

A
PROJECT REPORT ON

AN MOBILE APPLICATION **FOR CRIME ALERT**

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Subject: System Design Practice

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CERTIFICATE

This is to certify that the practical / term work carried out in the subject
of **System Design Practice** and recorded in this journal is the

bonafide work of

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1. Abstract

Crime Alert app is a cross platform mobile application. Through our application, whenever someone is in a panic situation, he/she can immediately ask for help to nearby police-station and also contact their family members/friends by only just one tap. Also by just one tap the particular's current location will be shared with police as well as his/her family members/friends. Users can also send alerts when there is no internet connection. Users can also see danger levels for a particular location/area through this app and another user can see that and react accordingly. Location based crime prediction.

2. Introduction

2.1 Brief Introduction

When a person is in a panic situation or he/she feels that they are in danger, at that time they want to reach out to police or their family members. And the only way to reach out is via Call/SMS. And this might be time consuming sometimes.

So to solve this problem(described above) we created a mobile application called “Crime Alert app” which works on both IOS and android devices. Through our application a person can send an alert to police as well as their family members/friends. The Alert contains the person's current location(when he/she sent the alert) and additional information(if provided any by person). The police station nearest to the person's location will get the alert and can react accordingly. The form in which the alert will be sent is SMS, Email and push notifications(if the receiver uses our app).

Another feature of our application is, it will provide every user crime data of particular area month wise. So that each person reacts accordingly. In our application's map user can see the danger level of his/her near area.

2.2 Technology/Platform/Tools used

- **Technology Stack:-**
 - Node.js (backend)
 - React Native (frontend)
 - express (server)
 - MongoDB (database)
- **Platform**
 - Cross Platform Mobile application (IOS & Android)
- **Tools**
 - Visual studio code
 - Expo CLI + Mobile App

3. Software Requirement Specifications

3.1 Functional Requirement Specification

It specifies the main features and function of the system/product. These functional requirements can be specified by the actual user or group of people who works for the organization.

3.1.1 User

3.1.1.1 Login

Description: It is recommended to login to get best out of the system.

Input: User credentials.

Output: Redirect based on credentials.

3.1.1.2 Registration

Description: User must register themselves before login/access the system.

Input: Detailed information.

Output: Returns acknowledgment.

3.1.1.3 Send Alert

Description: Send alert by just one tap to police and relatives.

Input: Any message (optional).

Output: Acknowledgment.

3.1.1.4 Add relative

Description: User can add relative/friend to whom he/she wants to send an alert.

Input: Name, mobile number, email, priority.

Output: Acknowledgement.

3.1.1.5 Manage relative

Description: Can update or delete existing relatives.

Input: New relative data.

Output: Acknowledgement

3.1.1.6 View alerts

Description: The user who is added as a relative to some other user can get notified whenever crime is registered.

Output: Crime alert notification, SMS and email.

3.1.1.7 View crime data

Description: User can see the crime data of particular city month wise.

Input: city name

Output: Number of cases registered in a given city.

3.1.1.8 View danger level

Description: User can view the danger level of his/her nearer area in the map.

Input: User's current location.

Output: Danger level in map.

3.1.1.9 Manage User

Description: Update/delete account

Input: New user data.

Output: Acknowledgement.

3.1.1.10 Change Password

Description: User can change password

Input: New password

Output: Acknowledgement.

3.1.2 Police

3.1.2.2 Login

Description: Police must be logged in to access this application.

Input: Credentials

Output: Redirect based on credentials

3.1.2.2 Registration

Description: Police must register themselves before login/access the system.

Input: Police key

Output: Acknowledgment.

3.1.2.3 View alerts

Description: Shows the nearer registered crimes.

Output: Number of crime details with location.

3.1 Non-Functional Requirement Specification

Performance Requirements:

Servers need to be capable of handling huge amounts of requests from users. Mobile applications should work well on both android and ios mobiles with minimal crashing issues.

Safety Requirements:

In case of too many concurrent requests, The data must not be corrupted while changing records in the database. Before any important or responsible action, a widow alert must be shown and ask for confirmation.

Security Requirements:

User's data must be secured in the database. Unauthorized access must not be allowed to the database. None can see crime details of users other than his/her relative/friends.

Software Quality Attributes:

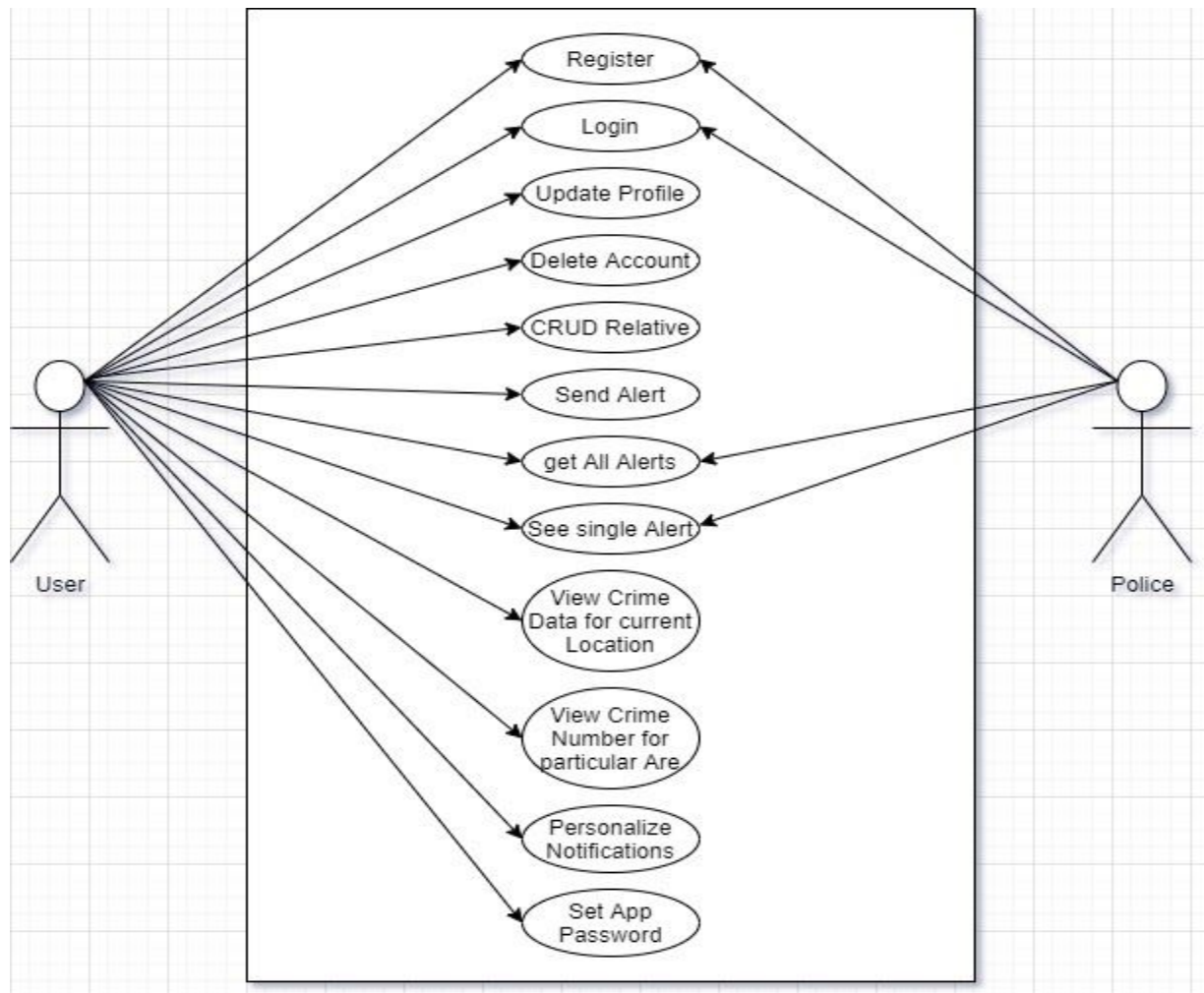
System should be-

- Consistent in performance
- Safe and Secure
- Robust
- Scalable
- Flexible
- User friendly
- Efficient

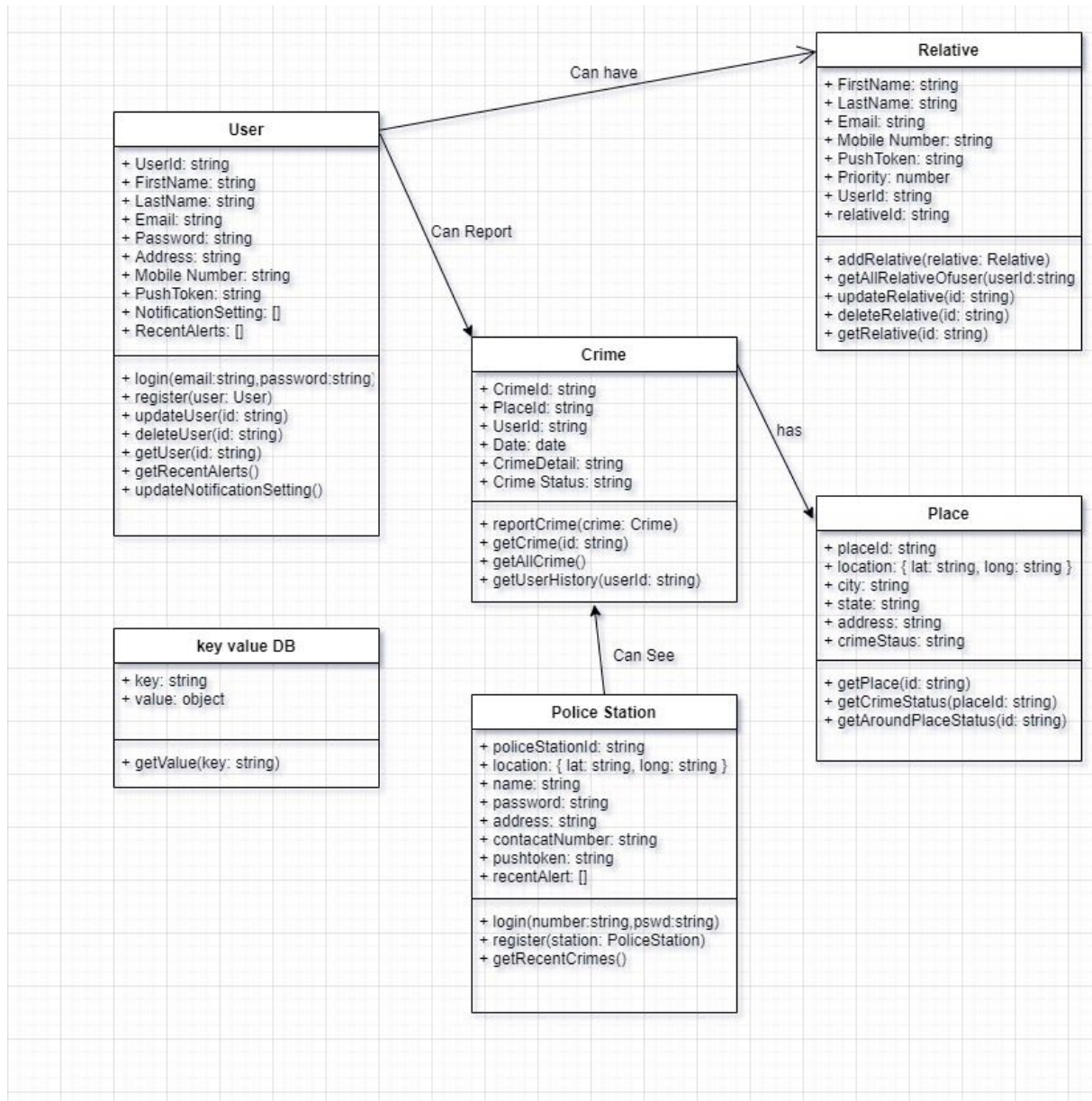
- Inter-operable
- Upgradable
- Available all the time.

4. Design

4.1 Use Case Diagram



4.2 Class Diagram

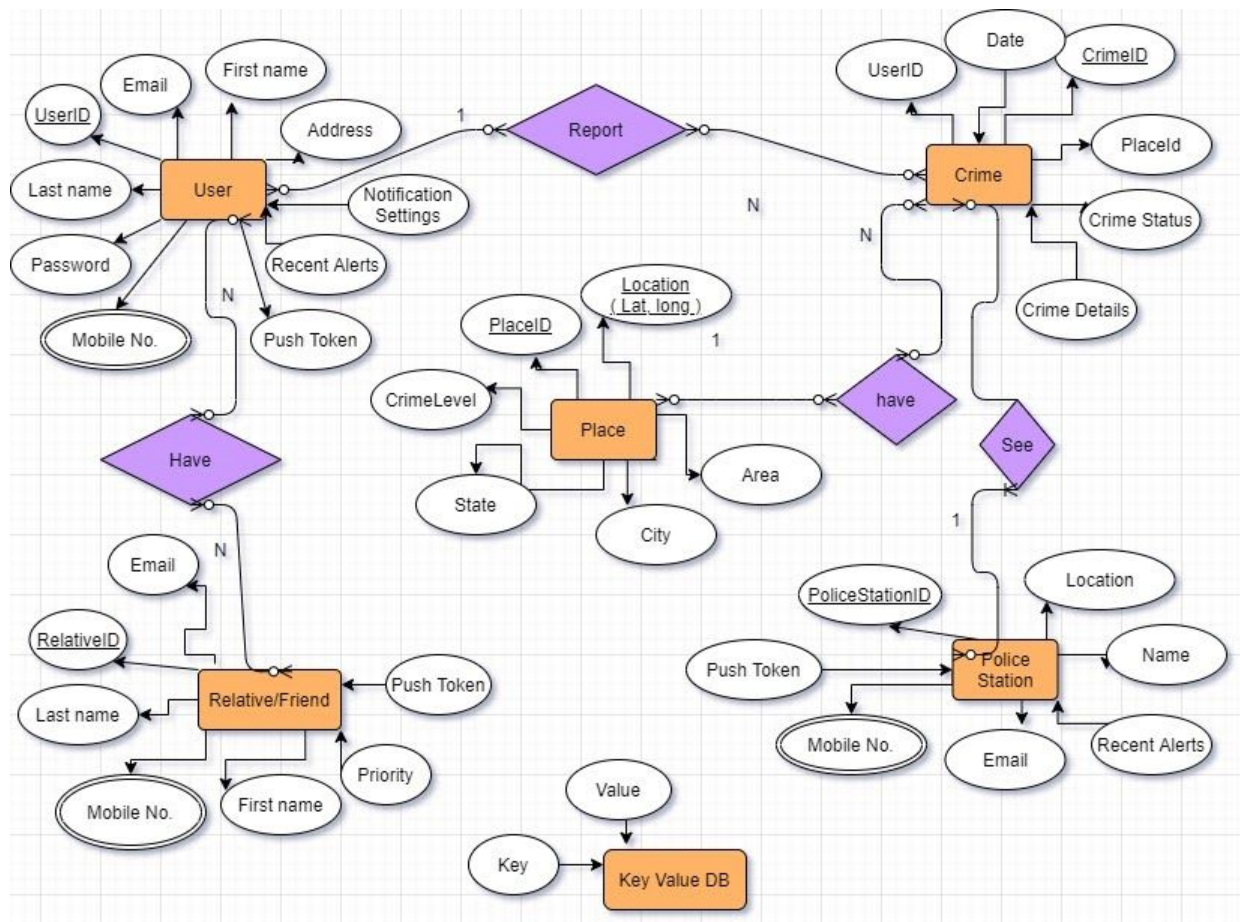


4.3 Sequence Diagram

4.4 Activity Diagram

4.5 State Diagram

4.6 ER Diagram



4.7 Data Dictionary

1. Users

Field Name	Data Type	Size	Constraints
UserId	Varchar	50	Not Null, Unique, Primary Key
First Name	Varchar	50	Not Null
Last Name	Varchar	50	Not Null
Email	Varchar	256	Not Null, Unique
Password	Varchar	50	Not Null
Mobile Number	Varchar	16	Not Null, Unique
Address	Varchar	256	Not Null
Push Token	Varchar	50	-
Recent Alerts	Array	-	-
Notification Settings	Array	-	-

2. Crime

Field Name	Data Type	Size	Constraints
CrimeId	Varchar	50	Not Null, Unique, Primary Key
UserId	Varchar	50	Not Null
PlaceId	Varchar	50	Not Null
Crime Status	Varchar	256	-

Crime Details	Varchar	256	-
Date	Date	-	Not Null

3. Place

Field Name	Data Type	Size	Constraints
PlaceId	Varchar	50	Not Null, Unique, Primary Key
Location(Lat, Long)	Varchar	50	Not Null
City	Varchar	50	-
State	Varchar	256	-
Address	Varchar	256	-
Crime Level	Varchar	256	-

4. Relative

Field Name	Data Type	Size	Constraints
RelativeId	Varchar	50	Not Null, Unique, Primary Key
First Name	Varchar	50	Not Null
Last Name	Varchar	50	-
Email	Varchar	256	-
UserId	Varchar	50	Not Null
Mobile Number	Varchar	16	Not Null, Unique
Priority	Integer	-	Not Null
Push Token	Varchar	56	-

5. Police Station

Field Name	Data Type	Size	Constraints
Police Station Id	Varchar	50	Not Null, Unique, Primary Key
Name	Varchar	50	Not Null
Location(Lat, Long)	Varchar	50	Not Null
Address	Varchar	256	Not Null
Email	Varchar	256	-
Mobile Number	Varchar	16	Not Null, Unique
Recent Alert	Array	-	Not Null
Push Token	Varchar	56	-

6. Key Value DB

Field Name	Data Type	Size	Constraints
Id	Varchar	50	Not Null, Unique, Primary Key
Key	Varchar	256	Not Null
Value	Object	-	Not Null

5. Implementation Details

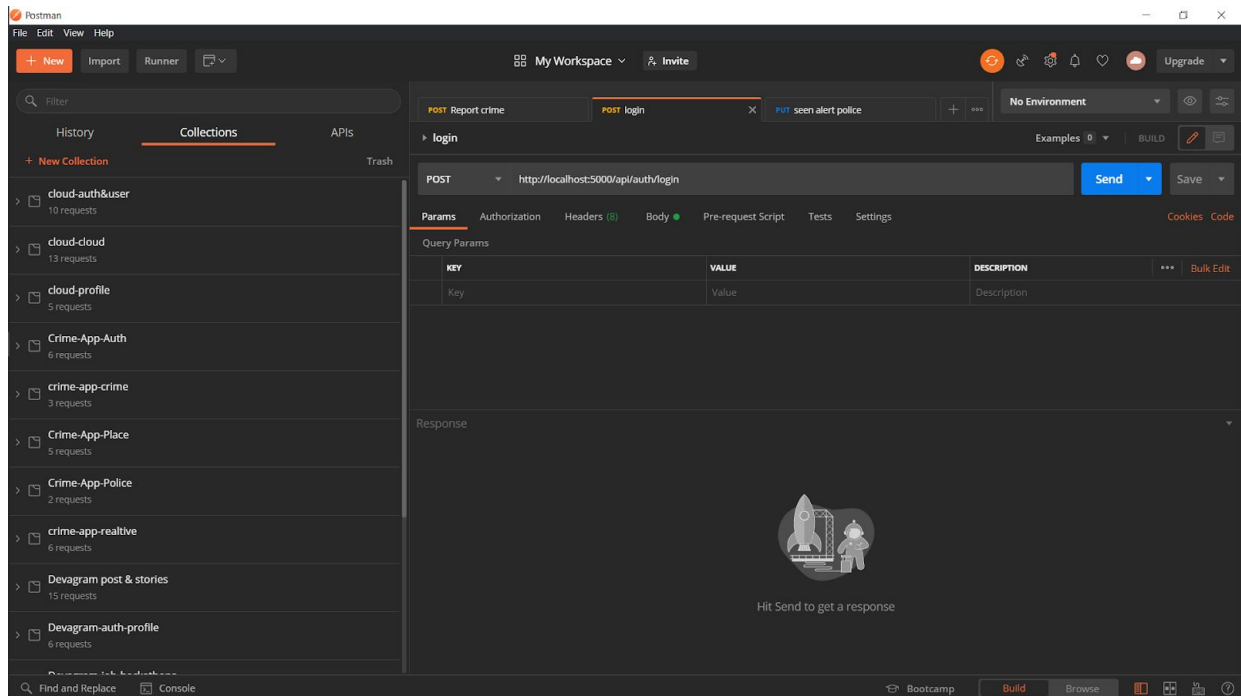
5.1 Modules created and brief description of each modules

5.2 Function prototypes which implements major functionality

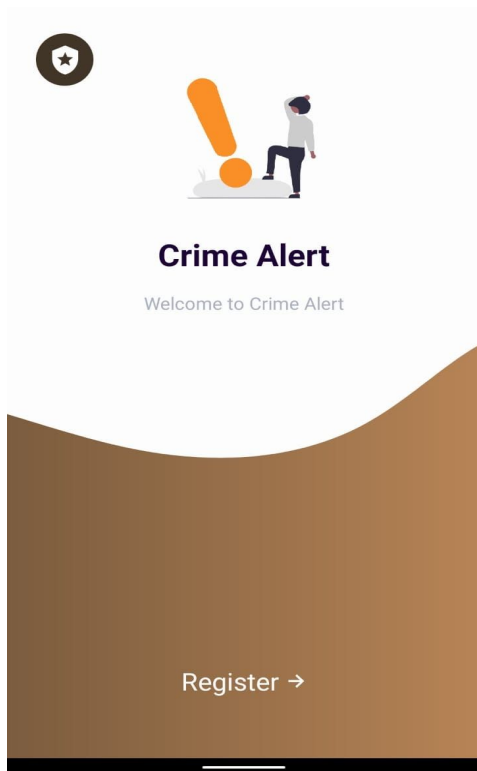
5.3 Algorithm/Flowchart with examples

6. Testing

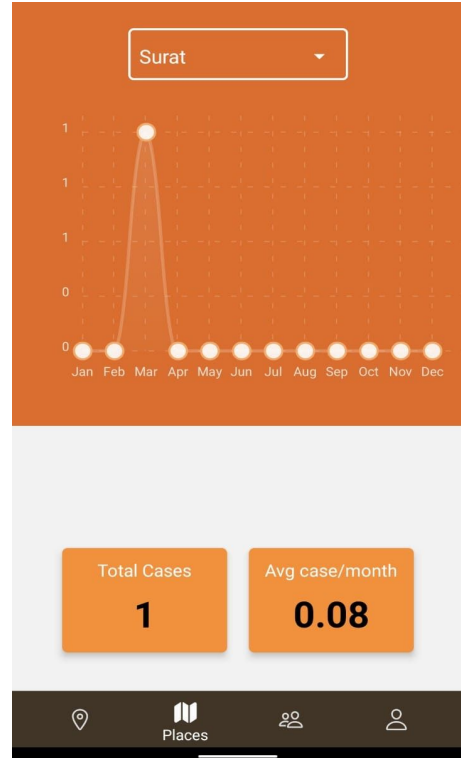
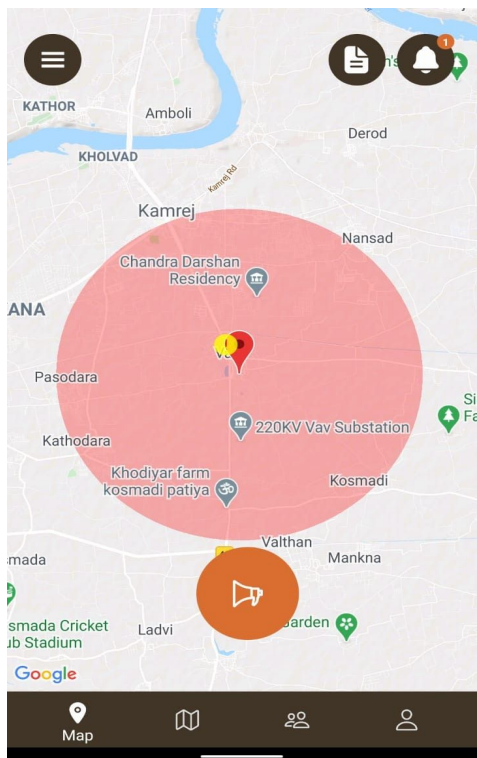
- We used Postman to do backed API testing



7. Screen Shots



The register screen has an orange background. It includes a header with an illustration of a person sitting on a large orange exclamation mark. The title "Register" is at the top. Below it is a form with fields for "Firstname", "Lastname", and "Email". A blue arrow button is on the right. At the bottom, there is a link: "Already have an account ? [Login](#)".



Profile

MD

Manan Desai

Edit Profile

User Details

Manan

Firstname

Desai

Lastname

manan5401desai@gmail.com

Email

9426115401

MobileNumber

Profile

Relative

+

1

Manan Desai

9426115401

manan5401desai@gmail.com

Relatives

Police Stations

Police station

Address

Contact

Show Location

Begumpura Police Chowki

Address

Contact

Show Location

Katargam Police Station

Address

Contact

Show Location

Pandesara Police Station

Address

Contact

Show Location

Police Motor Transport Department

Address

Contact

Manan Desai

Edit Profile

Account

+91 9426115401

Tap to change mobile number

manan5401desai@gmail.com

Email

Kamrej - Kadodara Rd, Vav, Gujarat 394326, India

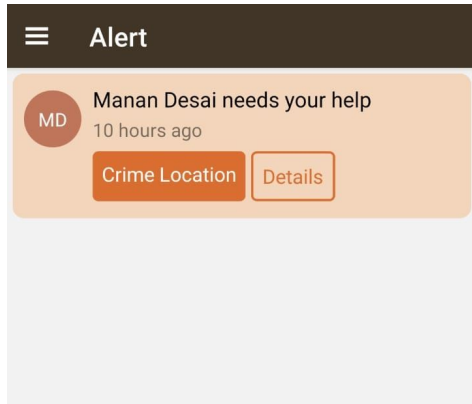
address

Settings

Sound and Notification

Send notifications to?

Profile



8. Conclusion

9. Limitation and Future Extensions

10. Bibliography

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- [Node.js](#)
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- [MongoDB](#)
- [Animations · React Native](#)
- [Google Maps Platform API](#)
- [React Navigation](#)
- [@expo/vector-icons](#)
- [nodemailer - npm](#)
- [Expo — Push notification tool](#)
- [Twilio - Message Sending API](#)