



Women's Safety Application

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Abstract: Currently we are staying in the worst possible time in today's day and age the society has ever seen in terms of our women's security. The main aim of the following Project is basically building an effective, very fast and a reliable system to make the women of India feel safe and also empowered. The app we made will act as a very helpful companion for the women, so they don't ever feel that they are standing alone in the middle of any crisis or situation. This application is very user-friendly application Which can be used by anyone who has installed the application in their respective smart phones. Our aim is to provide you with the fast and simple way to contact your loved ones or family with just a click of a button or by shaking your device. The idea is to reduce the time or make up the time it takes to arrive at the location.

Keywords: React Native, Cross platform, Android Application, Women Safety

1. INTRODUCTION

Even Though our government has taken various steps, the crime rate against women is not reducing. It is growing every day at an alarming rate. Eve teasing, molestation, rape, harassment, domestic violence, abduction is now becoming a part of everyone's daily life. So many women safety applications have been made to handle this particular emergency situation. Here we are showing you an android application that will ensure women's safety and will minimize the danger by identifying the position of the person who is at risk.

We are most probably living in the worst possible time our modern society has ever seen in terms of women security. The main aim of this project is basically on building an effective, fast and very reliable system to make the women of our country feel very safe and very empowered.

This app will act as an active help and companion for the women so that they don't feel that they are alone in any type of emergency or crisis situation. This is a very user-friendly app that can easily be accessed by anyone who has installed it in their devices or smartphones. Our aim is to provide you with the fastest and simplest way to contact your nearest help that is friends family etc.

This system will be able to geotag and send alert sms to your close contacts and alert the people in and also around the venue of the crime or during an emergency, everything with just by shaking your device. The basic idea of the app is to make up for the time that it takes for the help to arrive at the location where the incident happened.

The rest of this paper is as follows. Section 2 will present the related work. In Section 3, the proposed methodology of the system is shown, and the system design is presented by diagrams. Section 4 will briefly provide the results and uniqueness of our system. Finally, Section 5 presents a comparison table with some existing systems and section 6 presents this paper's conclusion and future work.

2. RELATED WORK

It is a very unfortunate or sad observation that there has been a shocking increase in the crimes against women. Total of 2,382 rape cases were registered during the year 2021, which shows how important it is to do something immediately to decrease it. We have gained some knowledge regarding this purpose and studied various papers which are related to this particular project.

There is an app which is called "Raksha-women safety". This app has been made for women's safety so that a woman will always feel safe no matter what. It sends alert messages with location to the specified closed contacts be it family, friends or any loved ones.

Let us talk about another app named "I Go Safely". How it works is that this application sends a 30 second audio recording and video clip to the registered contacts along with an emergency message. The app is activated if the user drops the phone. But If anyone shakes the phone mistakenly it will also start working which can make unnecessary problems. Similarly there is another app named "Shake to Alert".

One more example of an application named "Safety pin". The application has various features like emergency contact numbers, GPS Tracking. At the time of danger, the app pins the safe areas with their respective security scores to go. "Abhaya" is also another android app for the safety of women. It will identify the location of the site via GPS and then will send SMS and e-mail to the registered contacts and mail or number that includes the location to assist the one in



dangerous situations. This app's unique feature is to send messages to the registered contacts for every 5 minutes until the stop button in the application is pressed. Continuous SMS location tracking helps to find the victim's location quick and to rescue them safely.

After studying various papers including the apps that are mentioned above, we came to the fact that, though there are various applications which serve the same purpose as ours, they lack some features. For example, our app is a cross platform app, that is we can use it on both android and iOS unlike many other apps. We also have used google smtp authentication for authentication.

3.PROPOSED SYSTEM

Our system is designed in such a way that it will be unique from other existing apps by integrating all the features offered by those. The user needs to first sign in with his/her google account for authentication and registration.

Every time the user uses this application, she needs to sign in with her google account for authenticity. After signing in from her google account. The user will get various options like videos, send email, edit contacts, and emergency messages. The videos option will take you to the self defense videos library , where you can see all the self defense videos which we have added ,in which we have taken some YouTube videos links , we play them using the YouTube player flutter plugin.

The next option you see is send email , in this option you have to add your email id on which the emergency message along with the location will be sent .For Sending emails to the family or selected contacts we have used a packaged names mailer.

The next option that you will get is edit contacts , in which you have to add your contact information to the contact on which your location along with the emergency message on WhatsApp application. Here you can add multiple contacts and also edit them.

For local storage we have used hive, for the UI we have used flutter, for getting the location of the user we have used geo locator. In the backend we have used firebase.

User has to shake her phone , then the mail along with a message and the live location of the user will be sent to her email and the respective WhatsApp number.

The family or the contacts can then send help or reach the location for helping the user in danger .

A use case model and a flowchart diagram of the proposed system is given below which will make it easy to understand all the working methodology of our system

A. Use-Case Model of the Proposed System

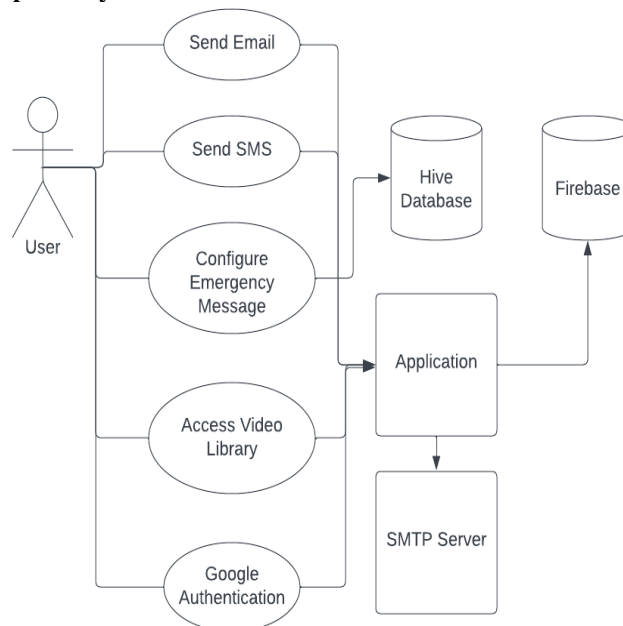


Fig1.Use-case Model

Figure 1 represents the use case model of our system “Women’s safety android application” where the user has access to Login / register google login, configure emergency contacts , add / remove emergency contact and self-defense YouTube video library.



B. System Flowchart

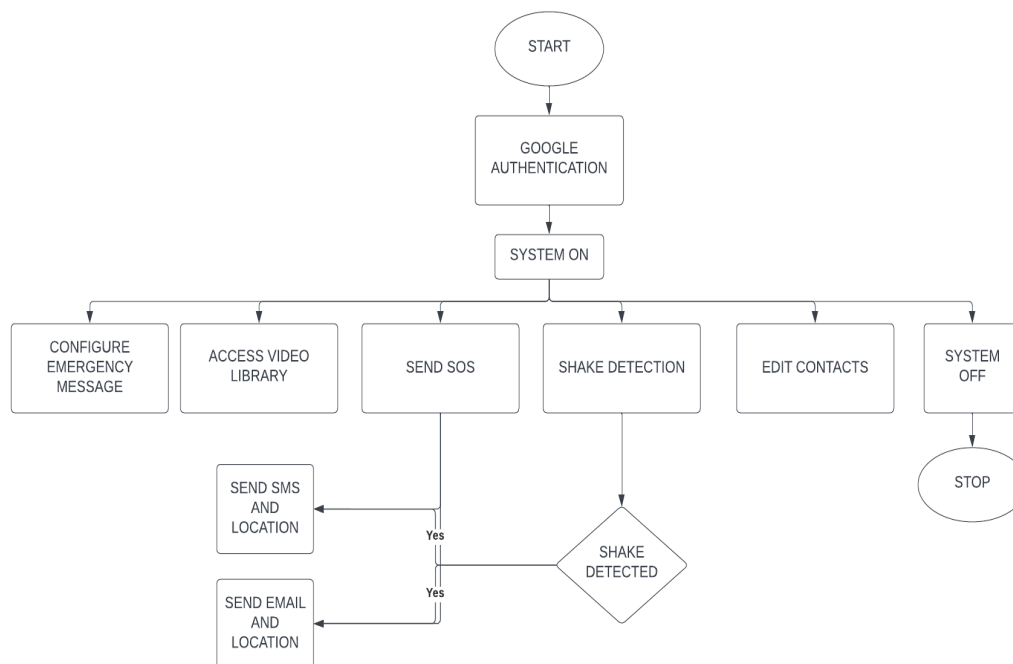


Fig 2: Flow-Chart of the proposed system

Figure 2 represents the system flow chart. After authentication, the system is turned on, then it will start working in the background, the user can then configure the emergency message, edit the emergency contacts, access the video library or send a SOS message via a button provided on the home screen or via shake detection. This shake detection also works in the background or when the device screen is off. The SOS message is sent to all the emergency contacts via email and SMS messages. After sending the message the details are also uploaded to firebase.

4.RESULT & UNIQUENESS

Our application is very helpful in emergency situations and also unique from other applications in various aspects or features.

A. Uniqueness

We have mentioned many android applications in the related work part having similar functions to our application. But in our application, we have some unique features which makes it different from other existing systems.

They are:

- Video Library: There are video library in which multiple self defense videos are present and that will help the user in understanding how one can protect themselves using these techniques in case of emergency,
- firebase data collection: The application also stores the data of SOS requests to firebase with location to allow analytics to be performed on said data and find out locations with high concentration of crime. This data can also be used to create a dashboard which can be used to help the person in crisis.
- No registration required: The user does not need to register unlike other applications they just need to authenticate themselves using the google authentication with the help of their gmail account.
- Cross Platform: This app is a cross platform app that means unlike various app that can be used only in android or only in IOS devices this app can't run on both android as well as IOS devices.

B. Result

Here are some of the screenshots of the design of our proposed system by which our system can be more understandable.

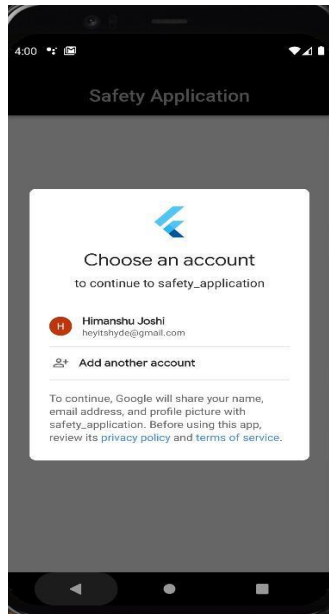


Fig 3: Google Authentication

Figure 2 represents the google authentication when the user opens the app for the first time, he/she needs to authenticate themselves with their google account.

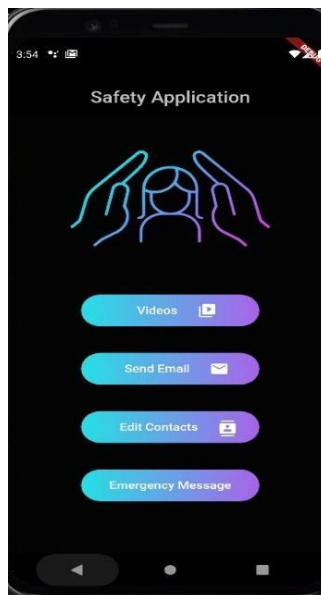


Fig 3: UI Screenshot

Figure 3 represents the screenshot of the UI



Fig 4: Self Defense Videos

Figure 4 represents the list of self defense videos to the user

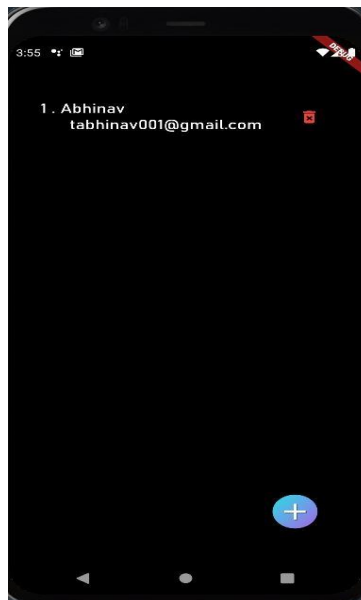


Fig 5: Edit Contacts Page

Figure 5 represents the edit contacts page to add or edit your email.

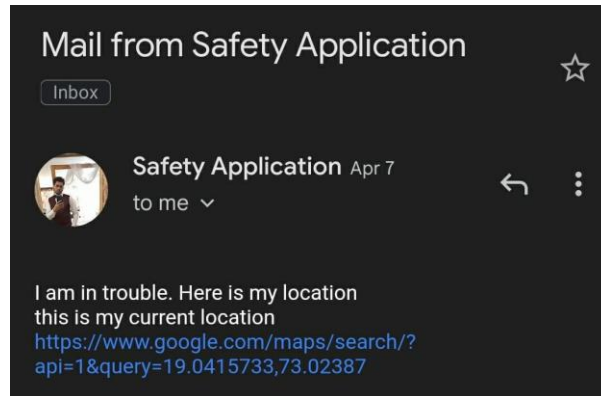


Fig 5: Mail from App

Figure 5 represents the mail that the user's added emergency contacts will receive.

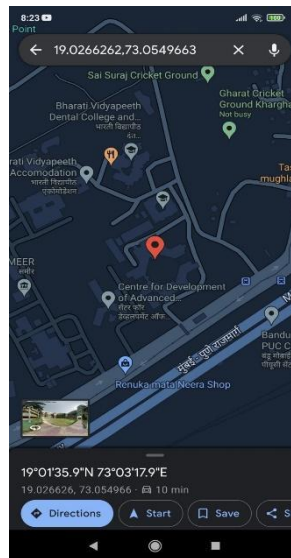


Fig 6: User Location

Figure 6 represents the user's location that their closed or emergency contact will receive once the user hit the send email button.

5.CONCLUSION & FUTURE SCOPE

With the help of this project, we will be able to create a platform for the citizens of India to add a precautionary step to their arsenal of self-preservation that might prove helpful in aiding them through a crisis or save them from being a victim to attempts of harm.

We also have been able to log the data and create a database where the information of the SOS requests of the application are stored which can then be used for various purposes. One of these is an analytics database to visualize where crimes against people are concentrated or in greater quantity and to send such data to the respective authorities.

Overall, this application will prove to be a great help to those in need as well as their loved ones who can receive alerts in case of an emergency which can be used to take action as needed.

In the future we can also implement Whatsapp messaging within the application as we obtain the necessary API access. The design of the application allows for easy modification to the codebase and smooth deployment as and when required. This will allow us to improve the application with time using the latest technologies and updates to the pre-existing technology.

With the data that is being collected with the application we can create a public dashboard which will display the people who are broadcasting emergency signals thus increasing the chance of them receiving help.



We can also use the same database for analytics and showing places where the amount of emergency messages being sent are high thus marking it as a dangerous zone on a map or dashboard for the public to see or as a visual analytical tool for the purposes of demonstration

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