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An Android Application Based on Women Safety

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Abstract - *Nowadays, women safety is the key priority, especially for the police forces in India. This has been a matter of utmost concern and has been in talks for many years now. Even after all the overlooking, not much has been done for the safety of women, rather than just talking about it. As they say, "it's easier said than done", holds good for this as well. As most of the women carry phones with them nowadays, a women safety app would be a more efficient and quickest way, for a woman to reach out for help in case of an emergency. An app that has a single button that performs all the emergency functions at once would be ideal. In addition to that, the basic features such as local emergency contacts would be necessary in case of emergency.*

Key Words*: *Women Safety, Safety app, Efficient and quickest way, Emergency functions, Emergency contacts.

1. INTRODUCTION

Women safety has become an increasingly highlighted issue in India over the previous couple of years. Several incidents have received considerable media attention and become the topic of intense debate among politicians, police and civil society. The number of reported rape cases have jumped by almost 26% in 2013 and it is the highest in the last 15 years. This is not only for rape cases but also for all crimes against women, which also increased by 26% in 2016[1]. There are however numerous incidents that haven't been noticed or reported, partly because women became so familiar with them. These include frequent occurrences of eve teasing. There are many that would argue that the difficulty of women safety is over-hyped and exaggerated, creating an impact that India is that the worst place on earth for ladies. However, rather than merely examining statistics, which is what discourse on women safety often gets limited to, we believe it's more important to understand that ladies got to be able to live their lives without a feeling of unease. Also, nowadays everyone owns a mobile. With the reduction within the internet access prices, majority of them have and use internet on a day to day basis. It's now become much easier and quicker to deliver safety and security services to women digitally, with the evolution of the mobile phones and therefore the internet. "With this service, women can confidently walk the streets of India."

1.1 S O S

SOS[2] is a distress signal, used internationally, that was originally established for maritime use. In International Morse three dots form the letter "S" and three dashes make the letter "O", so "S O S" became a standard. Although SOS officially is just a distinctive Morse code sequence that is not an abbreviation for anything, in popular usage it is associated with phrases such as "Save Our Souls" and "Save Our Ship". Moreover, thanks to its high-profile use in emergencies, the phrase "SOS" has entered general usage to informally indicate a crisis or the necessity for action.

1.2 Cloud Computing

Could computing[3] is the delivery of IT resources such as IT infrastructure, computing power and various applications over the internet with pay-as-you-go pricing. All of this is done through a cloud service platform. Since there is no need to maintain hardware or software capacities, it will increase the system and computing speed and the overall agility as well as flexibility. This also reduces the need for hardware maintenance that would be required overtime. Nowadays most of the applications and computing is based on cloud.

2. EXISTING SYSTEMS

There are some existing apps out there that provide some of the functions like our app. But the unique feature of our app is that the SOS Buttons triggers four functions at once which other apps' features don't. Here are a few existing systems below.

2.1 Eyewatch SOS for Women

Eyewatch SOS is an app that records the user's surrounding audio and video and sends it to the registered contacts along with an alert message. The high accuracy of the location and functioning without GPRS are some of the advantages of the app[4].

2.2 iGoSafely

iGoSafely is an app that, upon activation, sends alert messages along with email and location to the emergency personal contacts. It keeps sending messages every minute unless it's turned off using a disarm code and also sends a 30 second audio recording[5].

2.3 Smart 24x7

Smart 24x7 is an app that calls the police upon pressing the trigger button. There is also a feature of calling pre-designated contacts too. The location is sent via SMS if the GPRS is not functioning[6].

3. METHODOLOGY

Safety apps are the most essential apps during the time of a crisis or emergency. Such an app should be designed in such a way that it is extremely user-friendly and have minimalistic design. The fact that it has to be user-friendly is very essential because it helps during the time of emergency, where the user can easily find the right functions under panic situations.

3.1 Login/Signup

This initial stage is the Registration and Login process. A new user can sign-up in the 'SIGNUP' tab and once signed up, the user's Name, Email ID and Gender will be stored in the cloud using Firebase. Then, a verification email will be sent to verify the user. After successful Registration, the user enters their personal information such as Name, Contact number, Address in the 'Profile' page. This creates a basic user profile in the app.

3.2 Profile

This is the page where the user enters their personal information such as Name, Contact number, Address. The user also has the option to create customized messages for each of the three buttons (SOS, SAFE & Caution). Finally, the user can provide three personal contact numbers to whom the SMS will be sent on the press of the buttons.

3.3 SOS Button

The app prompts for enabling the location of the device after every successful login into the app. This is to fetch the location constantly in need. Once the SOS button is pressed, the SOS function is activated and a call to the Police(100) is connected. The location is fetched from the device and is sent to the emergency contacts along with a customized message provided by the user in the app. In addition to this, the app will sound an Alarm tone and light flashes in a SOS pattern using the device's flashlight.

3.4 SAFE Button

The SAFE button, once pressed sends a customized message along with the location by SMS to the personal contacts provided, and stops the alarm and flashlight functions as well.

3.5 CAUTION Button

The CAUTION button on the other hand just sends a customized message along with the location to the personal contacts by SMS.

3.6 MORE Button

The MORE button directs the user to another page where the user will be presented with additional features such as Emergency Numbers, Video Links, Weight Analysis and CPR Measures.

4. SYSTEM ARCHITECTURE

The architecture used in this app is fairly a simple one. It starts off by the user entering the login credentials and logging into the app. From here, it takes shape when the buttons are pressed. When the SOS button is pressed, the four functions are activated, i.e., the call, SMS, alarm and flash. These functions are done simultaneously except for the alarm function. Since the call function is given a higher priority and the phone can't play any audio during a call, the alarm will start playing after the call is hung up.

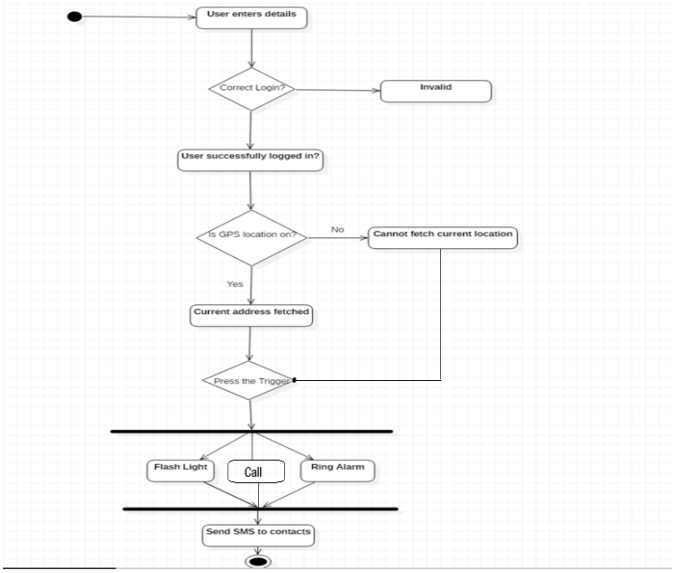

Fig -1: Flowchart of System Architecture

5. RESULTS

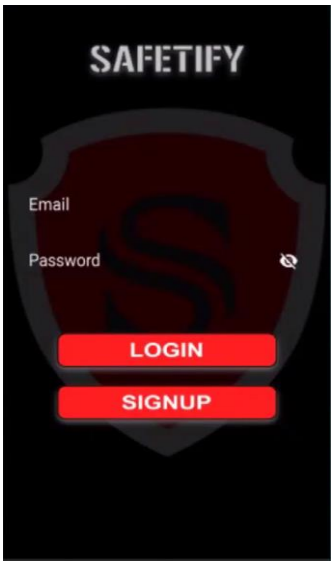

Fig -2: Login Screen

Fig -3: Sign-Up Screen

Fig-2 shows the Login Screen. This screen is used by the user to enter the provided login credentials and login into the app. Fig-3 shows the Sign-Up screen. This is the screen that the user initially accesses to enter their credentials and create an account with the app.

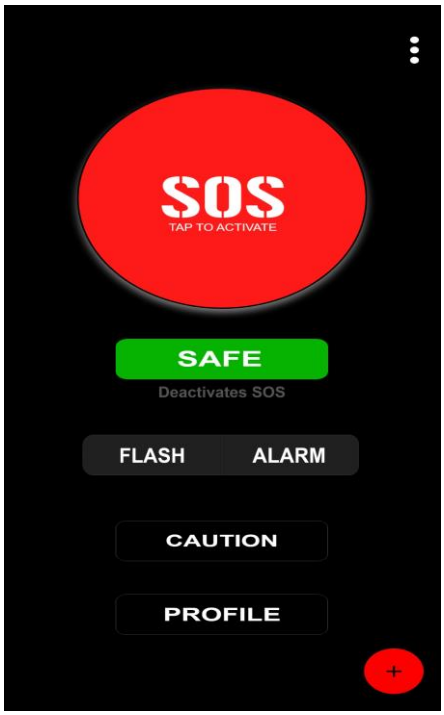

Fig -4: Home Screen

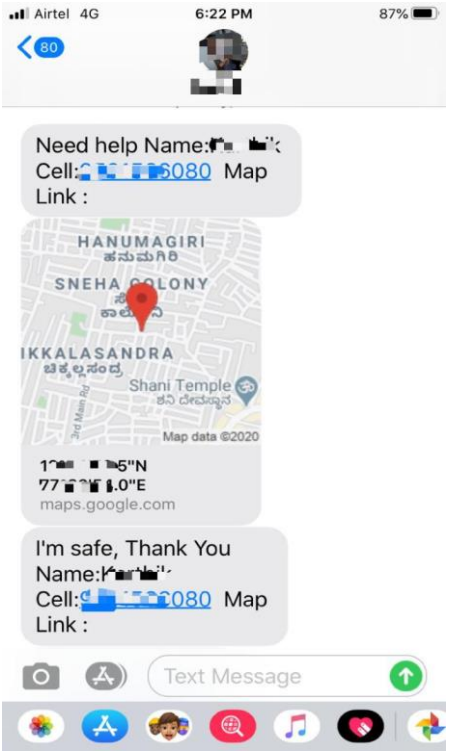

Fig -5: SMS with location

In Fig-5, the SMS is received by the personal contacts. The SMS contains a personalized text along with the sender's name, contact number and the location.

6. CONCLUSIONS

This is an app that is user friendly and innovative. The fact that it performs many different functions at the same time is what it brings to the table. The feature of the Flash and Alarm going off at the same time as the call goes to the police and the SMS is sent to contacts, provides the user with more secure features during emergencies. The future scope of this app is to implement network switching and also to implement a gesture trigger where the user can trigger the SOS button by a gesture or a sequence of button presses with the phone locked. This app contributes to the Women Safety field by providing women with a sense of relief and courage to walk the streets. They would know for a fact that, 'Help is just one button away'.

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