

Monitoring Vehicle Speed using GPS and Categorizing Driver

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Abstract-- The GPS signals got from cell phone gadget will be utilized to screen the individual when he is driving. The directions got from the GPS is put away in the Database. This information is additionally used to screen the speed at which the individual is driving. Data is kept up about every individual and if the individual crosses a limit speed he is ordered as a driver. These way engine insurance agencies can possibly give modified answers for their customers.

Keywords-- Firebase, GPS, Android Studio, Speed calculation

I. INTRODUCTION

Use the data collected by the Smartphone application to categorize the driver whether he is eligible or not eligible for motor insurance. Following driver conduct brings down upkeep costs, diminishes your vehicle's risk, and encourages you remunerate the correct drivers for their protected driving strategies. It likewise causes you center you're driving instructing endeavors around the drivers who need it most; notwithstanding pinpointing what zones they explicitly need to work on. No all the more pulling great drivers off the street for superfluous exercises; you know precisely who should be there and who could be out making conveyances.

Utilizing observing framework, chiefs can screen their vehicles and increment the wellbeing of their drivers. Alarms can be set for over speeding, cruel driving and it will educate the directors when a worker drives recklessly. Directors can respond to these circumstances and can keep mishaps from happening. The checking framework additionally gives the drivers intend to raise a caution on the off chance that they end up in any risk. GPS vehicle observing framework can help insurance agencies to improve their client administration. For instance: Office staff can educate directors about the driver if the vehicle is going quick. Likewise, they can react to client inquiries viably. As the representatives present in the workplace have the office to see constant information of driver vehicles, they can distinguish rapidly which vehicle will be most appropriate to go to a client. They are additionally ready to give quick answer and better support of the clients. GPS vehicle checking framework diminishes the measure of administrative work that drivers need to round out. As the checking framework gives point by point data on the

whereabouts of the vehicle, drivers need not enter it on records. This framework builds the exactness of records.

II. VEHICLE SPEED CONTROL SYSTEM USING GSM/GPRS

The work is an undertaking to control the speed of the vehicle arranged with PC programming to engage the untouchable or owner to get the region, speed and activity of the driver. To achieve this, the structure can transmit the information logically. The usage of GSM/GPRS advancements allows the framework to follow the articles and give the state-of-the-art information. This information is endorsed to unequivocal customers over the web as the server gets the information. It is the tele-checking structure to transmit data to the remote customer. As needs be the applications are used persistently traffic surveillance. This paper proposes a model for territory following using Geographical Positioning Global System for Mobile Communication System and Global System for Communicate) development. The progression relies upon the windows phone 8 application by techniques it can give flexibility and transportability to the customer to get the information from wherever. As these GPS propels having progressively significant extent of frequencies, the customer can get the information as speedier as would be reasonable. This structure is useful to speed control at express traffic roads.

III. LITERARY SURVEY

In this section of the related work we describe the existing system, the limitation of the existing system, the earlier version, current version, proposed version, and expected

results of this project. The proposed work is an endeavor to control the speed of the vehicle structured with PC programming to empower the outsider or proprietor to get the area, speed and action of the driver. To accomplish this, the framework can transmit the data progressively. The utilization of GSM/GPRS advancements permits the system to track the objects and provide the up-to-date data. This data is approved to explicit clients over the web as the server gets the data. It is the tele-checking framework to transmit information to the remote client.

In the present time everybody is utilizing cell phones for correspondence. In the meantime Mobile Providers are additionally giving the assortment of administrations to clients. In endeavor to develop this, we propose a GPS based vehicle following framework for an association to discover locations of their vehicles and find their situations on cell phones. The associations are putting cash in observing and following vehicles going for improving administrations and guaranteeing the security in loads transports. The proposed innovation enables associations to follow constant data about their hierarchical vehicle amid movement. Today for neighborhood transport the vast majority use Bus as a medium. Yet, because of their abnormality open countenances different issues like not coming to on schedule, transport disappointment, no appropriate calendar and so forth. By this situation creator has made an Android application which gives the definite area of every single authoritative vehicle. The framework contains single android versatile that is furnished with GPS and GSM modems alongside processor that is introduced in vehicle. Amid vehicle movement its area update can be consistently answered to a server utilizing GPRS administration. This area data will be plotted utilizing Google maps on observing gadget.

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vehicle movement its area update can be constantly answered to a server utilizing GPRS administration. This area data will be plotted utilizing Google maps on checking gadget.

IV. METHODOLOGY

Eleven attributes from Speed Data have been considered to categorize the driver. These eleven characteristics are recorded in Table 1. For effortlessness, These attributes were utilized based on GPS service of a smart phone and firebase.. The data set is used by admin for further categorizing.

Table 1: Attributes of Speed Data Set

S. No.	Characteristics
1	Mail id
2	User id
3	Project id
4	Maximum speed
5	Distance
6	Time
7	Average Speed
8	Eligibility
9	Accuracy
10	GPS
11	Satellites

4.1 AGPS (Assisted GPS) Technology

This is a route innovation giving exact area and data. Saved by the U.S, GPS is a space-based satellite framework, giving contact to anybody owning a GPS bolstered recipient. Begun in 1973 was intended for military reason yet later was taken into consideration business use. The framework comprises of 24 satellites of United States. A GPS recipient computes the radio flags that are continuously sent from the satellites. It quantifies the flag from at least 3 satellites to discover the longitude and scope utilizing different methods. The Global Positioning System (GPS) is a specialized wonder made conceivable by a gathering of satellites in Earth's circle. It transmits exact signs, enabling GPS collectors to compute and show precise area, speed, and time data to the client. GPS is claimed by the U.S.

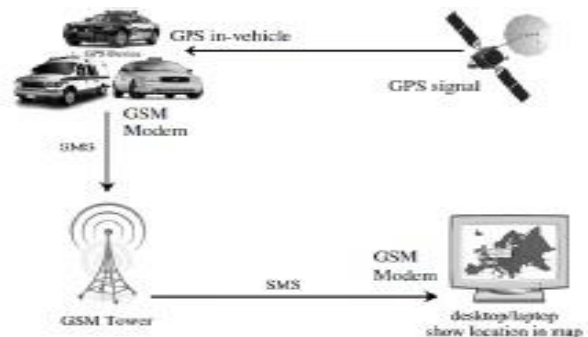


Figure 1. working of GPS and GSM.

4.2 GSM Technology

This GSM innovation was built up in 1982 to build up a typical cell phone standard. Although it takes after the conventional modem, however varies in the manner in which it transmits and gets information. A dial-up modem utilizes phone lines while a GSM modem utilizes radio waves. A GSM modem utilizes directions with each order starting with AT for example Consideration pursued by a character. A GSM modem acquires a SIM (Subscriber Identity Module) and utilizing circuit exchanging sets up a correspondence between two gadgets. When associated steady spilling of information

4.3 Android Studio

To help application advancement inside the Android working framework, Android Studio utilizes a Gradle -based form framework, emulator, code layouts, and GitHub mix. Each venture in Android Studio has at least one modalities with source code and asset documents. These modalities incorporate Android application modules, Library modules, and Google App Engine modules. It simplifies and auto generates Java files, directories (folders), placeholder icons, manifest file, XML files and many other things. It comprises of the considerable number of API required to make an application. It has emulators on which you can test the created application.

4.4 Firebase Auth

Firebase Auth is an administration that can confirm clients utilizing just customer side code. It underpins social login suppliers Facebook, GitHub, Twitter and Google (and Google Play Games). Furthermore, it incorporates a client the board framework whereby designers can empower client confirmation with email and secret phrase login put away with Firebase.

4.5 Real-time database

Firebase gives a real-time database and backend as an administration. The administration gives application engineers an API that enables application information to be synchronized crosswise over customers and put away on Firebase cloud. The organization furnishes customer libraries that empower combination with Android, iOS, JavaScript, Java, Objective-C, Swift and Node.js applications. The database is additionally available through a REST API and ties for a few JavaScript systems, for example, AngularJS, React, Ember.js and Backbone.js. The REST API utilizes the Server-Sent Events convention, which is an API for making HTTP associations for accepting pop-up messages from a server. Designers utilizing the real-time database can verify their information by utilizing the organization's server-side-implemented security rules. Cloud Fire store which is Firebase up and coming age of the Real-time Database was discharged for beta use.

IV. RESULTS AND ANALYSIS

In order to categorize the driver based on his data set which is generated by using an application, which will be running on user's smart phone. It acts like a dual application for both the user and admin, where the user registers and login with their user credentials. Each user is created with a unique id when registered with this application. When the user gets logged in and starts the performance all the values will be calculated. After the completion of the users task, the values generated during the task are stored in the firebase database when the users presses the reset button and the data gets refreshed to initial values. The admin logs in with the Admin id to display the list of all the users. In order to check the eligibility of the user the admin will press on a particular user id and knows the driver category whether he is eligible for the insurance or not.

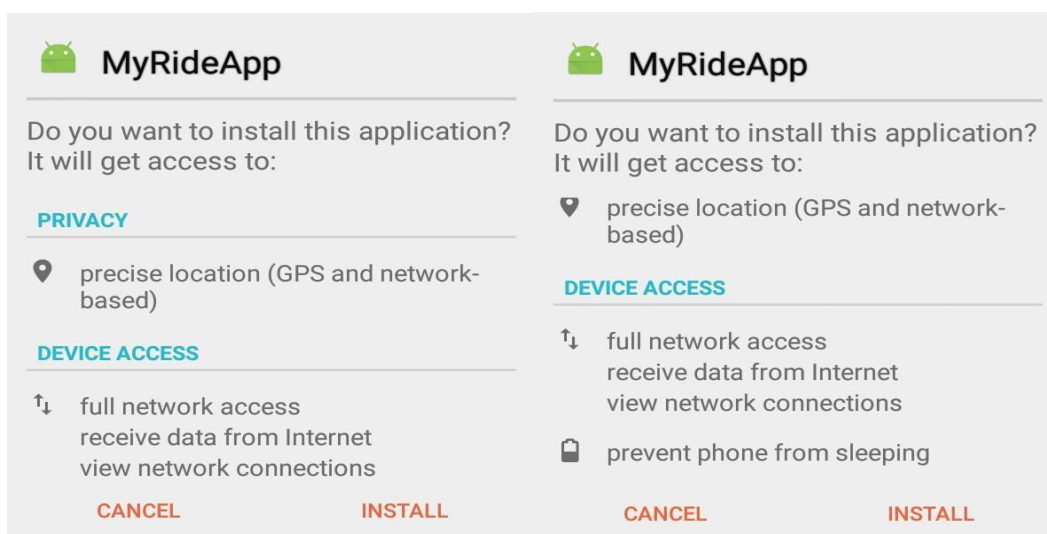


Figure1. Installation of MyRideApp

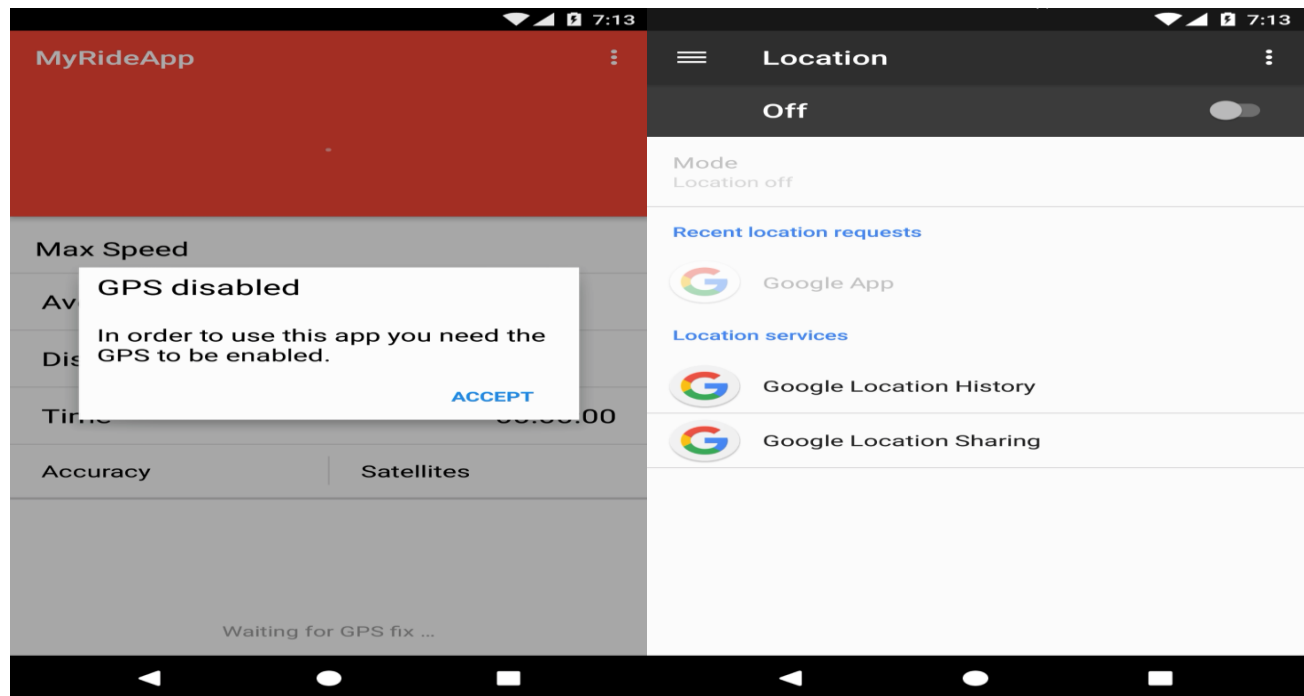


Figure 2. GPS Permission Access

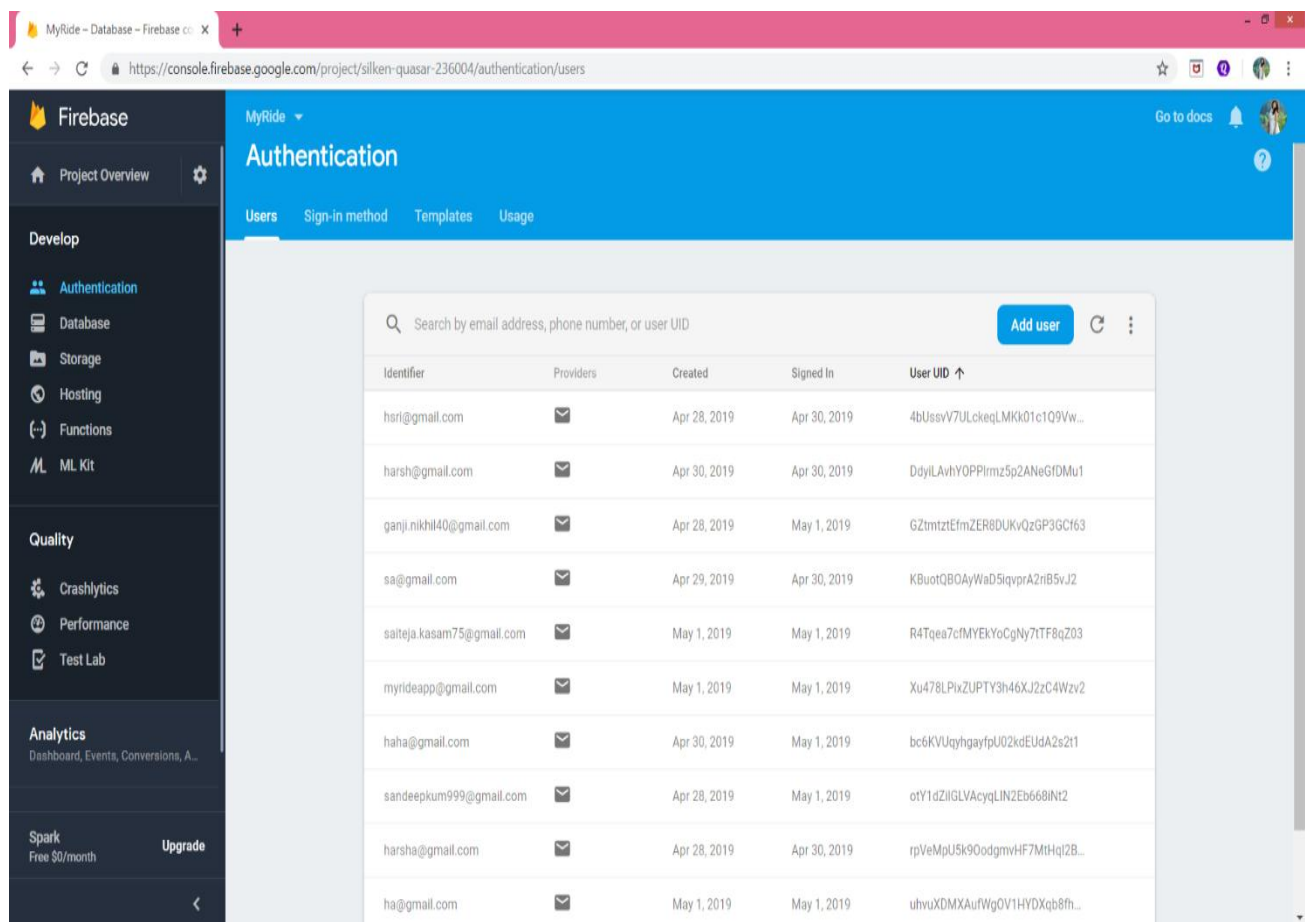


Figure 3. Created User in Firebase

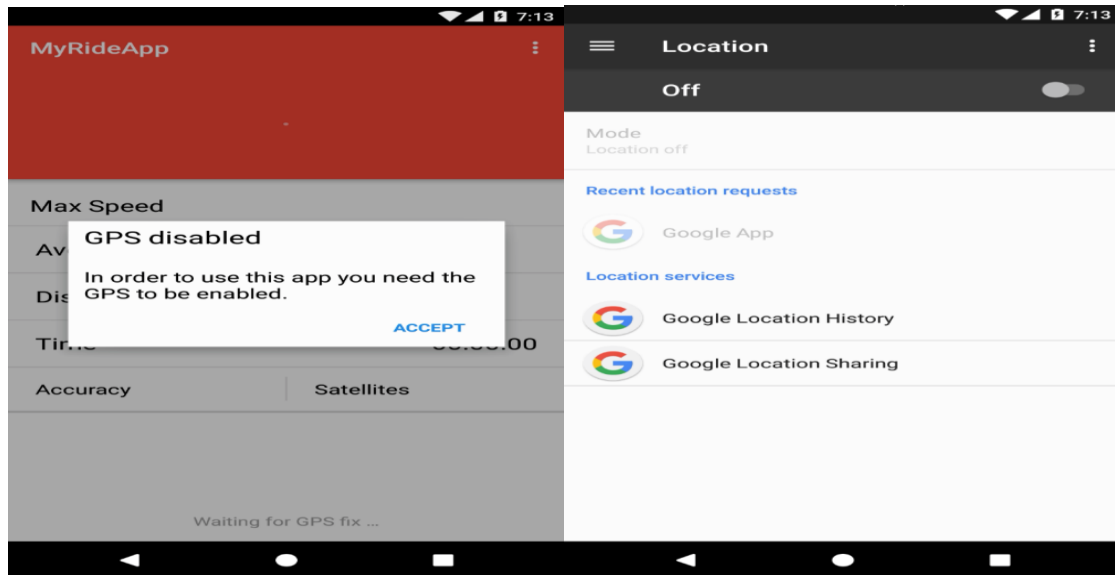


Figure 4. Enable GPS to Track Location and Speed

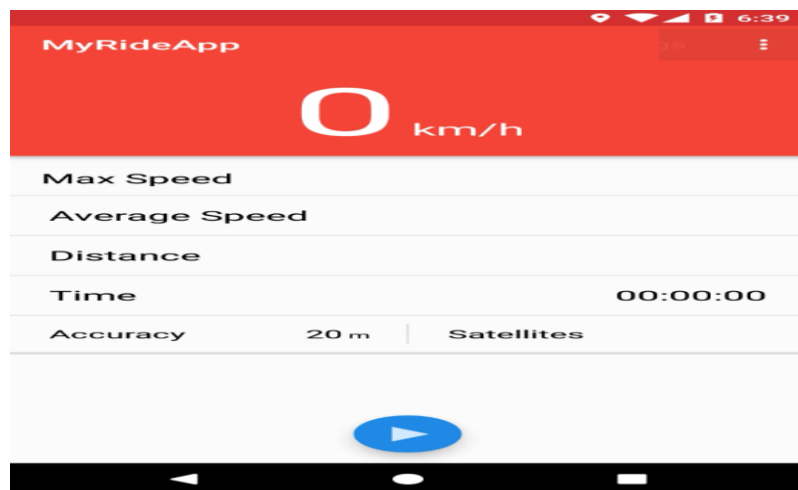


Figure 5. User Performance Activity

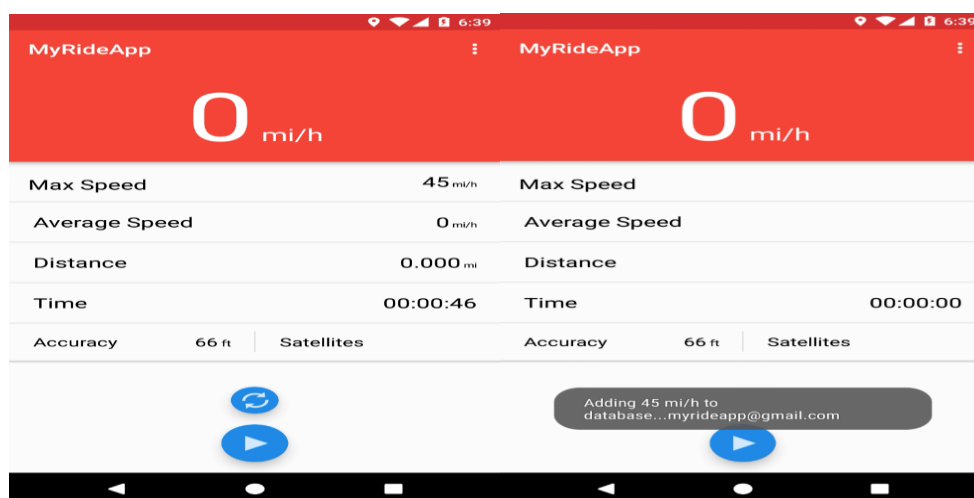


Figure 6. Pause and Reset to add the Performance

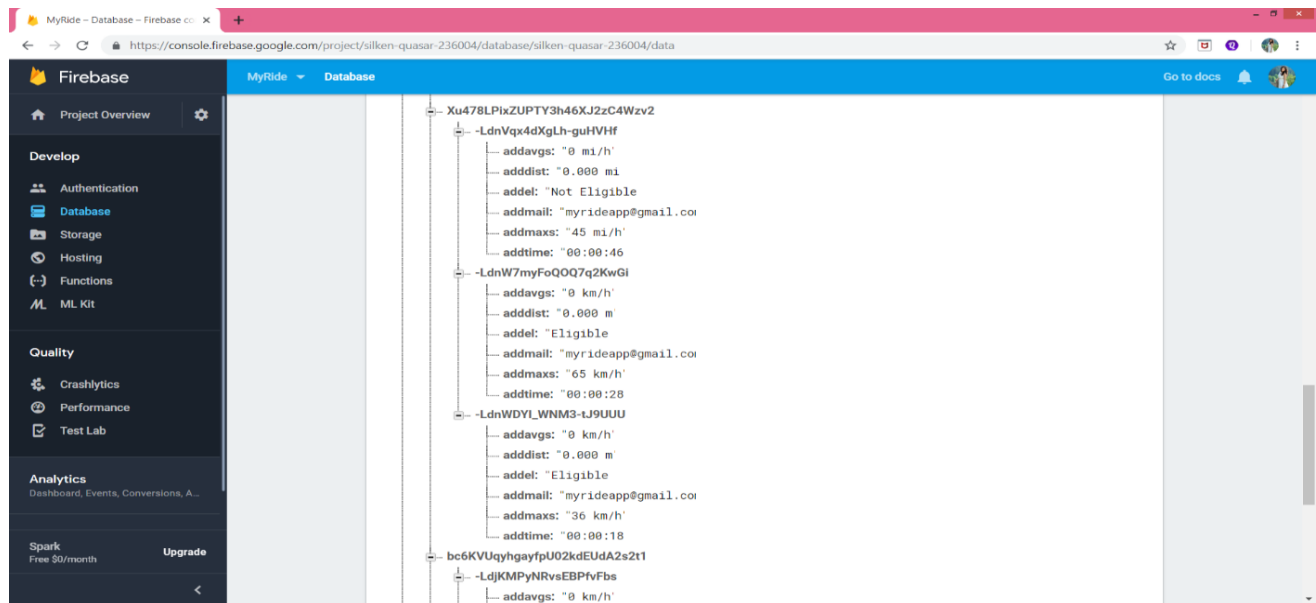


Figure 7. Under each Uid, every time tasks are uploaded in Database

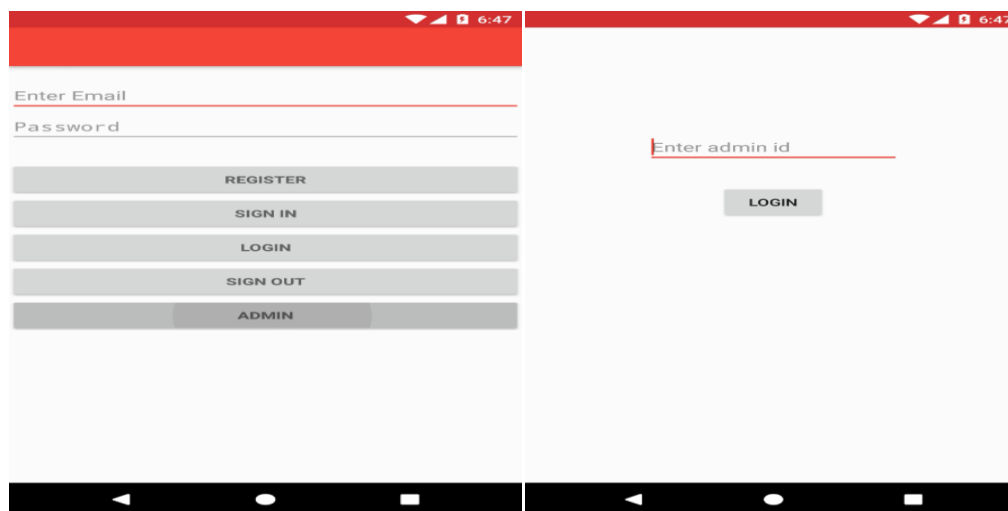


Figure 8. Admin Login

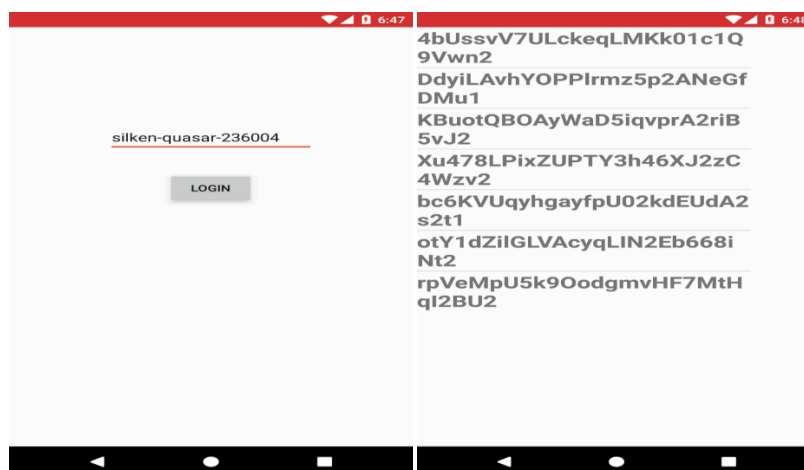


Figure 9. On Login it display's userId's

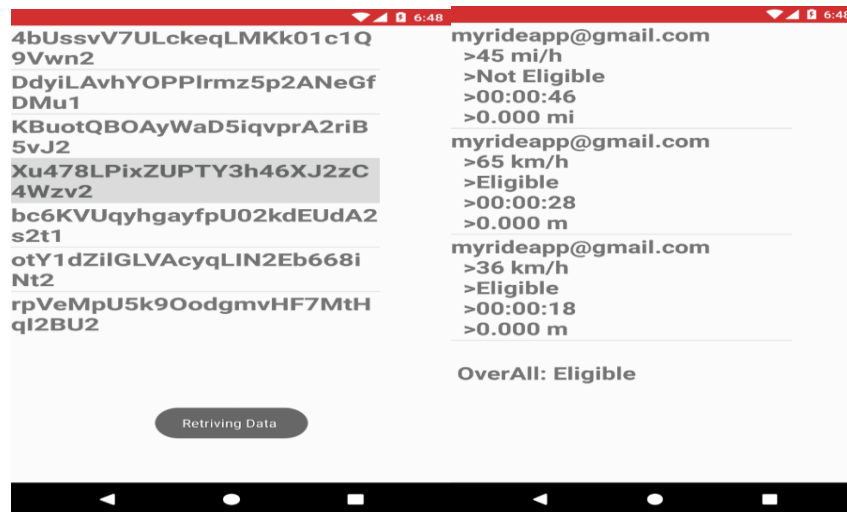


Figure10. User Data is Retrived by Selecting User uid

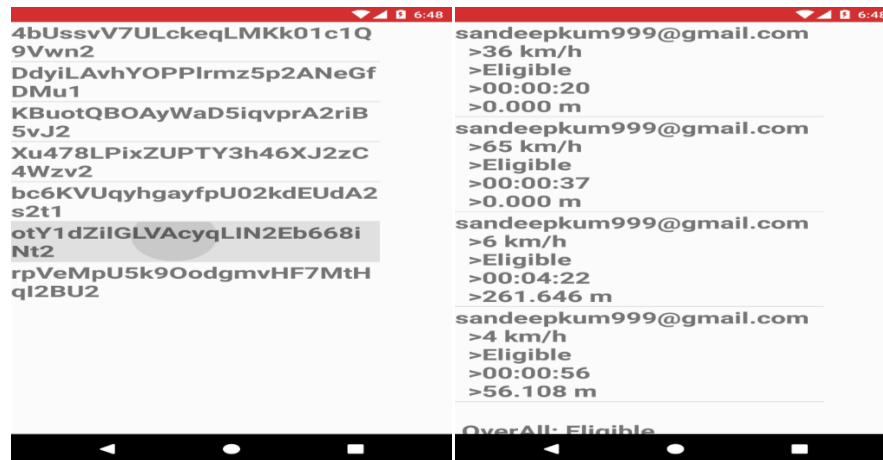


Figure 11. Similarly each User data can be view and knows Eligibility

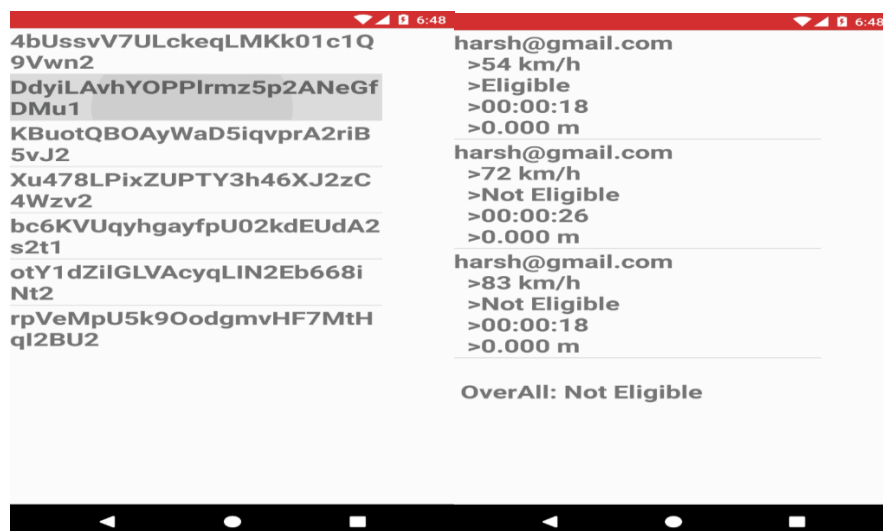


Figure12. Finds Over all Eligibility

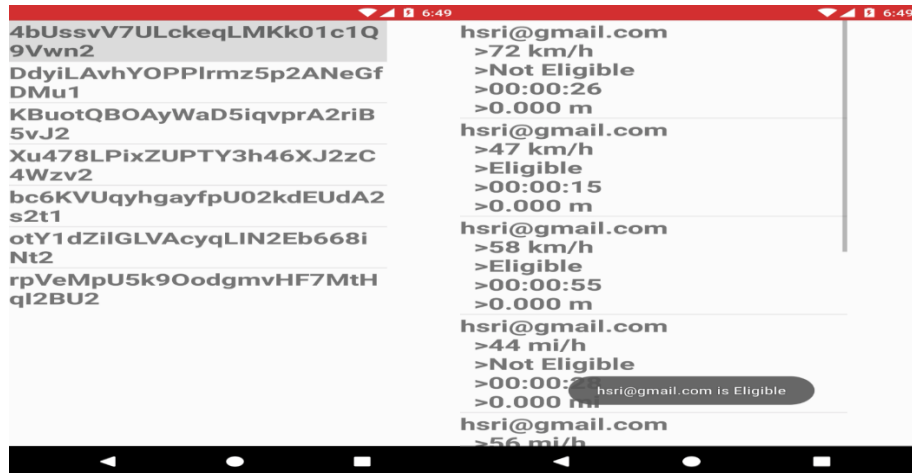


Figure 13. Scroll to view Whole Data and Eligibility

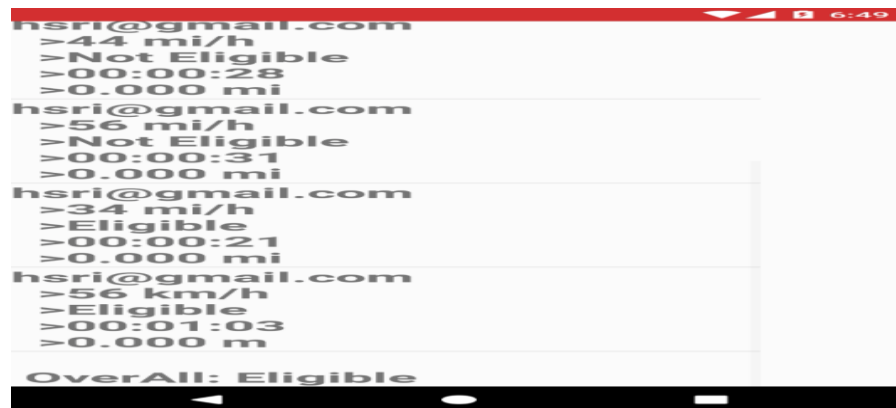


Figure 14. Checks Eligibility

V. CONCLUSION

This app is especially useful for people whose profession is a Cab Driver as they can show to their organizations how efficient and descent driving they are performing. This data can also be used to give incentives and rewards for the best driver and improve their confidence. The future scope of this application could know the speed of a vehicle when an accident takes place. This application can generate data that can be used by the traffic police to see if a particular driver is maintaining his speed limit or not. Through this generated data it becomes easy for the insurance companies to make decisions like whether he is eligible for the insurance sanction or not. An alarm mechanism can also be embedded in this app so that when a person crosses the limited speed the respective organizations can get a message and alert the driver. The App can also be made complex by including additional properties like the path in which the driver is travelling, how the driver is performing in heavy traffic and no traffic conditions. The conclusion sums up by saying that by the data getting generated from this app, a lot of stress and heavy working processes can be eliminated.

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