

NC 812 INTERNET OF THINGS  
PROJECT REPORT

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**WithU (Smart Women Safety Application)**

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GROUP NAME:- WONDER WOMEN

Group Members:

Jahanvi Agrawal (IMT2019506)

Samhitha Perala (IMT2019521)

## 1 Abstract

This is an IoT-based Smart Women Safety Application designed to give women protection and safety in an emergency with minimal user interaction.

## 2 OBJECTIVE and MOTIVATION

Today, in the ongoing universal overview, the first question on every girl's mind is mostly about their protection and security, given the ever-increasing circumstances on women molestation in modern times. As a result, we must create a persuasive protection and alert system.

We will genuinely prosper as a country when women in India feel safe doing the most basic tasks like going to local shops without fear of being harassed. When every person learns what consent is and begins to respect the women in their lives, we will have achieved the ambition of our forefathers. As a result, we, as members of young India, bear the duty of making a tiny effort to realise this objective by submitting this application.

Our goal in developing this protection system is to create a perfected system that ensures women's safety in terms of tracking, recording, and self-defense. As a result, the project's major purpose is to assist any woman in any way feasible at any moment.

## 3 SYSTEM INFORMATION

In this section, we've gone over the specifics of our project design and implementation, as well as the issues and barriers we faced along the way.

### HOW DID WE DESIGN THE SYSTEM?

We have built our application using the tool: ANDROID STUDIO.

The project's main goal is to enable SOS functionalities with minimal user involvement. So, if one clicks the power button two times, the user is routed to the Home Page (if the user is already logged in), and then the SOS mode is activated by pressing the VOLUME-DOWN LONG PRESS, which sends the user's current position to the registered emergency contacts through SMS.

We started by creating a splash screen with two options: login with credentials and new user registration. We've linked our app to the **FireBase Database**, so when a user first registers, their information is automatically linked to the Real time Firebase Database.

When a user first logs in, their login information is saved, and they remain logged in until they press "LOG OUT." The logged-in user is now sent to the HOME PAGE, which has five SOS features.

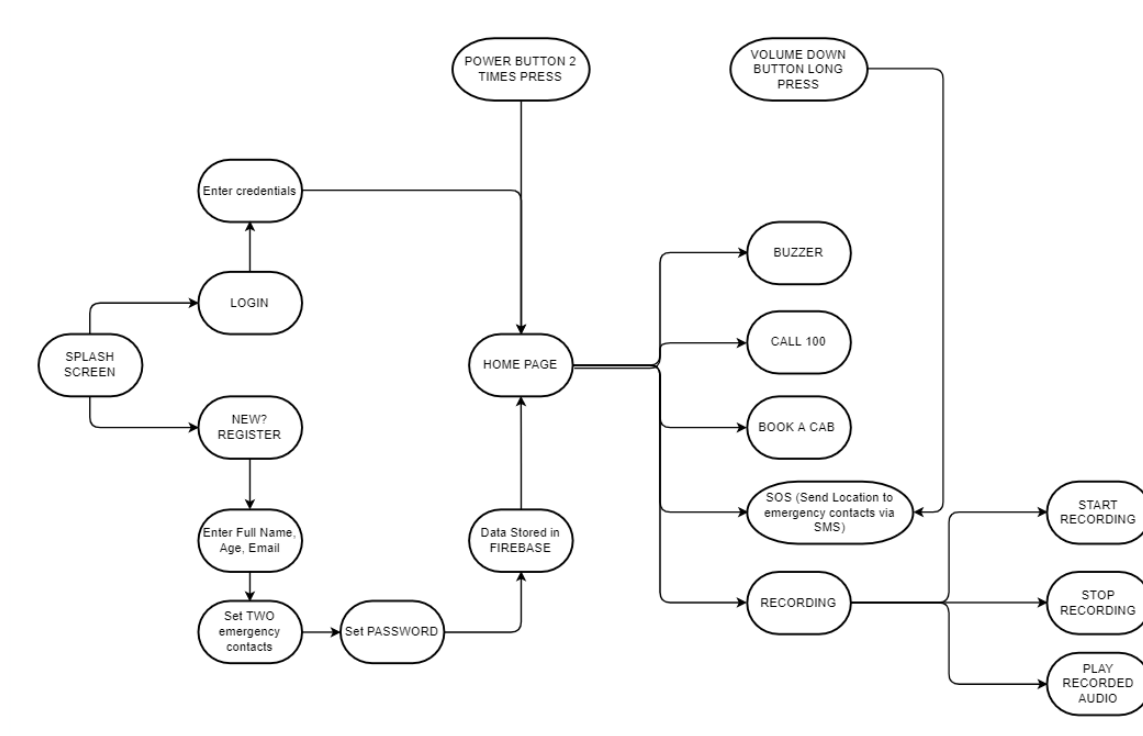


Figure 1: Design Flowchart of App

These five SOS features can be described as:

1. **BUZZER:**

Due to the current situation's atrocities against women, when this buzzer is activated, it assists the victim to inform everyone around her that she is in danger, as well as prevent the assailant. For the reasons described above, we have made this is a very loud alarm that rings for a long time.

2. **CALL 100:**

This option is included so that the victim can quickly contact neighbouring police stations with a single click.

### 3. **BOOK A CAB:**

The victim can use this feature to book a UBER cab (we can change it to any other third party cab-booking applications). We decided to integrate this option because if a women feels frightened or has to leave somewhere safe, she can use our app to order a cab as quickly as possible with just one click.

### 4. **SMS:**

This is one of our application's essential SOS features. The victim's current position is detected and her latitude and longitude are recorded when this function is activated. By producing a Google Maps link (with the latitude and longitude information), this information is drafted into an SMS, which is sent to the victim's emergency contacts, notifying them that she need assistance at the stated place.

### 5. **RECORDING:**

Smartphones are the latest instrument being utilised to increase women's safety in crime-prone areas. As a result, this feature assists the victim in documenting their surroundings or capturing any evidence that may be relevant for future purposes as an audio recording. We offer a function that allows you to start recording, stop recording, and then play the captured audio.

## 4 Results/Outcome of Project

The splash screen and the home screen are seen below. A new user registering or a current user logging in should travel to the splash screen, where they will be sent to the home screen, which has five features.



Figure 2: Splash Screen

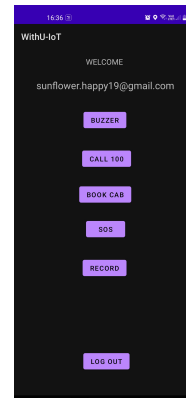


Figure 3: Home Screen

Shown below is the database of one particular user.

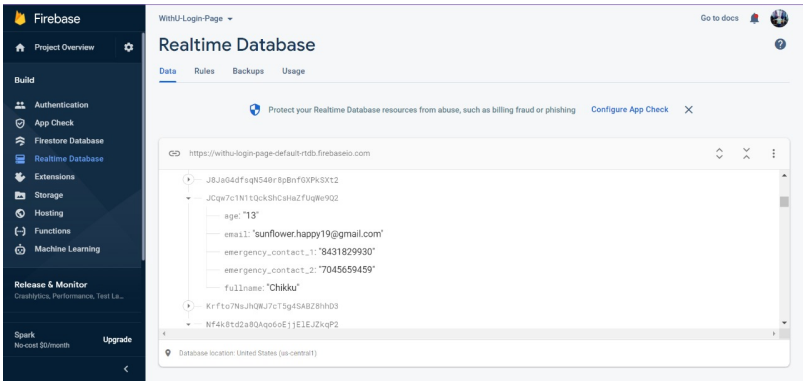


Figure 4: Database of a particular user

The emergency contacts listed above are the recipients of the SOS message, as illustrated below. Self-contact is one of the emergency contacts, thus we're sending and receiving SOS messages at the same time.

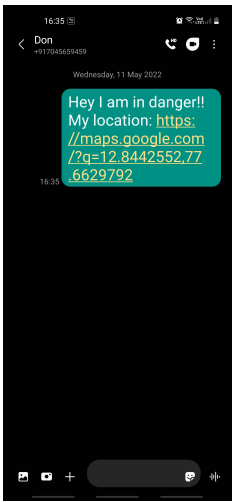


Figure 5: SOS sent 1

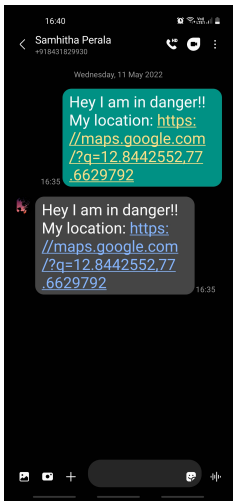


Figure 6: SOS sent 2

Before sending the SOS, our software displays the user's current location, as illustrated below. We also see that our app pushes users to Uber to book a cab.



Figure 7: Location

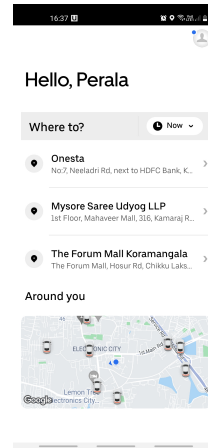


Figure 8: Book a cab

In an emergency, a user can phone 100(POLICE) and start recording her surroundings with a single button press, as seen below.

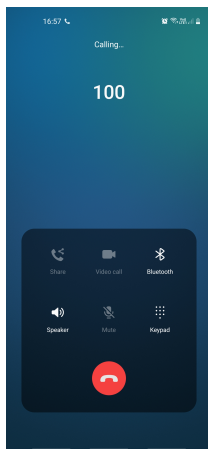


Figure 9: Call 100

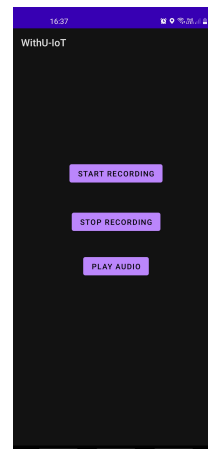


Figure 10: Book a cab

## 5 Code

GitHub link - <https://github.com/1234-jahanvi/WithU-IoT>

## References

- <https://stackoverflow.com/questions/19856758/how-to-detect-long-press-of-volume-button>
- <https://www.geeksforgeeks.org/audio-recorder-in-android-with-example/>
- <https://www.tutorialspoint.com/how-android-youtube-app-play-video-from-intent>