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# Wireless detection and alerting of rash driving and accidents using smart device

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## ABSTRACT

***Rash driving is most dangerous for people. Risky driving primarily includes heavy driving under the power of alcohol, is the major grounds of traffic accidents throughout the world. They provide an early detection to alert the dangerous vehicle maneuvers related to rash driving. There are lots of sensors used in various techniques to detect the rash driving. For this entire detection of rash driving, we require only a smartphone. We are going to use accelerometer sensor on the smartphone. After installing a program on the mobile phone, it will compute acceleration based on sensor readings and compare them with typical unsafe driving patterns extracted from real driving tests. The application allows the owner to track their cars. This application sends a notification to owner mobile regarding the car rash driving if any. It also sends the location of the car to the owner after every ten minutes. We can change this time interval.***

**Keywords:** *Accelerometer sensor, Rash driving Detection, Android-based smart phone with GPS.*

## 1. INTRODUCTION

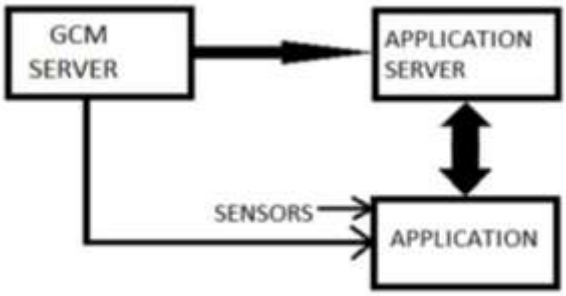
In India an increasing number of vehicles on the roads, in recent past, have led to an increase in the number of road accidents. They have been alarming statistics regarding the number of road accidents. There have been alarming statistics regarding the number if accidents per day in India .A large number of people have died in India due to the increase in the number of accidents. Bad driving .lac of traffic control, and poor road conditions are the main reason for this. In this system we present a mobile phone application that uses combination if in-built sensors GPS, micro-phone and accelerometer, to detect driving behavior. This project is based in android mobile application which makes use of android sensors in order to detect rash driving patterns also accident cases. In this project we make use of latest android technologies which will directly communicate with our server and send alerts to admin user Admin can easily track the car which was added in his/her account. This system uses GCM push notification to implement alert system. Also to keep track of car it makes use of GPs system. And here are developing our own server to communicate between client and admin app.

## 2. LITERATURE SURVEY

Various researchers have tried to monitor driver behavior using both dedicated sensors deployed inside car, roadside and Smartphone inbuilt sensors. [1] An android based application has been developed .This application collects data from accelerometer, GPS and also record sounds with help of microphone, and then data is combined and analyzed to detect rash driving patterns. [2] In this they have proposed a innovative application using a mobile smart phone that are integrated inside an automobile to evaluate driver style. they have utilizes three-axis accelerometer of an android –based Smartphone to record and analyze various driver behavior .[3] They have developed an android application which uses data from accelerometer sensor, GPS sensor and video recording is done with help of camera to give rating to the diver. Feedback can be used to aware the driver and improve performance.

## 3. SYSTEM DESIGN




The application will communicate with application server using web services. The Alerts are generated on client device and they are delivered to admin device using GCM. Also application can fetch and send data to application server. The application server act as intermediate between GCM server and our application.

### A. GCM server

The GCM server is mainly used to implement alerts system which is capable of sending small push messages to registered devices.It can also be used as an instant messaging mechanism.

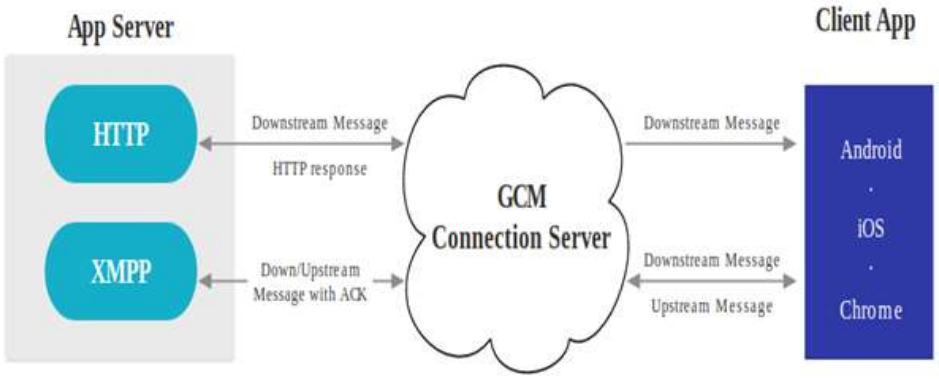
### B. Application server

The application server is a standard server used to establish communication between two devices. It also used to call web services in order to fetch the current location of the mobile device.

### C. Application

This module is installed on android mobile which monitors the driving patterns also send the current location of mobile to the application server.

## 4. GCM ARCHITECTURE




Google GCM connection servers accept downstream messages from your app server and send them to the client app. The XMPP connection server can also accept messages sent upstream from the client app and forward them to your app server.

## 5. CONCLUSION

Driver Behavior monitoring has evolved tremendously in recent years. Driver safety can be enhanced by monitoring driver behavior .recording their aggressive driving events and giving feedback on recorded events. Monitoring driver behavior using inbuilt sensors of Smartphone has been evolving as a new trend because of less cost and considering the fact that many people already own it. This paper surveys various methods of detecting driver behavior. It also presents the challenges faced by researchers in detecting and predicting driver behavior.

## 6. REFERENCES

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