



Be safe, An application to reduce the traffic violations by warning the driver

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Introduction

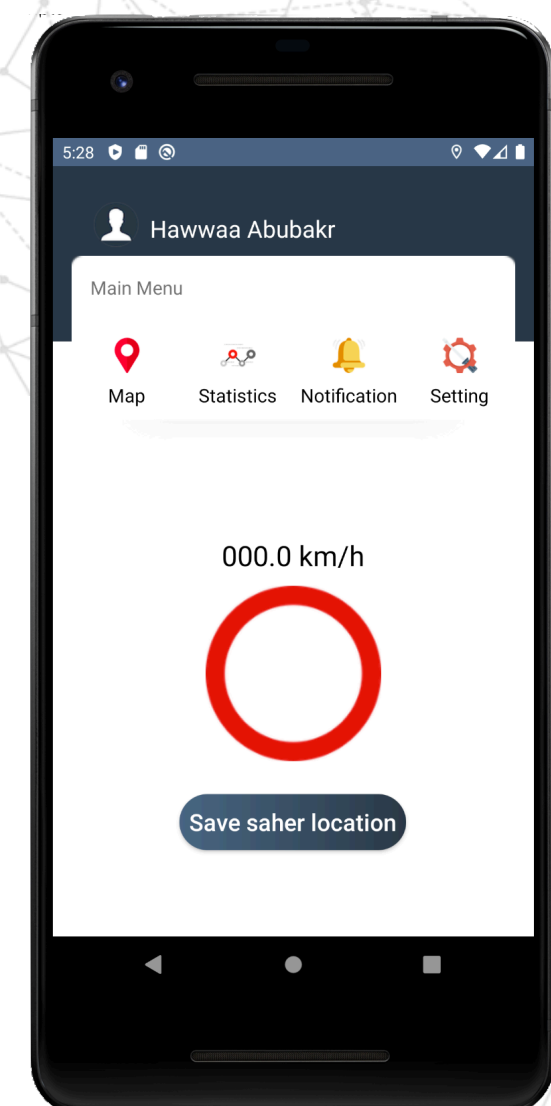
Traffic deaths and serious injuries have been on rising in Saudi Arabia and many countries for the last few years, car crashes remain the number one cause of death for adolescents and the most common critical error driver make that lead to serious crashes is driving too fast.

Purpose of project

We are developing an application called Be Safe that alerts drivers about traffic violations. The main features of our application are:

- Altering drivers to keep driving safe if they exceeds the speed limit or in bad weather conditions.
- Gets feedback about his/her driving skills.

Our team would like to play a part in the impact of Saudi Vision 2030 that seek to solve a local issue by enabling healthy lives and improving the quality of life by enhancing irrigated safety.



Aims and Objectives

1- Improve the driver's skills: Warning will make the driver drive legally. So, the feedbacks in the application will give the drivers an overview about their drive skills and how to improve it.

2- Reduce the probability of car accidents and driver violation ratio: The application will send a warning to the driver, if he/she exceed the speed limit

3- Reduce economic cost for governments and car drivers: If the application warns the drivers about their violation while driving, it will make the drivers less riskless

4- Other companies can view the driver's monthly reports to see the quality of his/her driving skills.

5- Help to drive safely in bad weather conditions: The application will notify the driver about the weather in case the weather states in dangerous, it will suggest safe speed limit

Materials and methods

Compare car speed with road speed: compare car speed and the road speed, in case the car speed was larger than road speed, the app will send an alert(sound) to the driver to slow down, and the comparison process is repeated every five seconds.

View Saher location: The user can save Saher location on the database when he/she click on the "Save Saher location" button. After store Saher location on the database, if the user opens the map page the application will show the user location besides all Saher locations and view it on the map.

Compare the weather (weather method): get the current state of weather and compare with the weather that in database we choose(Rain and Dust statues) ad include (Clear and Clouds statues for test purpose). Then, calculate the third of the car's speed which is the safe speed in bad weather condition. The process of computation is done in steps: Simple example(suppose car speed is 90) >> $90/3=30$ >> car speed = $90-30=60$

view statistics: the user can view statistics when he/she press statistics button , then view it as charts . Our application provides two types of statistics:
1- view number of increase speed limit per day
2- view car distance per day

Results

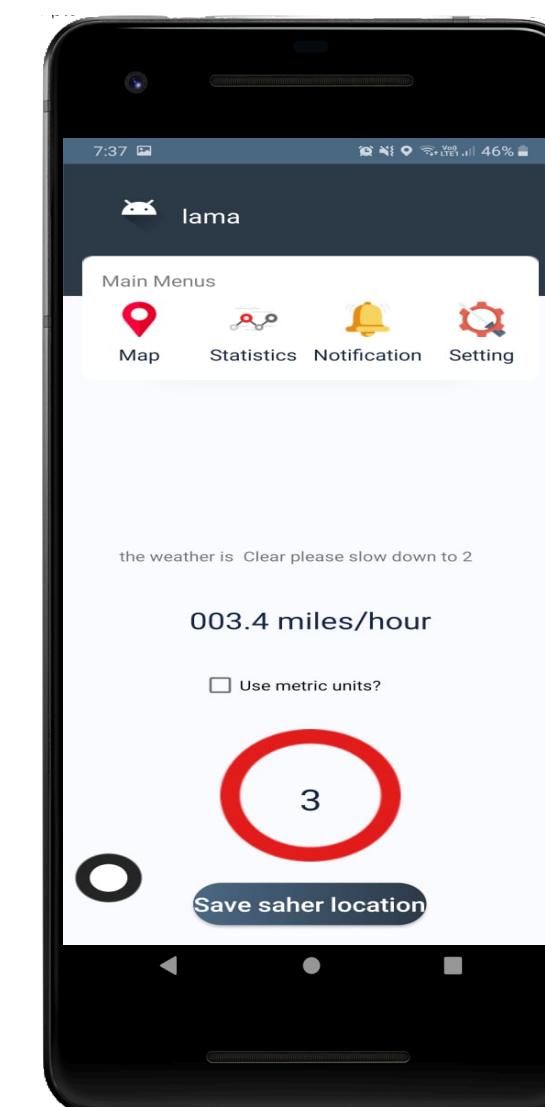


Figure 1

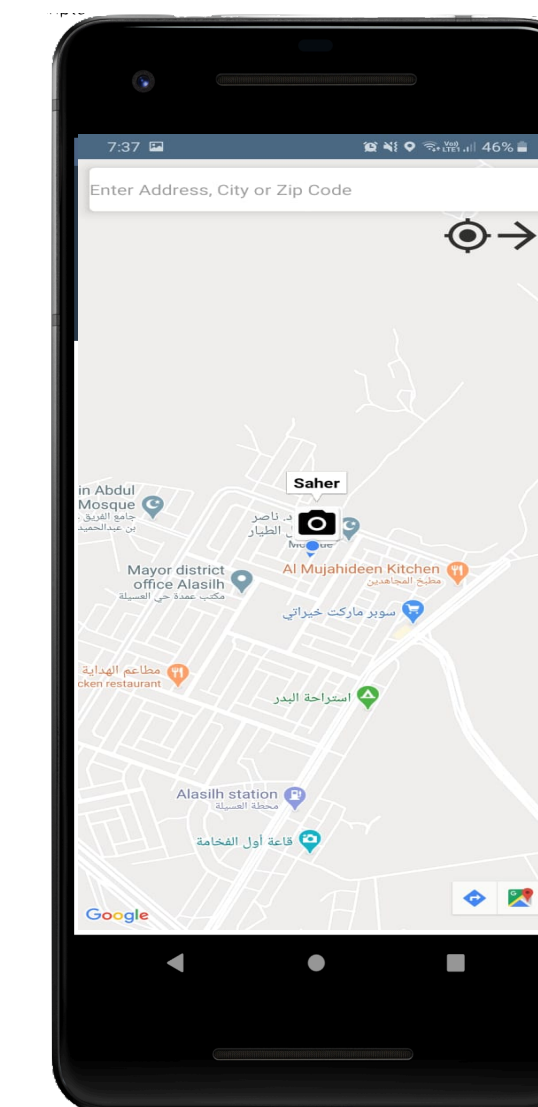


Figure 2



Figure 3

Figure 1: The main page will include the speed of the car and the weather information.

Figure 2: Map page will view all Saher locations to the user.

Figure 3: Statistics page will show the number of increase speed limit per day and view car distance per day

Development tools



Future work

- Install and view the application in the car screen system.
- provide solutions for the problems the driver could face.
- View the location of a group of cars if they are going together to the same location.
- Determine the distance between two cars and alert the driver if he/she exceeds the safe distance.

Conclusion

This project was developed to help the save driving in the streets and that will be accomplished by warning the driver about the high car speed , suggest a safe speed to the driver in bad weather conditions and view the driver statistics.

References

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