

Mini Project Report On

“DriveSafe”

**submitted in partial fulfillment of the requirements for the award of
the degree of**

BACHELOR OF ENGINEERING

(Computer Engineering)

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UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that the project entitled

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is a bonafide account of the work done by him/her under our supervision.

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Acknowledgment

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Lastly, I thank almighty, my parents and my classmates for their constant encouragement and technical help without which this assignment would not have been possible.

Abstract

According to the Ministry of Road Transport and Highways, 150,785 people were killed and another 494,624 were injured in 480,652 road crashes in India in 2016. The National Safety Council reports that cellphone use while driving leads to 1.6 million crashes each year. Nearly 330,000 injuries occur each year from accidents caused by texting while driving. Distracted driving has been identified as an important risk factoring road traffic injuries. In 2015 alone, 3,477 people were killed, and 391,000 were injured in motor vehicle crashes involving distracted drivers. Mobile phone usage has developed into a primary source of driver distraction as it can induce drivers to take their attention off the road, thus making vehicle occupants more vulnerable to road crashes.

To minimize the risk of accidents caused due to the use of cellphones while driving, this application uses a variety of strategies to keep the driver's eyes on the road. The application incorporates various features that makes it the best partner for every road trip.

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Introduction

Motivation:

To overcome the problem regarding accidents caused due to handling of phones while driving, we propose a Drive Mode Road Safety Android Application. A modern survey says that 75% of Indian population uses Android smartphones. So, considering that, we have created an Android application that will help to minimize the risk of accidents caused due to the use of cellphones while behind the wheels. This application uses a variety of strategies to keep the driver's eyes on the road. The application incorporates various features that makes driving safe.

Problem Statement:

To develop an android application that will block all incoming calls while user is driving and send autoreply to caller and help the user in tracking his/her previous ride details.

Objectives

- 1. To develop an application that will block all incoming calls while the user is driving.**

All the calls and messages will be blocked when speed reaches 20km/hr.

- 2. To auto enable the drive mode when the speed exceeds 20kmph.**

The drive mode is automatically enabled after the speed reaches above 20km/hr.

- 3. To setup auto reply to text messages while driving.**

Set up auto reply text message.

- 4. To facilitate Emergency Call for the callers.**

Add numbers in emergency contact list.

Methodology

1. Calls and message blocking:

- All the calls and messages will be blocked when speed reaches 20km/hr.
- In order to prevent any distraction while driving.
- An overlay is added to the screen in order to prevent any interaction with the Mobile.

2. Drive mode is disabled.

- This is to ensure that the driver does not miss any calls or messages that he received while the drive mode was enabled.

3. Auto enable drive mode:

- The drive mode is automatically enabled after the speed reaches above 20km/hr.
- This is to ensure that driver does not have to enable the drive mode every Time.

4. Auto reply text message:

- Set up auto reply text message.
- The caller is notified with the auto reply text message that the driver had set Previously.

5. . Emergency caller:

- Add numbers in emergency contact list.
- Caller from emergency contacts will be able to call driver

Software and Hardware Requirements

Technology Stack:

Technology used in Android app

- Google's Android API
- Android API provided in open source tools like Android Studio and Eclipse will be primarily used to develop the GUI presented to the user.

Technology used in Auto Enable Drive Mode

- Google's Maps API
- Google's Map API for android makes use of Google play services Present in an android phone to develop location aware app.
- In our app, the Google Maps API is used for determining the speed of The moving vehicle.

Technology used for emergency contact:

- SQLite Database for storing contacts.

System Requirements

Software Requirements	Android version 5.0 & above
Hardware Requirements	RAM 1GB (min.)

Implementation Details

Architecture:

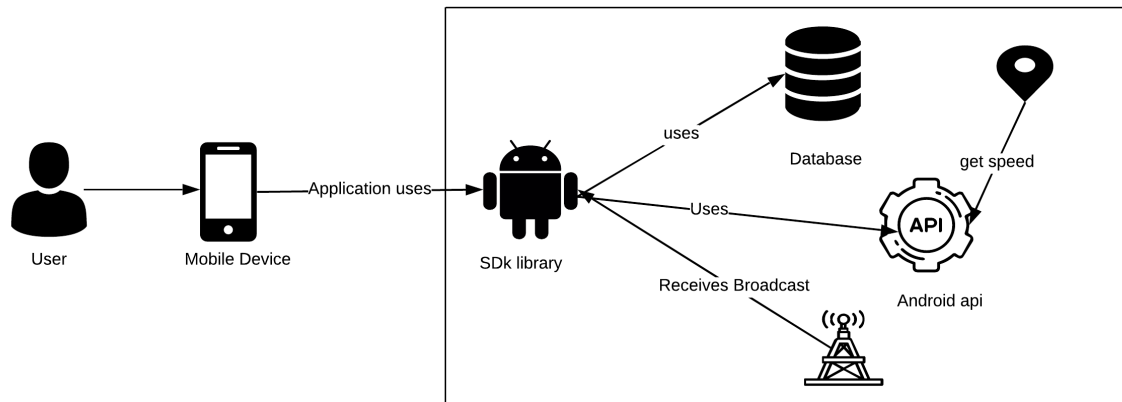


Fig 1.1 Basic Architecture

1. Drive Mode Enable:

There are two ways to enable drive mode.

1. Enable drive mode manually –

This can be done by clicking ‘Drive mode enable button’.

2. Automatic drive mode –

If you want drive mode to enable automatically after speed reaches 20Km/hr, you have to enable a switch.

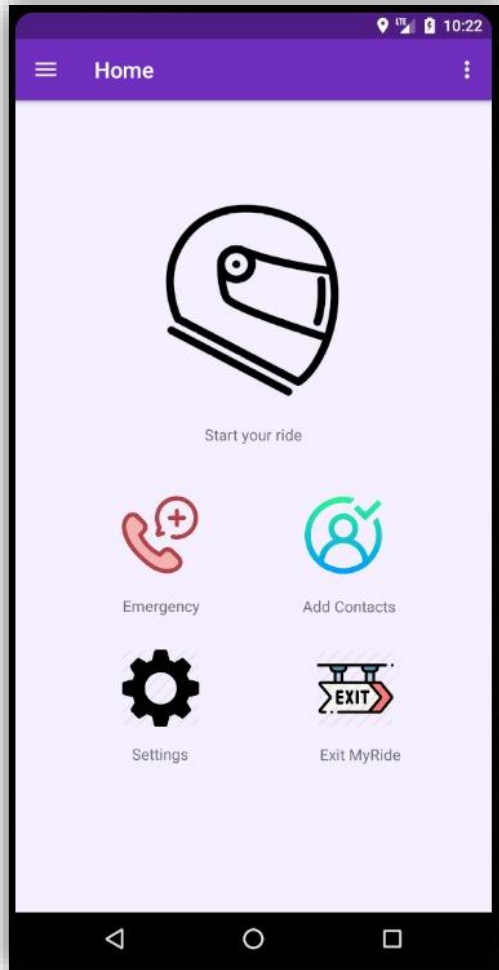


Fig. 1.2 Home Page

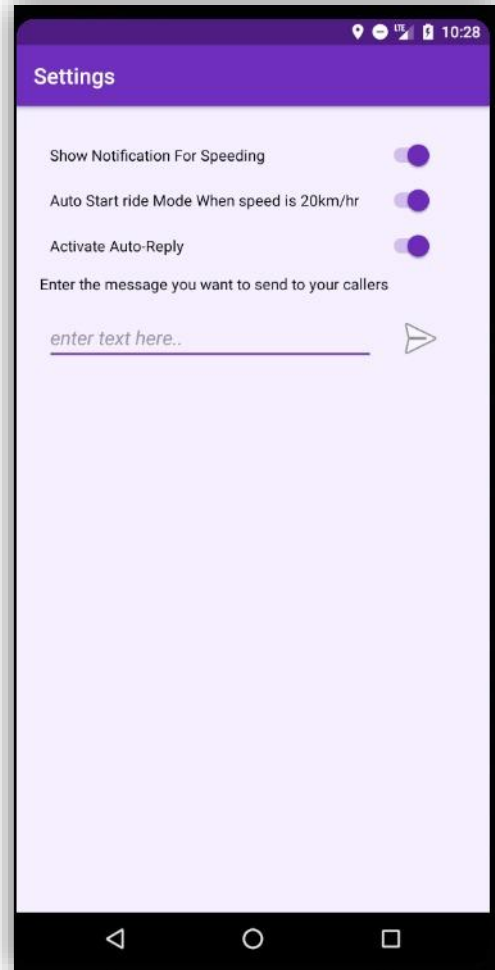


Fig. 1.3 Settings

Drive mode Enabled:

After that drive mode get enable. In drive mode all the calls will get blocked and auto reply is send to caller. If the caller is in the list of emergency contact that call only get accepted.

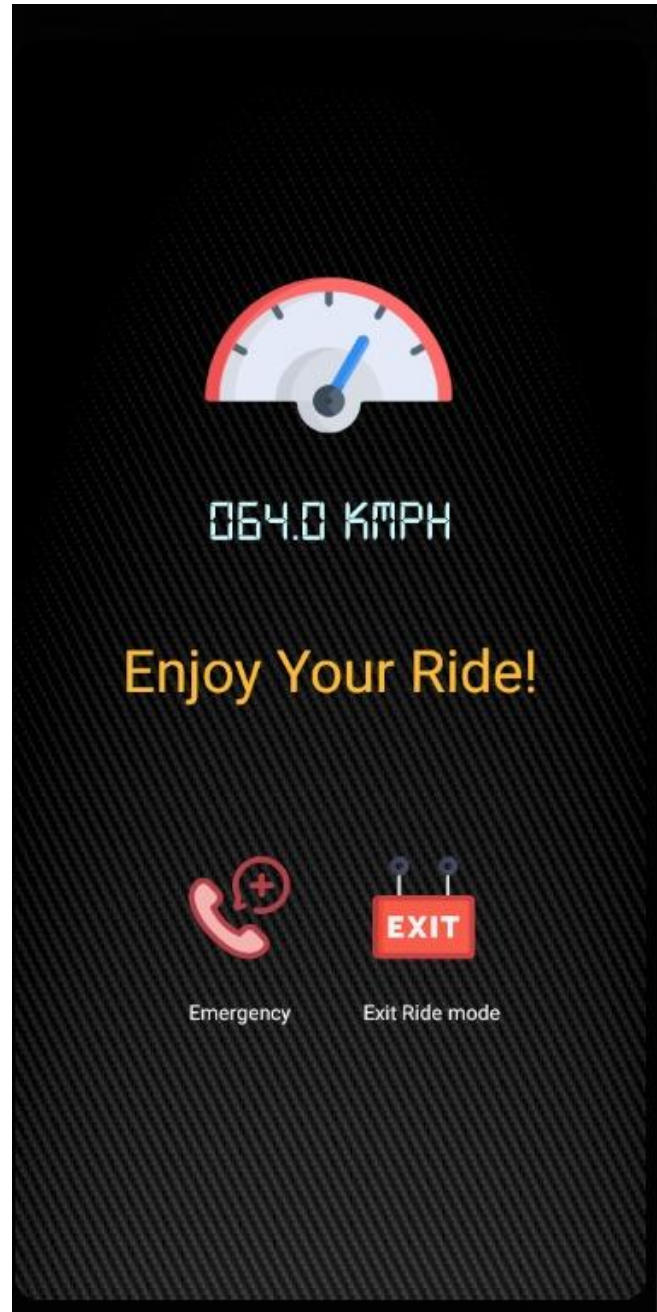


Fig. 1.4 Drive Mode Enabled

2. Auto reply Text:

There is facility to write your own reply message. You can write your own reply message and save it, so in drive mode caller will receive auto reply message that you set.

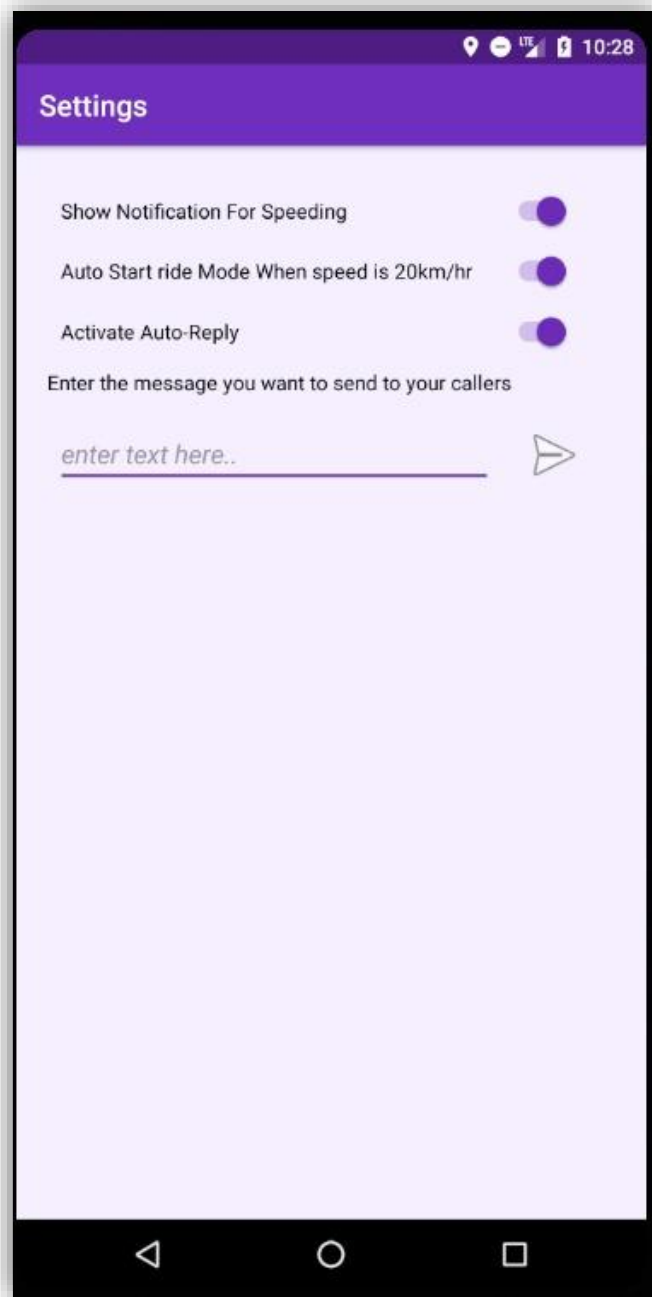


Fig. 1.5 Auto Reply

3. Emergency contact:

User can add emergency contact number. If caller is from emergency contact list then that call does not get rejected. To store emergency contacts we used SQLite database.

User can Add contacts and delete contacts as well from emergency list.

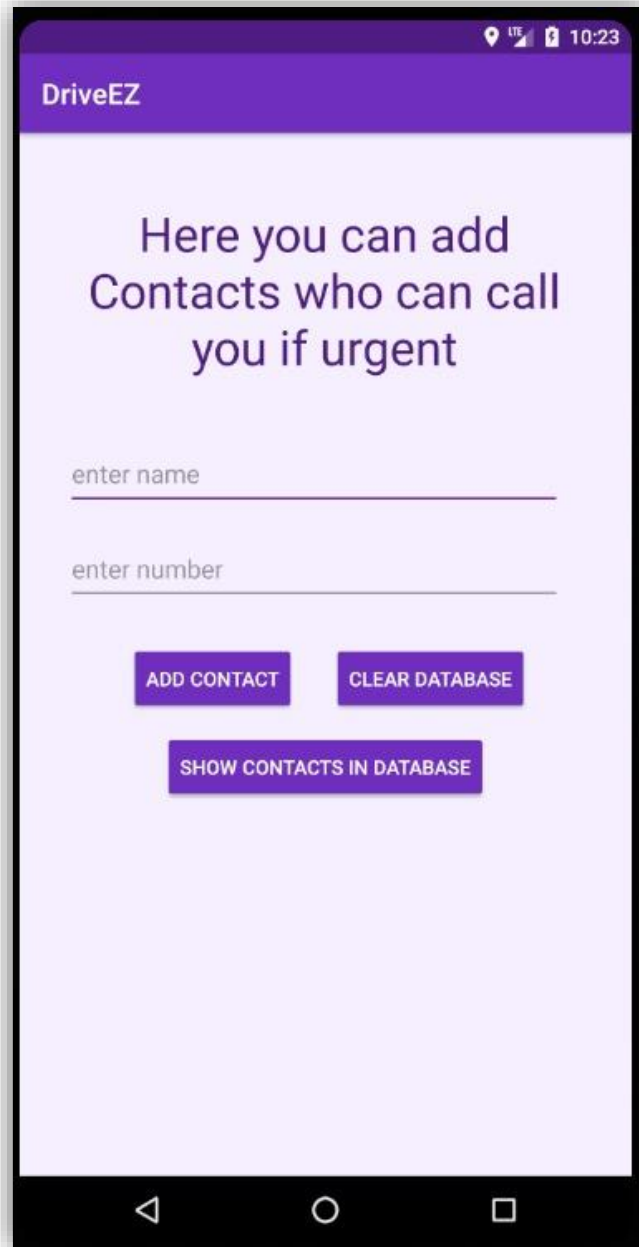


Fig. 1.6 Emergency Contact

4. Additional Functionality:

User will be able to dial emergency number while ride mode is ON • If speed is greater than speed limit then user will be notified using vibrations and visual notification. • User will be able to keep track of his previous ride information. • User will be able to decide his own preferences. 1.2.2. Technical Aspects: • In this Project we used BroadcastReceiver and Location Manager class of android Software development kit so when an event of increase in speed and change in location is occurred then automatically Ride Mode will be turned ON. • Using BroadcastReceiver when call is incoming the event will be caught and then by using SMS Manager text reply will be sent. • We used database to store previous ride data and

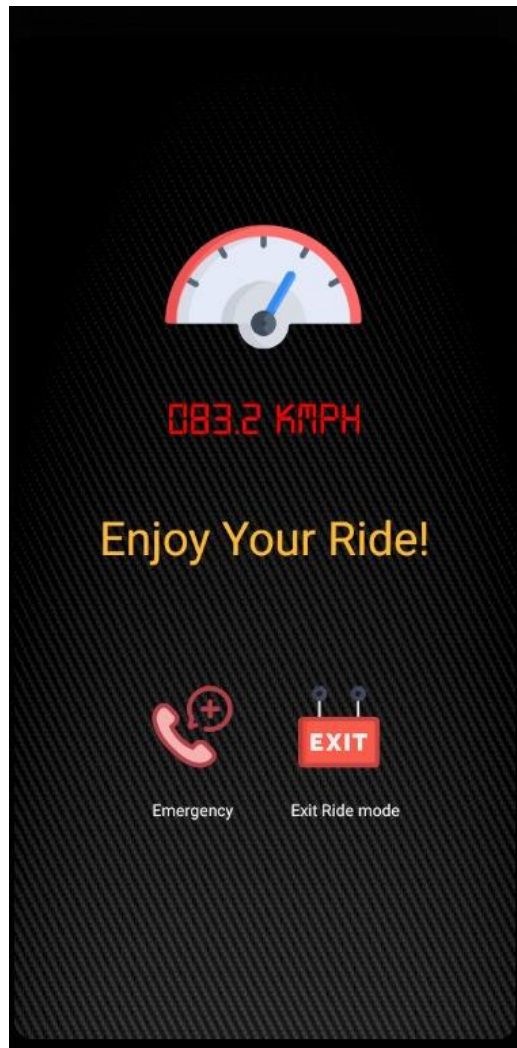


Fig. 1.7 Speed Above limit

5. Previous Ride Details:

After the ride ends the user will be able to see previous ride details like average speed and time taken for ride.

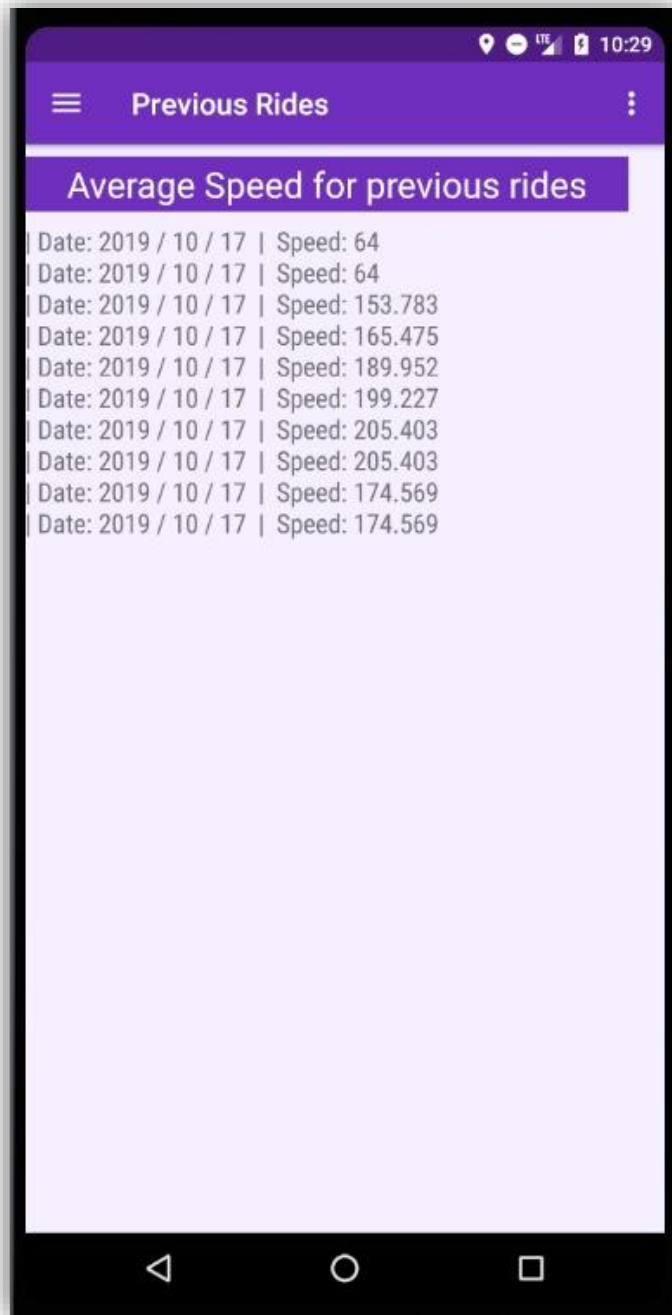


Fig. 1.8 Average ride details

Diagrams

Entity Relationship Diagram:

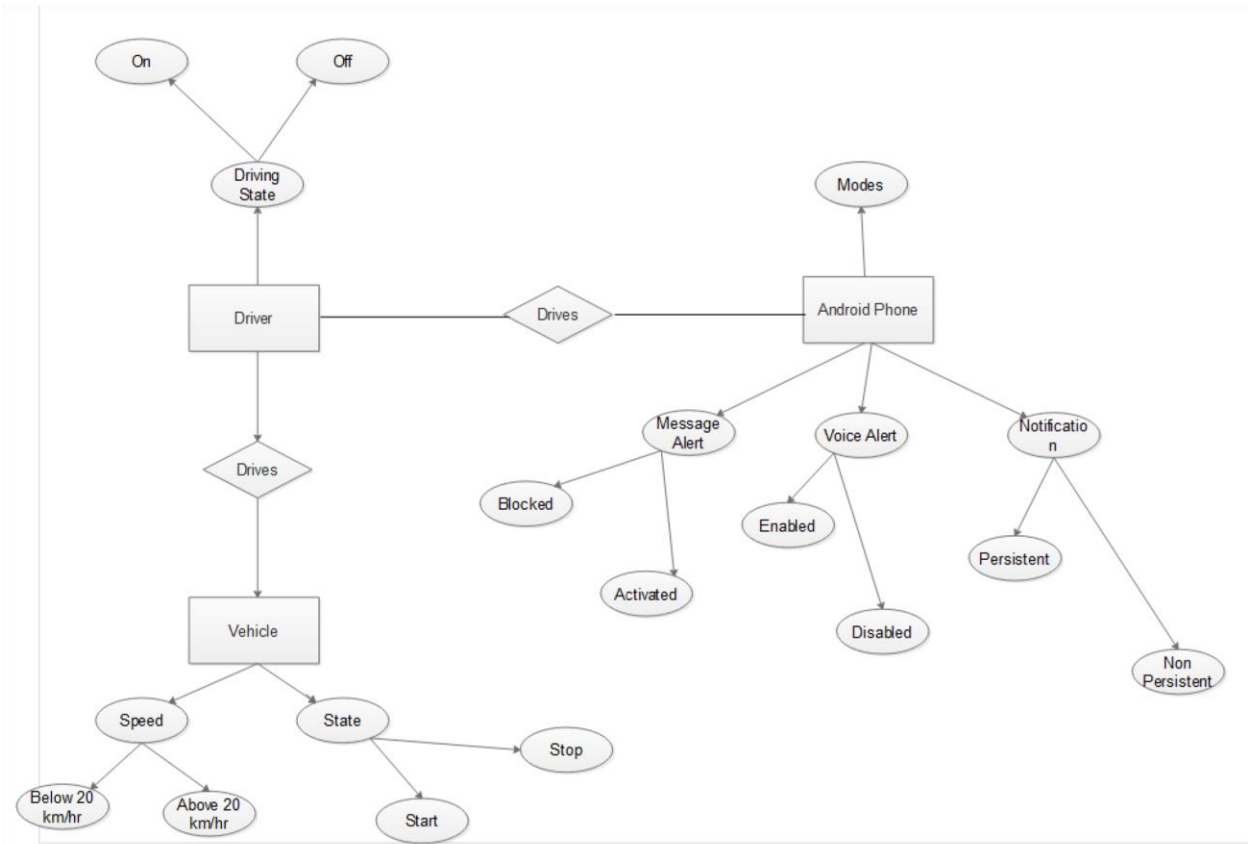
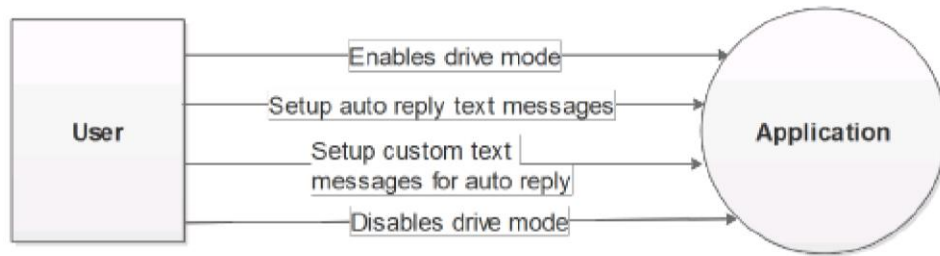


Fig 2.1 E-R Diagram

Data Flow Diagram:



Level 0 DFD

Fig 2.2 Level 0 DFD

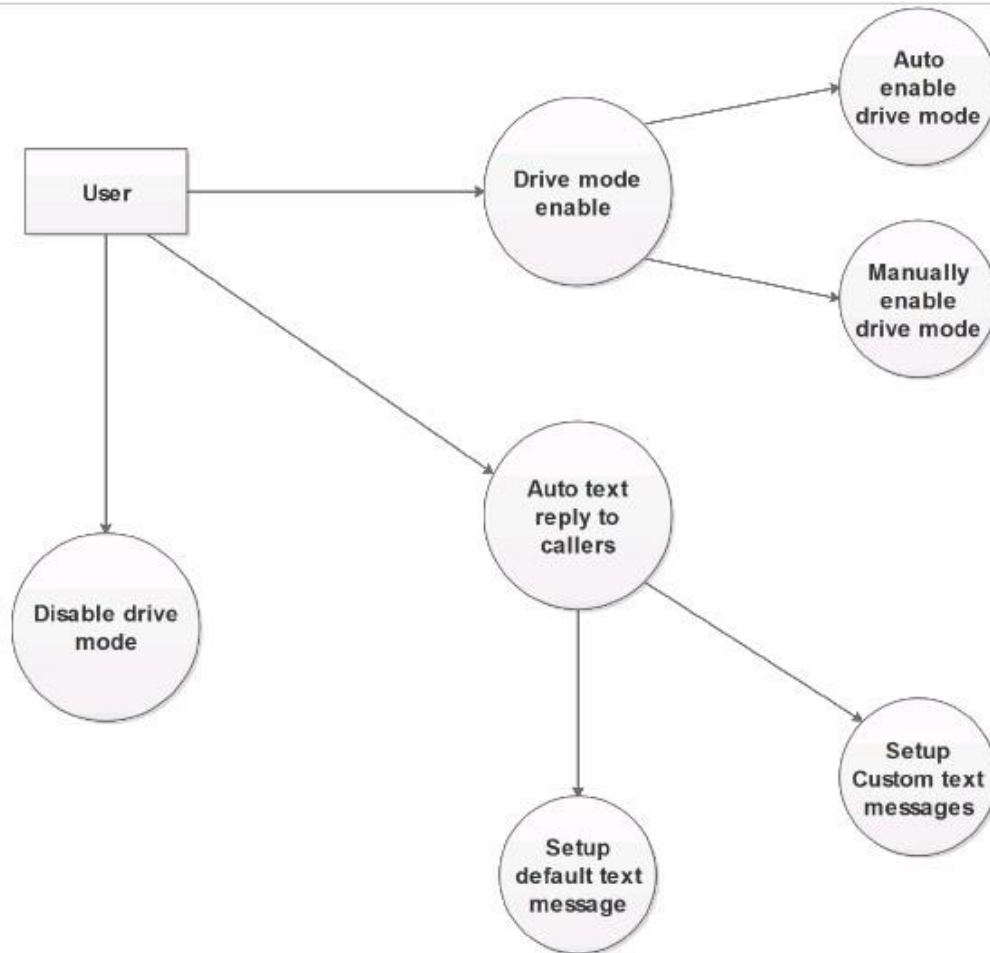


Fig 2.3 Level 1 DFD

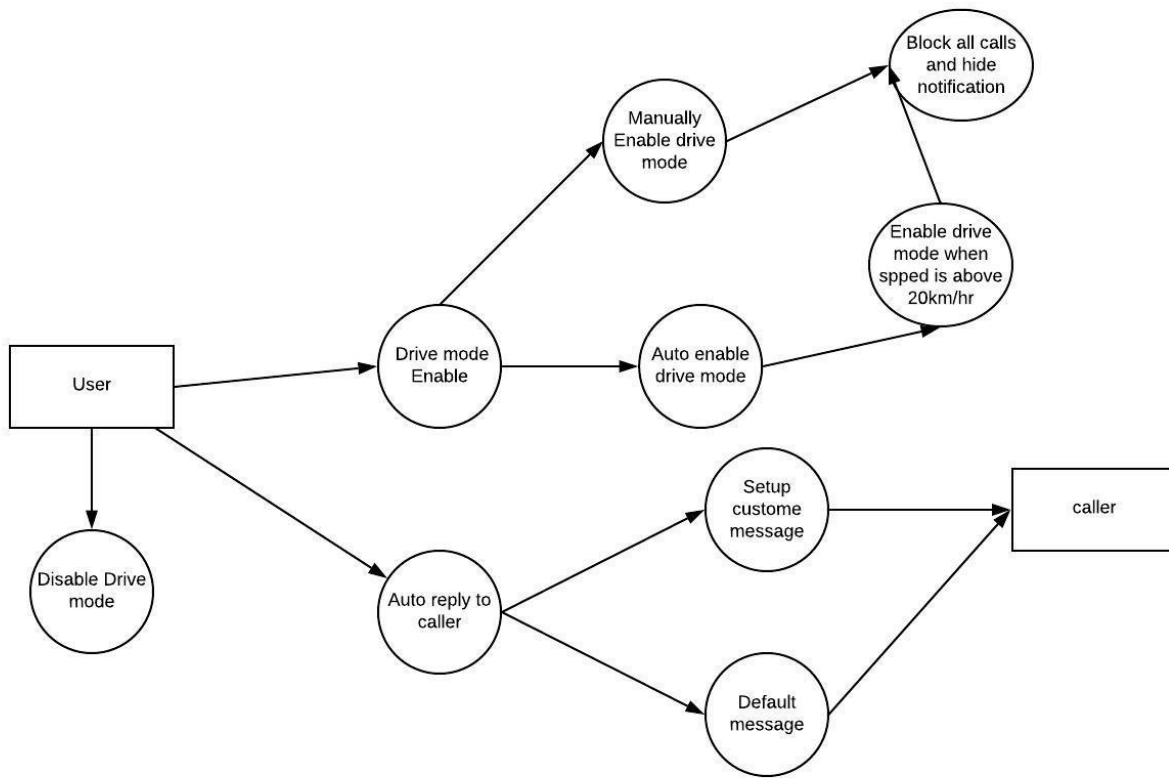


Fig 2.4 Level 2 DFD

Future Scope

1. Android wear support
2. Parental Controls i.e. Parent will be able to keep track of speed of their children's driving.
3. Car mode with navigational features. Fuel tracking based on distance travelled and speed

Conclusion

Hereby, as far as our knowledge of this project goes, we assert that the mini-project on Successful implementation would help the drivers to drive safely without any distraction. This will help to reduce accident percentage and help in road safety.