



# Road Accident Safety System

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## Introduction

In India there are many deaths, approximately more than 1.5L deaths due to road accidents and this rate keeps increasing year by year and the main reason behind this is lack of accident prone area caution boards. So the main question is that what safety measures can be taken besides maintenance of roads and caution boards.

So we have developed an application which provides users with safety assistance while driving and also provide important features in case of emergency.

The main purpose of this application is to help the citizens to drive safe home. This can be achieved by providing alerts with information about accident prone areas in advance to the users, based on their moving Location. Also, the accident details database can be used for several purposes.

## Idea and Method

Basically the idea of "Road accident safety system" is to help the citizens by using a mobile application regarding safety alerts while moving on the road based on the location and if the accident occurs it also provides the help feature which will send message or call to the predetermined persons. This application shows the heat map of accident points.

This Application works only with Mobile Data / Wi-Fi and also user needs to activate the Location / GPS Settings for getting the Accurate Point in the Map and also to get alert about accident prone area the application must be running in foreground.

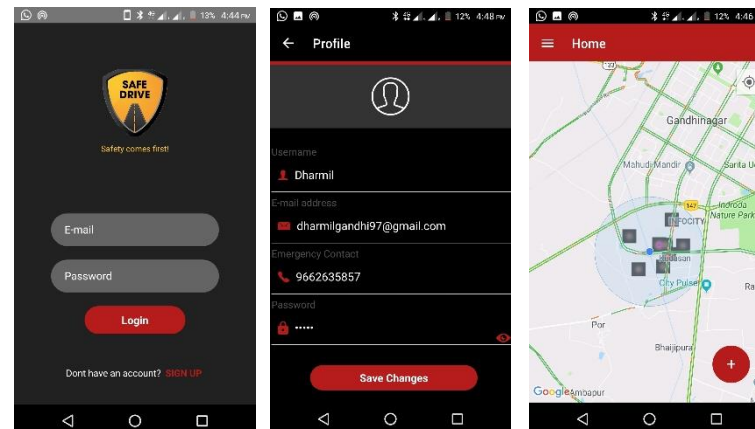
The need to develop two separate applications ( Android and IOS ) serving same purpose is not a trend now. Thus, we decided to develop 'Road Accident Safety System' such that same code runs both for Android and iOS. This can be done using React Native framework which allows common development. React library is developed by Facebook. React native is a framework which uses react.

## Implementation

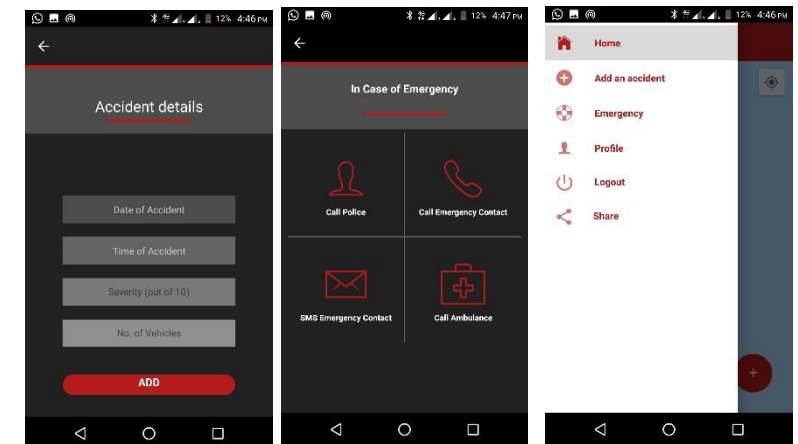
Main Components of our system are:

- Login and Sign up
- Heat map screen ( Accident Regions )
- Alert system
- Add Accident feature
- Emergency service
- Drawer navigator

Once the user is logged into the system he can see his current location in the map. Now, whenever accident occurs with him or he saw an incident occurred , he can add an accident to the specified location and enter details of the accident. Heat map of accident prone areas can be seen on the screen. Once logged in , profile of user can also be seen and details can be edited.



While user is on the road and he is approaching an accident prone area, then an alert will be shown on his screen along with vibration. We have also implemented emergency service in which features like call ambulance, call police, call emergency contact and message emergency contact are present.



## Technology Stack

- UI Design : React Native and Native Base.
- Backend : PHP for handling web interface.
- Database : MySQL (used 000webhost for real-time web hosting).

## Future Scope

- Apply the neural networks clustering algorithm like K-means etc. for finding the efficient Accident prone area.
- We can provide the feature in which user enters the starting point and destination point and application shows the different paths with number of accidents occurred in each path.
- We can also extend same concept to women safety with heat map showing intensity of unsafe areas during night.

## Links

1. GitHub Link:  
<https://github.com/pdhruv1109/SafeDrive>
2. GeeksforGeeks Link ( App is selected in top 15 projects from all india in Pro Geek Cup 2.0)  
<https://www.geeksforgeeks.org/project-idea-road-accident-safety-system/>

Guide : Prof. Naresh Jotwani