

Difesa

Overview

For the sake of alarming conditions **with regards to women**, we are developing a complete system involving **mobile application, wrist gadget, and website portal** which not only give them what they deserve but also helps in eradication of despoilers.

*The **main features** of our work are providing a **shake to activate emergency services like- call to the guardian along with location tracking via text message and other networking tools** even if the **mobile is in lock mode and the app is not running in the background**.*

*On the triggering of a button embedded on gadget an **Anti-Cut Call** (an infinite call will be sent which can't be disconnected on both ends unless both the mobiles will be switched off simultaneously) will be sent.*

Goals

1. **Application development:** A mobile application that will be having all the features which can be used while having an attack. **Location tracker, SOS, shake to call, one tap ola cab booking ride for the current location to the nearest police station or home(whichever is close), voice command call, on shaking mobile app will capture the photo of the person in front of her and send it on WhatsApp with live location along with a call, a shake activation sets off an emergency call along with a live location text message.**
2. **Gadget Development:** A wrist band based smart gadget consisting of all the emergency buttons to directly **call for help**. Pepper spray and other small effective defensive tools can also be embedded.

We will also be developing an attachment for present analog and digital watches along with an app for smart wearables.

3. **Website Development:** A **multilingual** web application that will have all the features which can help a woman to raise issues in public against any wrong deed through **social media**.

Blogging, socializing, uploading resources, e-commerce, e-learning solving your problems.

The website will be accessible to all the police stations to determine the maximum areas of threat and can take actions such as patrolling.

Specifications

Application Development:

An **app will be a handy tool that supports the hardware** by mapping its data and also acting as an individual tool that has capabilities of helping the victim in case of damage. It has been integrated with **multiple features like instant image capturing**(that can act as proof in case of future inquiries), **time to time location sharing with the guardian, shake to call voice call for instant contact, playing of siren using mobile and also calling of nearby cabs using access of OLA and Uber** so that it can help maximum people to reach the distressed in the shortest time. The app has been provided with a **dashboard to maintain** a status about the user's health status and a collection of their **health profile**. This app aims to provide user interaction along with continuous analyses of incoming data from the hardware that is being received continuously and **monitoring it using our app over firebase as our database**. The app will have a feature to make a call to the guardian of the victim and this call cannot be cut by any means if it is made using the emergency button on our gadget. Also, there is a **shake detector** where on shaking once an **image of the disposer, live tracking locator along with a background call** will be sent to the Guardian via WhatsApp. Further, our app will be sending push notifications to nearby people, and once the person approved to help it will show the shortest path to the victim.

Gadget Development:

Microcontroller Based gadget which can be very useful during the attack. Enabled with **nodemcu, pulse sensor, camera module, emergency buttons, pepper spray**. The gadget will be having a nodemcu (ESP8266) which will be **connected to public wi-fi, on triggering** button

embedded in the gadget a request to the database(firebase) will be sent, from there the number of guardians will be fetched for respective user and an **anti-cut emergency call will be sent**. In the future it can be added with tasers. This device will be continuously monitoring the status of the person wearing it and the device is cost-efficient.

Website Development:

The web will provide a platform to **buy the hardware** we have developed, moreover here women can secure themselves through the means of **social media** as it is important to be mentally strong as well. For this, we have created a **blogging system with a tag system**, users can come with a movement against any wrong deed happening to her, they can share any post they like with others through the mail. Also, we will provide a **learning platform** where they can learn about Self-Defence, Fundamental Rights, and could create their own course as well for others. They can also upload their own written books on our site and could read others as well.

Novelty

Application Development:

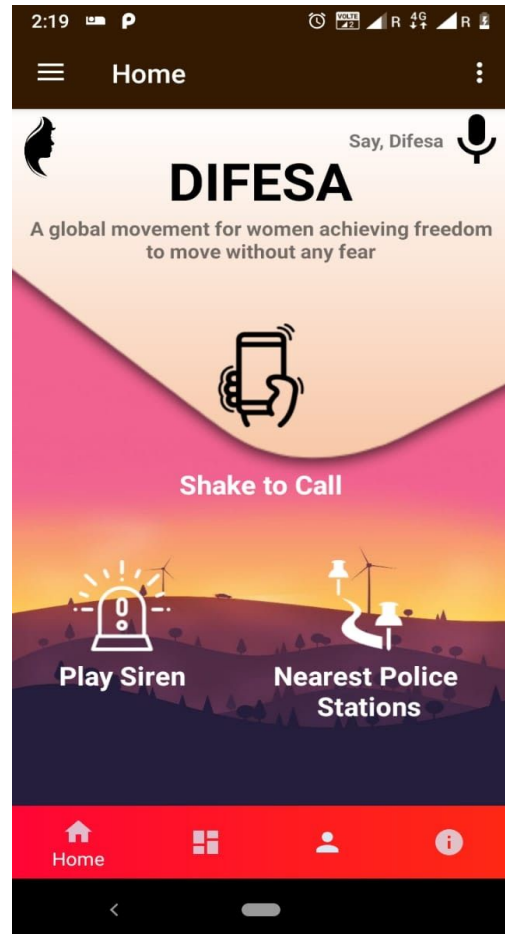
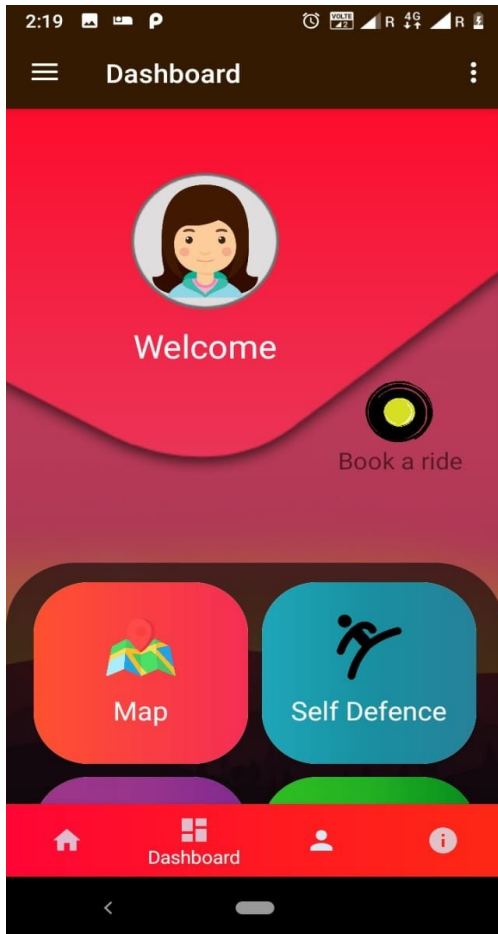
1. Shake to call and Send location.
2. One tap booking of a cab that would arrive at the location as soon as possible.
3. Visibility of the user's location to the users of the app in close radius so that they can arrive to help the victim before the police or guardian.
4. Scheduled sharing of the location to the chosen contacts.
5. The rating of areas based upon crime rates and emergency buttons used in that area so as to notify people to stay away from those dangerous areas and notify Police to stay more alert in those areas.
6. Activation of the emergency call through scream so that the user can call for help without even touching the phone.
7. Activation of the emergency call through a sudden increase in heart rate if the victim could not scream or use the hardware and calibration of the heart rate sensor so that it does not call for an emergency in case of day to day physical activity.

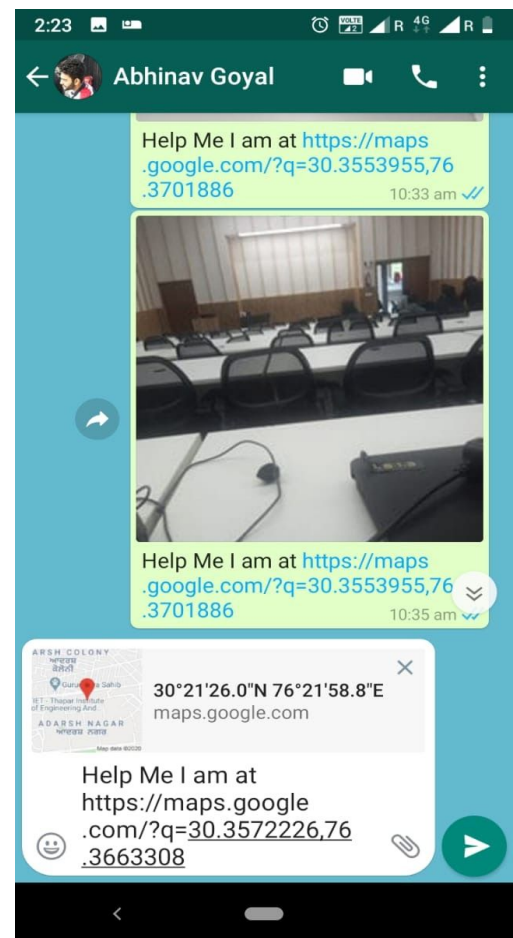
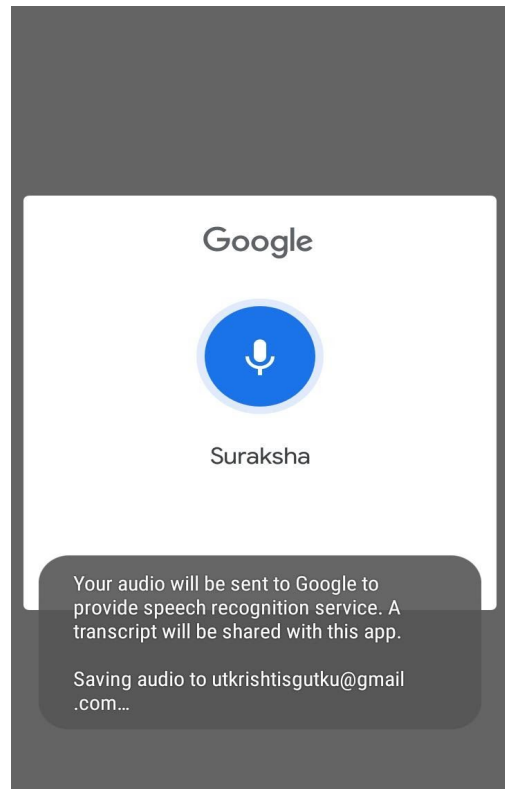
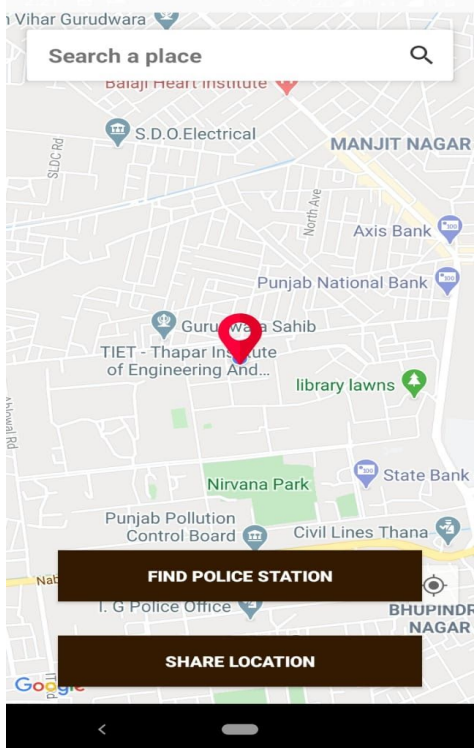
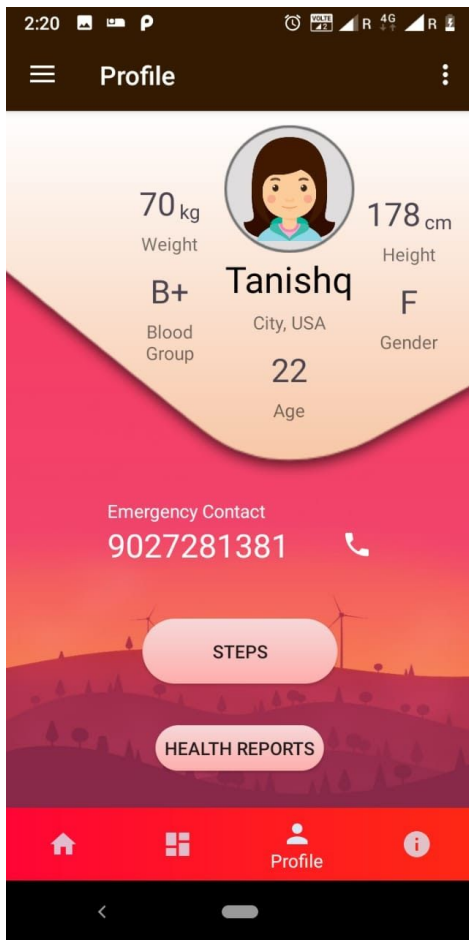
8. On shaking mobile in lock mode, an emergency call with a text message will be sent to the guardian.
9. On clicking the shake detector an image of the person in front of the victim with live location via WhatsApp is being shared with a background call to the guardian.

Technology Stack and Dependencies

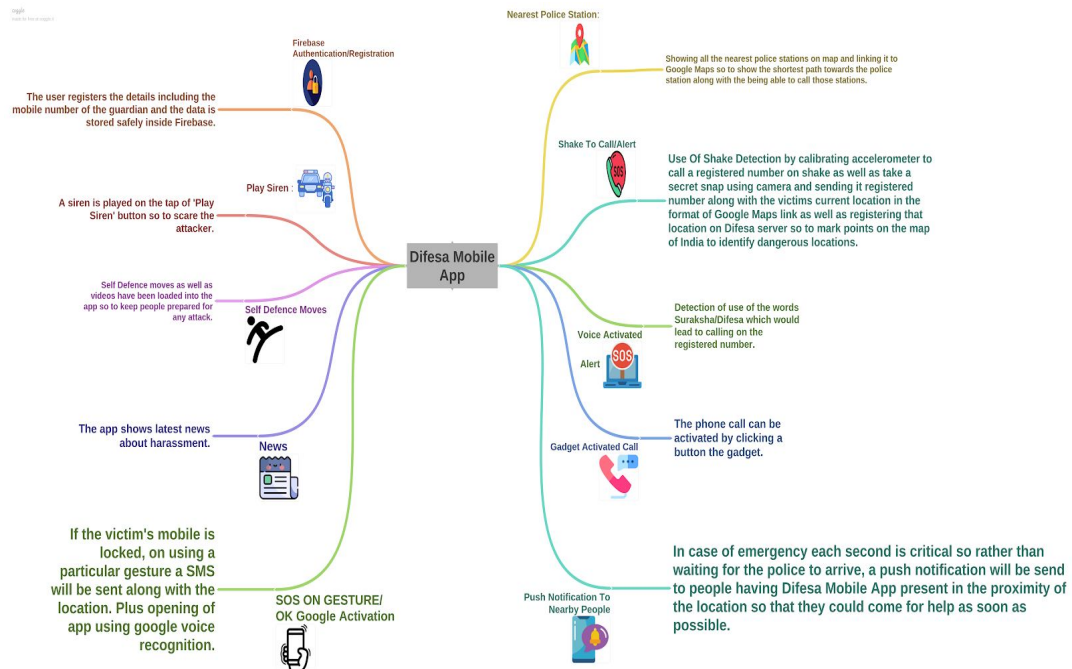
 Arduino Microcontroller for Software interfacing with Hardware	 WhatsApp For Sending Notification to user	 ESP8266 NodeMCU Wi-Fi Chip for Device to communicate.
 Android Studio Mobile App Development for Better User Interface	 Node.js Backend for Web Portal	 ExpressJS Java Script Framework for our Website
 Firebase For Application and Web Backend and Database Management	 PubNub Interfacing NodeMCU with Notification	 Voiceflow Hardware Integration of Amazon Echo Dots and Google Homes
 Google Maps API For detection of nearest Vaccination Centre and Child Care Hospitals.		

UI of DIFESA





FEATUREs DIAGRAM



WORKFLOW AND STRUCTURE

