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Women Security Application Using Android

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Abstract: The safety of women remains a critical concern worldwide, with incidents of violence and harassment persisting despite societal advancements. This research paper outlines the design and implementation of a mobile application aimed at enhancing women's security using Android Studio. The application incorporates features such as emergency alerts, location tracking, and community support systems, providing a comprehensive tool for personal safety.

I. INTRODUCTION

A wide range of tracking systems has been developed so far tracking vehicles and displaying their position on a map, but none of the applications has been developed so far which tracks the mobility of a human being. Now a day's tracking a person's mobility has become a crucial issue these days, system which is cost effective and can be used for tracking a human being using a GPS and GPRS equipped mobile phone rather than using a handheld GPS receiver. "The main focus of our project is to reduce the overall cost of tracking based on GPS system which is a satellite-based service which is available 24X7 everywhere in the whole world. GPS system can be used to get location which includes details like latitude, longitude and altitude values along with the timestamp details etc. it a free of cost service available to every individual. In order to track the movement of the person we have used Google Maps for mapping the location sent by the mobile phone. The mobile phone which fetches the GPS location communicates with the server using General Packet Radio Service (GPRS). This service is a low-cost service provided by the service providers which is a wireless data communication system. Mobile phones equipped with GPS receiver are easily available in the market these days and is a booming technology these days. This cell phone technology has enabled us to communicate almost every part of the world across the boundaries. The GSM/GPRS is one of the best and cheapest modes of communication present these days and in future. We are all aware of importance of women's safety, but we must realize that they should be properly protected. Women's are not as physically strong as men. In an emergency situation a helping hand would be a relief for them. The best way to minimize your chances of becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to identify and call on resources to help you out of dangerous situations. Whether you're in immediate trouble or get separated from friends during a night out and don't know how to get home, having these apps on your phone can reduce your risk and bring assistance when you need it. Here we introduce an app which ensures the safety of women. This helps to identify and call on resources to help the one out of dangerous situations. These reduce risk and bring assistance when we need it and help us to identify the location of the one in danger. This app designed to provide security to women main purpose of this app to provide the awareness on the time of critical situation for women. Generally, you can active this service by clicking on SAVE ME. To do so, you just need to open the app whenever you feel you are in danger and just need to click save me button available in the dashboard. When you click on this button, it opens a new pop-up screen which asks your confirmation and send SMS to those contact which you saved at the time of registration the SMS contain your message and your current location. This app helps you to know about your family, whether they are safe or in trouble.

II.METHODOLOGY

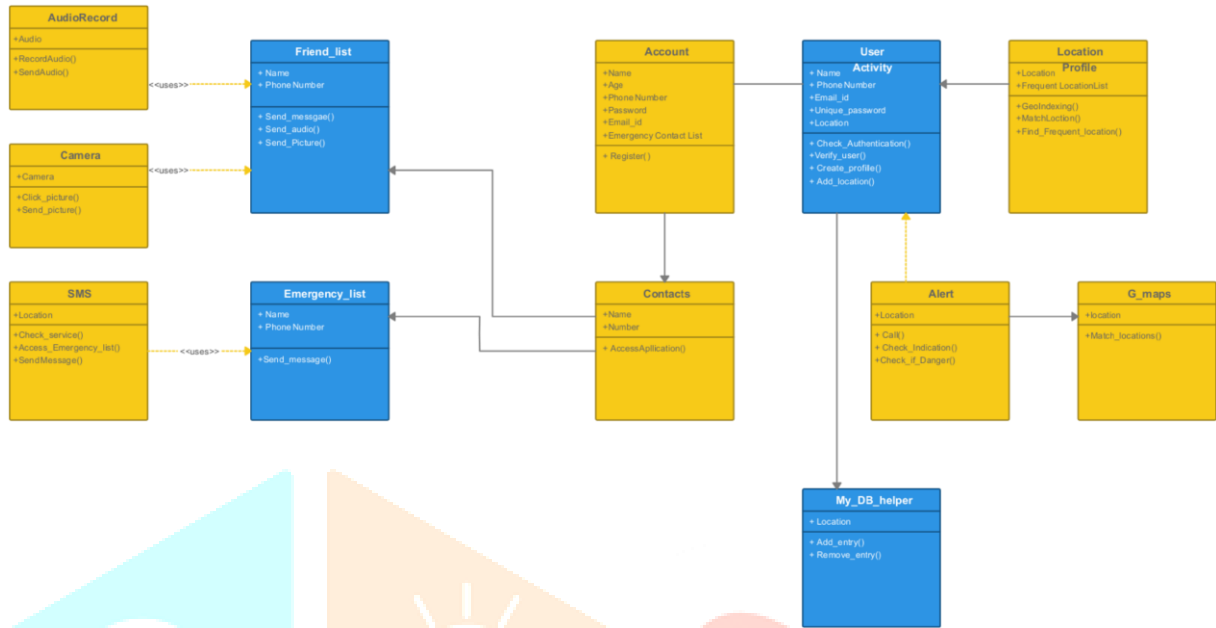
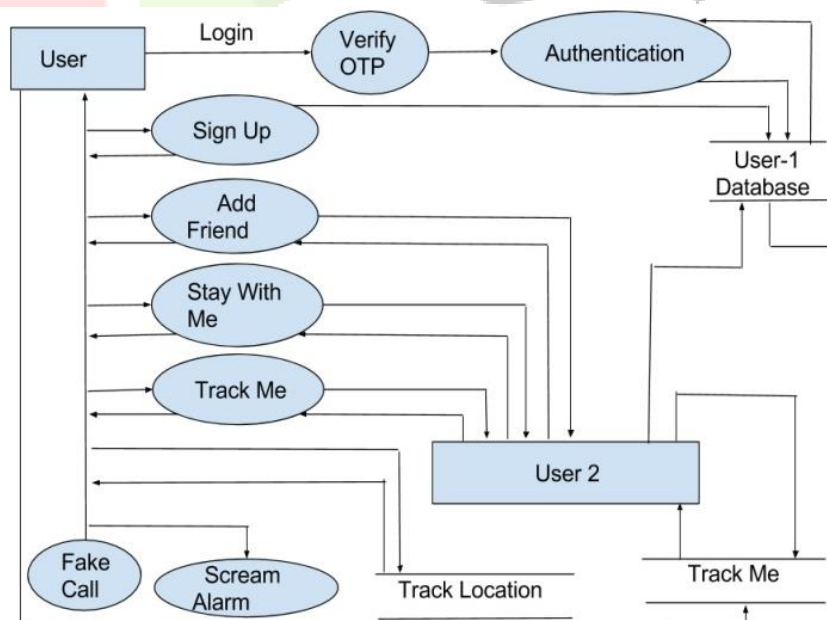


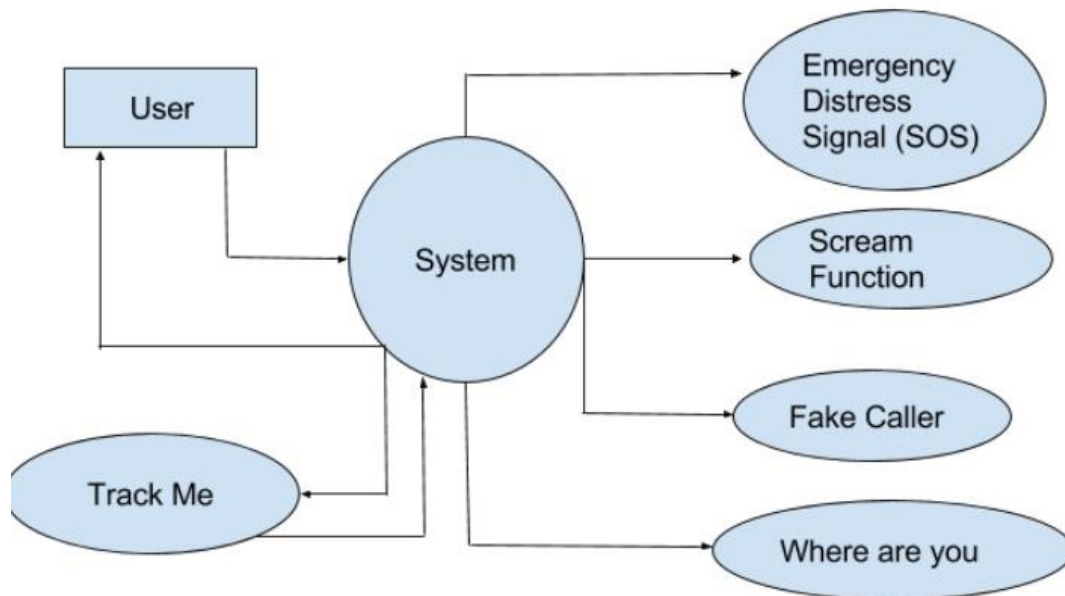
Figure 1: Block diagram showing the working principle of a hybrid power control system. The application was designed with a user-centered approach, focusing on simplicity and ease of use. The key features identified were:

1. **Emergency Alerts:** A one-tap button to send alerts to emergency contacts.
2. **Location Tracking:** Real-time GPS tracking to share location with trusted contacts.
3. **Community Support:** A platform for users to connect and support each other.
4. **Resource Information:** Access to local resources such as shelters, helplines, and legal assistance.

3.2. Development Tools

The application was developed using Android Studio, utilizing Java and XML for programming and layout design, respectively. Firebase was integrated for real-time database management and user authentication.





III.PERFORMANCE EVALUATION

User Interface

The user interface (UI) was designed to be intuitive, ensuring that users can easily navigate through features. The design was tested through iterative feedback sessions with potential users.

4.2. Coding and Testing

The application was coded following best practices in Android development. Comprehensive testing, including unit tests and user acceptance testing, ensured the application was robust and reliable.

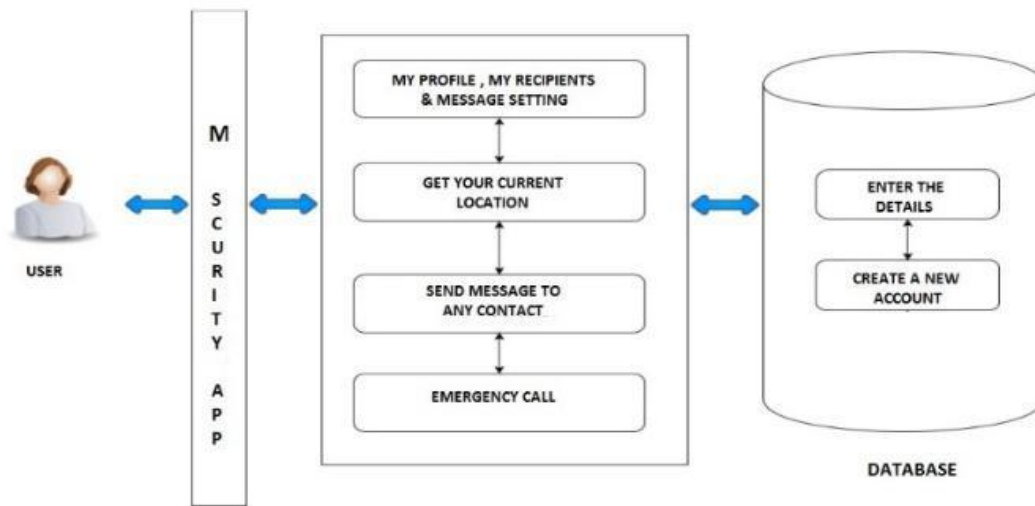
5. Results

5.1. User Feedback

Initial testing with a group of 50 women revealed positive feedback regarding the application's ease of use and effectiveness. Users appreciated the emergency alert feature and the ability to share their location with trusted contacts.

5.2. Challenges Encountered

During development, challenges such as ensuring data privacy and creating a reliable GPS tracking system were encountered. Implementing robust encryption for user data was crucial in addressing privacy concerns.



IV. CONCLUSION

The development of a women security application using Android Studio showcases a proactive approach to enhancing personal safety through technology. As society continues to address the challenges of violence against women, such applications can play a crucial role in providing support and resources. Future work will focus on expanding the application's capabilities and fostering a larger community of users.

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