Women Safety Website

Microsoft WIT Hackathon

Submitted By

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Problem statement

This app should be designed to provide security to women in a few or many scenarios. It can guide the path to safety, make SOS calls, allow the person to be tracked, have SOS button, support gestures to initiate security actions or provide some threat mitigation features itself. You can choose to make a web application or a mobile application. If you are building a web application, your functional prototype should render equally well on these browsers - Microsoft Edge, Google Chrome, Mozilla Firefox, and Apple Safari.

Introduction:

Women safety has become a topic of concern in the recent years due to the increase in the number of crimes like molestation, sexual assaults, rapes, trafficking, etc. These crimes have compelled our society to take strict measures to curb crimes on women. While there are strict laws that protect women, there are still not many solutions present with us to "prevent" to prevent such crimes. Our app "Sakhi", which means friend in Hindi, is a small contribution that helps prevent crimes on women.

App features:

Here is a detailed description of our app Sakhi:

1. SOS Button:

The red button shown in the image below represents the emergency button of Sakhi(Fig 1). Clicking of this button takes the current location of the user and then sends the location to the list of emergency contacts registered in the app. One can find the message format in the images given below(Fig 2).

Fig1: SOS button

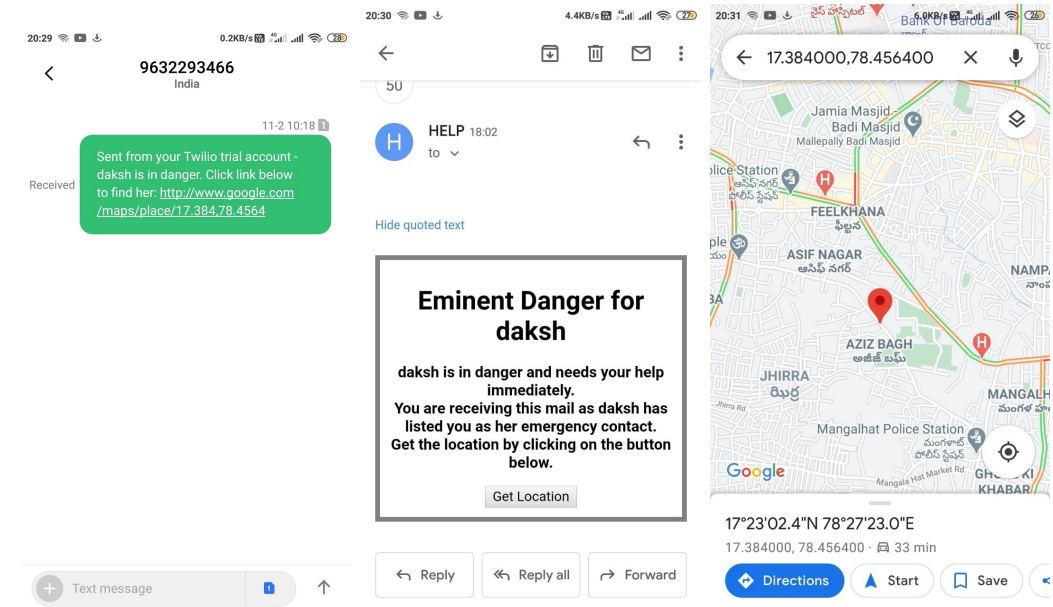

Fig 2: Message formats

2. Guide Path to safety:

This app also has features to direct a woman to the nearest help centre. There are two buttons as shown in the image below:

1) **"GET NEAREST POLICE STATION"**: Gives the user directions to the nearest police station starting from the current location of the user.
2) **"GET NEAREST HOSPITAL"**: Gives the user directions to the nearest police station starting from the current location of the user.

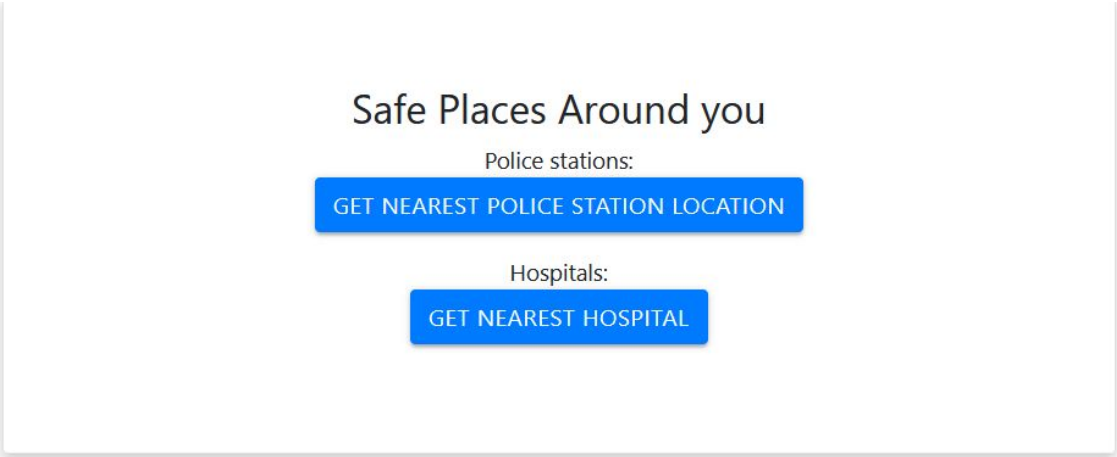

Fig 3: Near help centre buttons

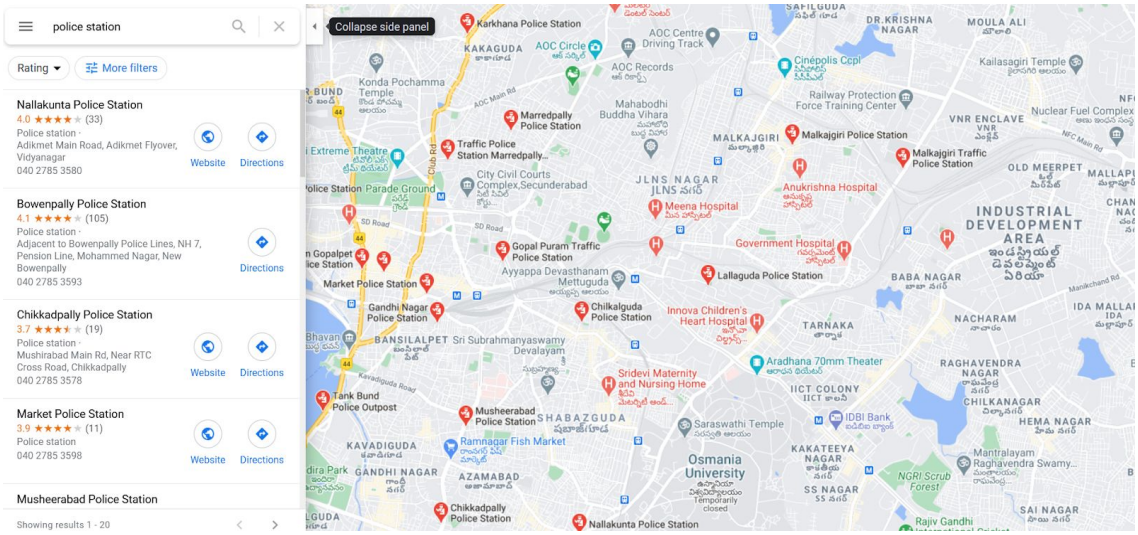

Fig 4: Location provided by the feature

3. Threat Mitigation:

The button shown in the image below produces a sudden loud noise, when clicked by the victim. This can be used to alert the people around her for immediate help in case there is a delay in help from the registered emergency contacts.

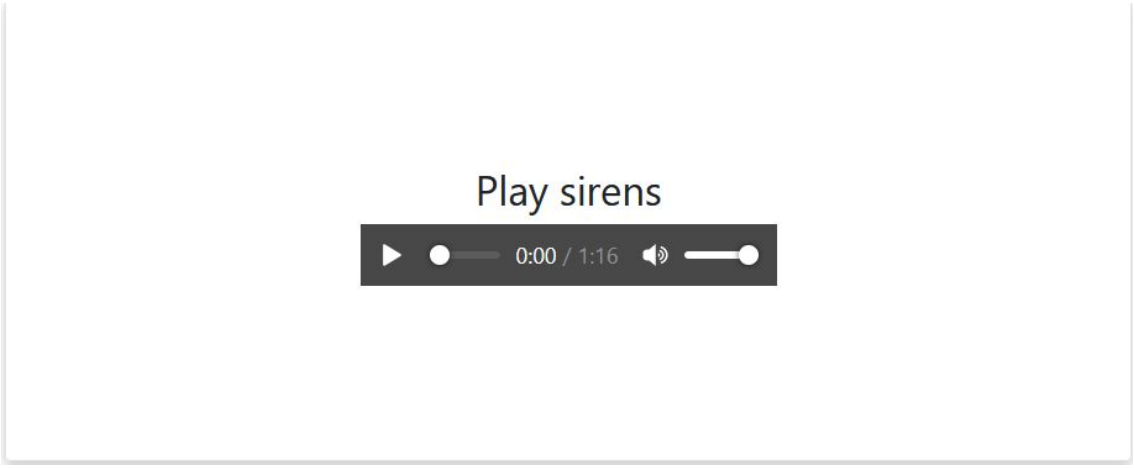

Fig 5: Threat mitigation feature

4. **Support gestures to initiate security actions** (to be added in the future releases):

This feature records the hand gestures, using the camera of the device. When the palm is completely open and shows 5 fingers, it directs the user to the web page and automatically sends a message with the user's location to all the registered emergency contacts in the format shown in (Fig 2). One can see the sign language that triggers the action in the image below.

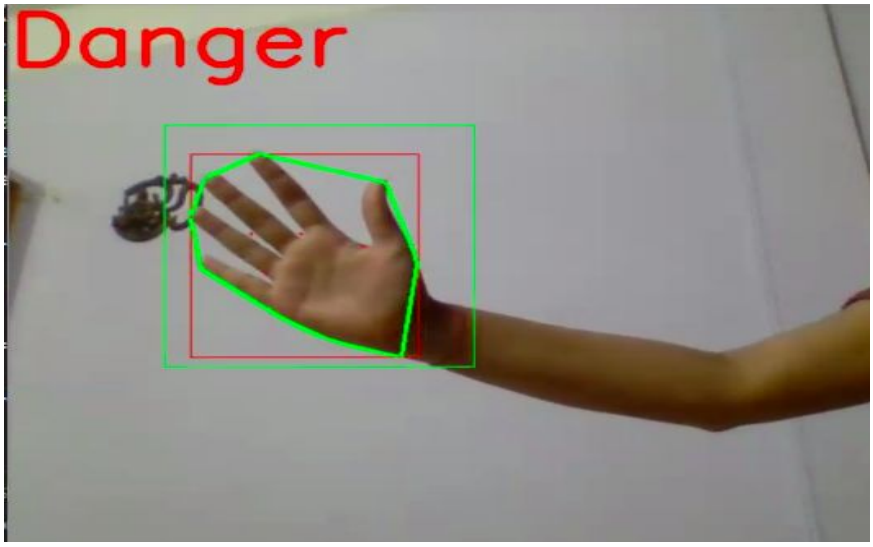

Fig 6: Hand Gesture triggering the emergency action

5. **Provide Self Defence techniques:**

This feature directs the user to the best self defence techniques in order to prepare as well as provide the user with the necessary techniques with which the user can react to the situation to protect herself.

Fig 7: Self defence techniques suggested by the user.

Languages Used:

1) Frontend- Html,css
2) Backend- Python
3) Database- MySql
4) Hosting- Azure Cloud Services
5) Frameworks - Django, twilio, opencv, geocoder

Installation

To install all python dependencies:

```
pip install -r requirements
```

Make sure you have your MySql database credentials in settings.py

To run the django server on localhost:

```
python manage.py makemigrations
python manage.py migrate
python manage.py runserver
```

You will see the following on the command line

```
Performing system checks...

System check identified no issues (0 silenced).
```

```
February 12, 2021 - 15:50:53
Django version 3.1, using settings 'mysite.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
```

Visit http://127.0.0.1:8000/ with your Web browser.
The project is also hosted on Azure cloud: https://women-safety.azurewebsites.net/
The hosted project is not fully functional due to database hosting issues.

To run the Hand Detection Software:

```
cd main_app
python hand_detector.py
```

The opencv window will appear. It shows a danger message when you show 5 fingers with an open palm in the green box.

File description

Refer: https://github.com/dax-1895/Microsoft-WIT-submission/

File	Description
manage.py	A command-line utility that lets you interact with this Django project in various ways.
mysite/	directory is the actual Python Django package for your project
mysite/settings.py	Settings/configuration for this Django project.
main_app/	The actual Django application we will be building upon
main_app/urls.py	To add urls routes to the Django application
main_app/views.py	Adds functionality to all the HTMLfiles
main_app/templates	Contains all the HTML files
main_app/models.py	Creates models for the application, where each attribute denotes a database field

main_app/location.py	Uses geocoder api which finds the latitude and longitude coordinates of the user
main_app/forms.py	Contains the form elements
main_app/mail.py	Uses Twilio to send sms and email.utils to send the emails to the emergency contacts.
main_app/hand_detection.py	Contains the functionality of the hand detector which analyses danger when the user shows 5 fingers

User Guideline:

1. Please provide 916370926031 as the phone number of the emergency contacts as Twilio only sends messages to verified numbers

   https://www.twilio.com/docs/usage/tutorials/how-to-use-your-free-trial-account

2. The hosted version of the website https://women-safety.azurewebsites.net/ is not fully functional due to database integration issues.
3. The support gesture feature has not been integrated; the file hand_detector.py has to be run separately to see the result.