

Citizen Safety Application

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Abstract: *In the 21st century, technology has become an integral part of our lives. A green field where mobile integration with technology is helpful for own safety and crime reporting. So, considering this, this paper discusses an operation for the citizens so that they have some redundant safety or we can say they can have their safety in their own hands. In this application, users can send SOS calls and SMS to one of their connections as well as to the registered volunteers. They can also partake in their live position through the application. So, the basic motive of this application is assurance of the safety of the users.*

Keywords: APIs, SOS, Security, Volunteers.

I. INTRODUCTION

In today's world, not a single person is safe, we see each day some men/women/old age people traveling alone get persecuted or acted out. And if we talk about women, yes this is true that women are not safe today, but do men are?? We suppose no!! Not indeed a single person is safe. We have launched the application to reduce the chances of becoming a victim of a violent crime.

The occurrence of start crimes is mostly unpredictable and can happen to anyone in a blink of an eye. When a person is alone and has fallen victim to assault, robbery, and kidnapping and may be too wounded to move or has gone missing, it is usually only after a significant amount of time that their close contacts realize something is amiss and it might only be a while before they decide it is serious enough to act on it.

Examples of this could be snatch-theft, smash-and-grab incidents, physical or sexual assault, bump-and-rob cases involving vehicles, and robberies that are visible to the public. These crimes can range from petty crimes to offenders growing increasingly.

II. LITERATURE SURVEY

[2] Thosani Yash Bhavesh, NagdaPagda Preet Kirti, Panchal Rutvik.(2021)

Has proposed a real-time Emergency Reporting and Handling System. This research work intends to create a system that allows the user to send an emergency signal to the authorities using their smartphones at time of the distress and also it provides an interactive map to the control room which indicates the live location of the person in distress all in real-time. This results in the safety of civilians along with a method for the authorities to deal with emergencies and crimes.

[4] Aarati Patil, Nikita Kalle, Ashish Chhoriya, Hitesh Katariya, Prof. Swati Rajput. (2022)

Has developed a women's safety application using a shake sensor. This report represents an application that serves the purpose of rescuing women from dangerous situations.

III. PROPOSED SYSTEM

A: Existing System:

In the present scenario, security of every citizen is involuntary. In general, if you want security, then you have to ask for help by going to the nearby police station, but this is improbable. Certainly, this takes time. The Existing Safety Applications are based on machine learning, deep learning and also IOT based which will only work on the previously added connections. To avoid such agonized situations, we have designed an application to get help easily.

B: Drawbacks of the System/ Previous Methods:

In the existing system, once a user reaches police station, he/she needs to describe the whole incident in front of them and then also police will write all the details. The applications which are on play-store regarding safety and security of citizens, it does not provide crime rate of the current location of the user.

C. Problem Definition

As of today, the reporting system in the country must be reported personally. The concerned citizen must go to the nearest police station or a person needs to call for help for faster action. Most of the people do not know the nearby police station, or sometimes the police station is far away from the crime place. In such cases the user did not get help immediately, so considering this we focused on the local volunteer so the user can get immediate help whenever required.

So, the main motto of our project is: “Zero Compromise towards Everyone’s Safety”

D. Requirement Specification

1) Functional

The system automatically validates the user by their location. The software application is properly integrated with the victim and live location detection. Sign-up and Register Page. Logging with E-mail id and phone number. Phone number and E-mail ID verification. Allow access to the GPS.

2) User interfaces

The detail of the system working is included in this section. It gives the description about how the system communicates between different interfaces. While using the application for the first time the user will have to go through a process to register themselves to the application. The first page the user will see is the Sign up/ Log in page. If the user has not registered before then they have to go through the Registration page and fill all the mandatory details. If already registered they can direct login and access different features. Users also have a Profile page to update their information like email, Contact number, password. The user can also register themselves as a volunteer to help those in need.

3) Non-Functional

Scalability

- Applications should be able to support the increase in user number.
- Applications should be able to support new updates and functionalities.

Reliability

- The application must be serviceable all the time.
- Down time after the failure should not exceed a certain time span and the user should be notified about it.

Usability

- New users should be able to understand the working of the application without any instructions.
- For the regular user the functionalities should be easy to locate and accessible.

Performance

- The number of increasing users should not affect the application.

Security

- The data of the user should remain private.
- Only concerned users should login.

Supportability

- The application should be able to harmonize with the new functionalities.
- The application should carry out all the services that are required throughout the life-cycle of application at an affordable cost.

E: Proposed Solution

Our system provides security to every citizen. The main motto of our system is “Zero Compromise towards Everyone’s Safety”. Our application is developed by using Flutter software, a cross platform technology which works on every platform like Android, IOS. The mobile application is created which helps us to take steps towards safety of citizens. We have different features in our application.

1) SOS Button:

When the user is in difficulty and wants to inform someone, the user can press the SOS button and it will act like an emergency signal and the notification will be send to any of the volunteer as well as to contact number we have added. Basically, the user has to enter details about emergency contacts while registering in the application.

2) Share Live Location and Tracking:

The user can share their live location as well as can set a range of location which will vary from 2km to 25 km for more accuracy, so that the volunteer can help the user in that particular range more accurately, here we are retrieving the user’s location by Using Google maps.

3) Register as a Volunteer:

The NGO members as well as local members can register themselves as a Volunteer. Also, the members in our Emergency Contact list can also work as a volunteer.

4) View Past Reviews:

The victim can rate the volunteer’s performance by giving them stars, the volunteer gets certified by the organisation for his/her performance from the reviews given by the victims.

Users can see past reviews.

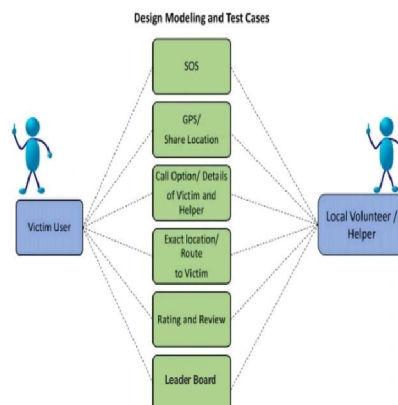
5) Calling Option:

As soon as the local volunteer approves the help request of the user, the user as well as the volunteer gets a calling option, where the user can see all the nearby approved volunteers list with the calling option.

F) Technology Justification:

1. Flutter_phone_direct_caller: This plugin is used to implement the calling option.
2. Google_maps_flutter: This plugin is used to integrate Google Maps.
3. Geolocator: This plugin provides easy access to platform Specific location services.
4. Background location: This plugin is used to get location updates in the background.
5. Sensors: This plugin is used to access android as well as IOS accelerometer and gyroscope sensors.
6. In_app_review: This plugin is used to show a review popup.

G: Design Modeling and Test Cases



H: Estimation

1) Resources Required

Hardware: Cell Phones are the only hardware required.

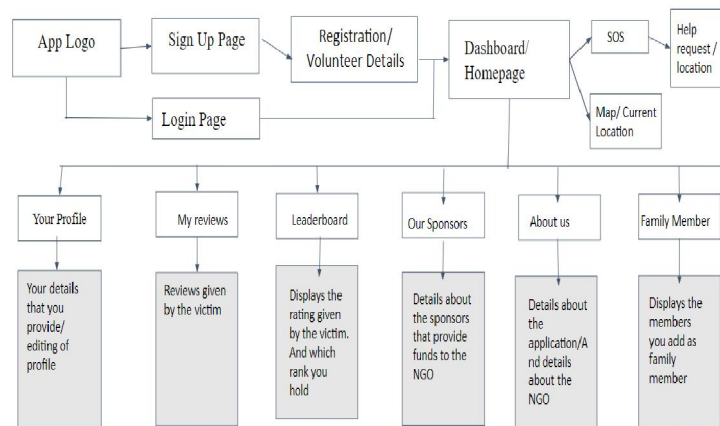
2)Software

- Flutter
- Dart
- Firebase / NoSQL for Database

I: Firebase

Firestore is the developer software designed and developed by Google. It uses NoSQL to store the data. This backend tool helps you to build, improve and grow your application. Google fully manages and maintains the backend components. Firestore provides client SDK's that directly interact with the backend services, there is no need to establish any middle ways between app and the services. Firestore offers a number of services like Analysis, Authentication, Real time database, FCM, etc. Firestore does not require programming which makes it easy and efficient to use.

J:Flow Diagram:



K: Flutter and Dart

Flutter is an open-source UI software development tool which was developed by Google. It is used to develop applications on cross-platforms, applications for Android, iOS, Mac, Linux, Windows can be developed using a single codebase. Flutter uses Dart programming language. It is an Object-Oriented language for developing fast applications on any platform.

IV. CONCLUSION AND FUTURE SCOPE

The main aim of this project is that it focuses on providing security to users, which includes location-based service, call services, GPS service. In the first phase we have completed some of the modules which include a registration module in which users provide personal information as well as set their own password for the access of the application, which is further used for the login module.

In the next module we have given the SOS button which is the emergency button which helps the user to send the emergency alert to the volunteer. In the next module there is a new feature that is range selection where the user can set a range till what distance the alert should go. In the last phase of the project, we completed all the modules. We have provided an option for users to add any volunteer as a family member and the other one is that the user can rate the volunteer whoever helps the user. This application is designed for android as well as IOS platform for the safety of every citizen with the aid of some improvements.

V. FUTURE WORK

1. To create an awareness among people about the safety of all citizens.
2. Citizens have the right to be safe and free, and we will add features to the app to help citizens fulfill their potential as individuals and contributors to work, communities and the economy by removing barriers to an unsafe environment.

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