. Security Mechanisms- Implement encryption protocols to protect user data and communication within the application. Integrate features such as "Security Zones", where users can set trusted locations or contact information for increased security.
6. Community Engagement- Include social features such as a forum or chat to facilitate community support and collaboration between users. Implement reporting mechanisms that allow users to report inappropriate application or behavior.
7. Testing and iteration- Conduct extensive testing, including functionality, usability, and security testing, to identify and resolve issues. Collect feedback from beta testers and iterate the app based on their feedback and bug reports.
8. Publishing and Promotion- Plan a comprehensive publishing strategy including in-app store optimization (ASO), press releases and social media promotion to maximize exposure and downloads. Work with relevant organizations and influencers to promote the safety of women space to enhance the reach and impact of the application.
9. Continuous Improvement- Update the application regularly based on user feedback, technological developments and changes to security policies or best practices. Monitor application performance and user engagement metrics to identify areas to optimize and improve over time.

III. PROPOSED ALGORITHM

The process of the women's safety project starts with thorough research and analysis of current programs, crime statistics, and social factors that impact safety worries. Engagement with stakeholders including women's rights groups, law enforcement, community figures, and government representatives is next to collect feedback and viewpoints. An essential step is conducting a needs evaluation by surveying, interviewing, and holding discussions with women from various backgrounds to pinpoint exact safety requirements and worries. This information is used to create personalized interventions.

IV. PSEUDO CODE

Step 1: - Start the application:

- a. Request necessary permissions (eg location, contacts, text messages).
- b. Define UI components (eg buttons, text fields).

Step 2: - Main function:

- c. Display options for various functions:
 - i. Panic button
 - ii. Location tracking
 - iii. Emergency contact details
 - iv. Safety tips
 - v. Settings

Step 3: - Panic Button:

- d. The user presses the panic button.
- e. The application sends an emergency signal to predefined emergency contacts.
- f. The application will start recording audio and video.
- g. The application sends location updates at regular intervals.
- h. The application informs the user about the actions taken.

Step 4: - Local Tracking:

- i. Save the user's location in the background.
- j. Show the current location on the map in the application.
- k. Provide options to share location with emergency contacts.

Step 5: - Emergency contacts:

- a. Allow users to add, edit or delete emergency contacts.
- b. Provide options to select contacts to receive emergency alerts.
- c. Show emergency contacts in the app.

Step 6: - Safety Tips:

- a. Show safety tips and instructions for different situations.
- b. Include information about self-defense techniques, emergency numbers, etc.

Step 7: - Settings:

- a. Allow users to change application settings:
 - i. Notification Settings
- I
 - i. GPS Accuracy
 - iii. Audio recording settings.

Step 8: - Responding to a distress signal:

- l. Emergency contacts receive a distress signal indicating the user's location.
- m. Contacts can call the user, contact emergency services or take other appropriate actions.

Step 9: - End of crisis:

- n. The user reports that the crisis is over.
- o. The application stops recording audio and video.
- p. The update status of the application indicates that the user is safe.

Step 10: - License Management:

- q. Ensure correct use of access rights of location, contact information, SMS, etc.
- r. Prompts the user to grant the necessary access rights if not already granted.

Step 11: - Error handling:

- a. Handle errors gracefully (eg network connectivity issues, GPS not available).
- b. Provide informative error messages to the user.

Step 12: - Testing and Debugging: -

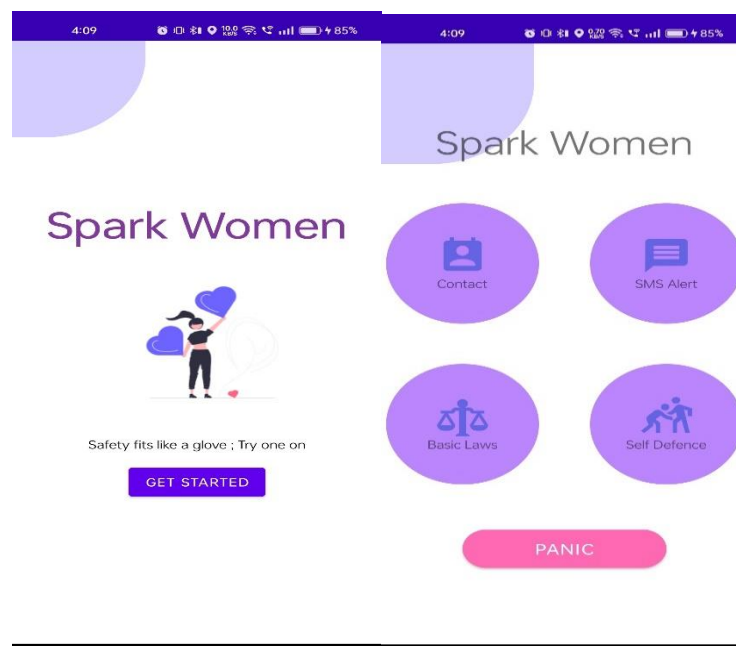
- a. Test the app thoroughly on different devices and Android versions.
- b. Fix problems found during testing.
- c. Ensure the stability and reliability of the application.

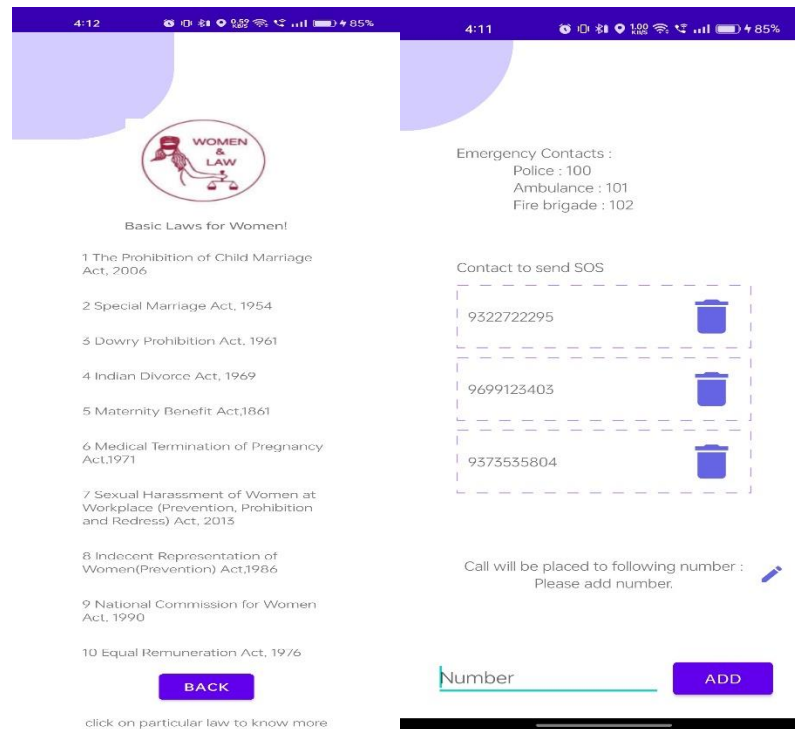
Step 13: - Development:

- a. Publish the app to the Google Play Store.
- b. Promote the app through various channels to reach potential users.

V. SIMULATION RESULTS

The impact of a women's safety initiative can be seen through different lenses. Initially, there may be a visible decline in the reported cases of harassment, assault, and violence against women in the designated regions. This drop would signal that the interventions put in place are successfully tackling the problem. Additionally, there would be a rise in awareness among women regarding safety measures, support services, and legal protections. This uptick could be gauged through surveys, interviews, and input from participants in awareness-raising events and workshops.





VI. CONCLUSION AND FUTURE WORK

Thus, our Women's Safety And Security App is an ideal source of security to society members, especially to women who want to work on long-term programs. All those men are deterred to do any crimes against women beforehand; therefore, it makes the incidences of the crimes against women to be reduced.

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"SECURITY SYSTEM" does not does not invalidate. Rather, it adds another dimension to the representation of data which give forecasts more precision and accuracy, hence, leading to improvement in decision-making.
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Smart traffic usage increases the decrease risk of accidents resulting in information sharing systems hence, the need for cybersceutics are evolving.
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