

QR based Penalty Charging for Traffic Police

S.M. Abirami ^a, A. Akila ^b, P.B. Kamalesree ^c, S. Gowtham ^{d*}

^a Third Year of B.tech – Information Technology, K.S.R College of Engineering (Autonomous), Tiruchengode, Tamil Nadu, India.

^b Third Year of B.tech – Information Technology, K.S.R College of Engineering (Autonomous), Tiruchengode, Tamil Nadu, India.

^c Third Year of B.tech – Information Technology, K.S.R College of Engineering (Autonomous), Tiruchengode, Tamil Nadu, India.

^{d*} Assistant Professor, Department of Information Technology, K.S.R College of Engineering (Autonomous), Tiruchengode, Tamil Nadu, India. E-mail: gowthams@ksrce.ac.in

Abstract

The "QR BASEDPENALTY CHARGING FOR TRAFFIC POLICE" project was created utilising the Android 4.0.3 Standard platform. The platform used to develop the application is Eclipse IDE (Mars) with Java 1.7 Standard Edition.

The project's focus is on using mobile apps to manage information about traffic infringement penalties. Through this software, the project processes accident information as well as licence details, car details, penalty details, and accident information. The project will also concentrate on a mobile app that will aid in learning information on the fines associated with traffic infractions as tracked by Vehicle No. on the road. Due to its quick readability and larger storage capacity compared to normal barcodes, the Quick Response (Vehicle No) system gained popularity outside of the automotive industry. Applications include document management, general marketing, product tracking, item identification, and time monitoring. According to the completed procedure, there will be a decrease in the burden of the government and traffic police, as well as a decrease in accidents and corruption throughout the nation.

According to the rule broken by the car driver and the actual fine decided by the government, this programme will immediately deduct the fine from the owner's bank account. The owner of the vehicle will also receive a message from this application detailing the type of rule they broke, the fine associated with it, a photo taken by their mobile device as proof of the violation, the date and time of the violation, and the precise amount they will be receiving in their bank account as payment for the violation.

According to this whole process done, there will be reduction in the workload of traffic police and government and also reduction in accidents and corruption too in country.

Keywords: Traffic Violation Penalty Charging, Vehicle Number, Reduction in Accidents.

Introduction

The goal of this project, which is being developed as an Android application, is to assist the traffic police in keeping track of all traffic infractions committed by road users. The goal of this study is to provide a smart traffic offence analysis tool for Android. The suggested system is based on Android. The suggested solution will eliminate all problems associated with roadside traffic rule violations. This system includes automatic fine collection for traffic violations using the vehicle identification number, message delivery, and automatic fine receipt from the owner's bank account. Studying current operations and learning how to carry out processing tasks are the major goals of system analysis. It's important to thoroughly investigate how Android applications manage providing location status update information. The specifics are coded and processed by themselves. The only ones in charge will be the programmes. A keyboard and mouse-equipped personal computer must be purchased by the company; this is a direct expense. Covering the manual method with a digital system has numerous immediate advantages. Any capital investment is justified on the grounds that it would lower costs or boost the quality of services or goods, which can then be anticipated to result in higher profits. The user can ask questions and receive answers. The project is cost-effective in that it uses less memory on the mobile device, using less power as a result. Currently being developed by Google, Android is a mobile operating system (OS) that is based on the Linux kernel and is primarily intended for touchscreen mobile devices like smartphones and tablets. The user interface of Android is based on direct manipulation, using a virtual keyboard for text input and touch gestures that ostensibly mimic real-world motions, such as swiping, touching, and pinching, to manipulate on-screen items. Google has also created Android TV for televisions, Android Auto for automobiles, and Android Wear for wrist watches in addition to touchscreen devices. Each of these products has a unique user interface that was built on JetBrains' IntelliJ concept software and created especially for Android development. Android device manufacturers who complied with Google's guidelines granted these apps licences. Two further competing Android ecosystems are Fire OS from Amazon.com and LineageOS. APK-formatted software packages are often released through closed-source platforms like Google Play Store or Samsung Galaxy Store or open-source ones like Aptoide or F-Droid.

Related Work

Keeping the car information in the Vehicle No. Providing the vehicle number to all registered cars to quickly view car information while verifying. This project aids in reducing traffic infractions. Other electronic devices like laptops, game consoles, digital cameras, and others run Android-based operating systems. Android has the largest installed base of any operating system as of 2015. It is the second most frequently used mobile operating system in the US, behind iOS. Android was introduced in 2007 along with the establishment of the Open Handset Alliance, a grouping of hardware, software, and telecommunications businesses committed to developing open standards for mobile devices.

Android was initially developed by Android, Inc., which Google purchased in 2005. Over a million Android programmes ("apps") had been published and downloaded over 50 billion times as of July 2013 in the Google Play store. Android's ASCII text file has served as the foundation for a number of ecosystems, most notably Google's, which is connected to a collection of proprietary programmes called Google Mobile Services (GMS), which is frequently pre-installed on the aforementioned devices.

This includes essential programmes like Gmail, the online store Google Play and its companion development platform Google Play Services, as well as frequently used apps like the Google Chrome browser. These apps have been granted licences by Android device makers who have attained Google-imposed standards certification. Amazon.com's Fire OS and Lineage OS are two other Android ecosystems in competition. Software is typically distributed via open source platforms like Aptoide or F-Droid, which use APK-formatted software packages, or through proprietary application shops like Google Play Store or Samsung Galaxy Store.

Existing Work

- The current system is not operational.
- Information on fines for moving violations is written on the printed charge sheet.
- The department of traffic police maintains hard copies.
- Users must immediately pay the traffic police.
- The time and corruption are increased. The current system has a number of flaws, including costly, complex, and traffic-related issues.
- Using the spot billing machine (SBM) now in use makes it harder to maintain the traffic offence management system and adds to the amount of paperwork.

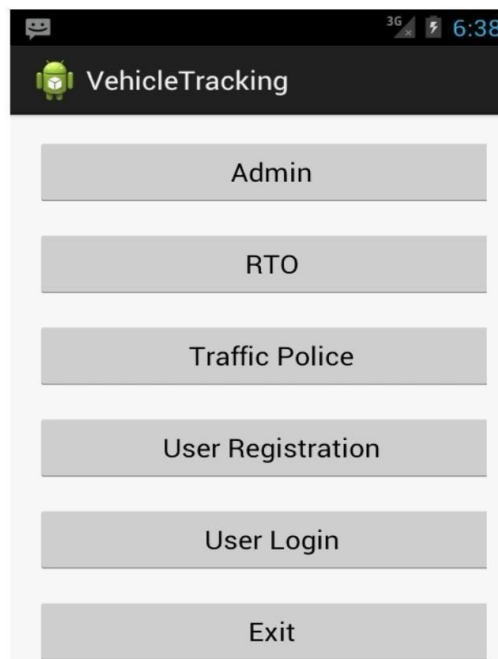
Drawbacks

- There are a lot of problems produced because of the traffic, corruption, and other factors.
- Due to increased corruption, all systems are manual and do not automatically collect fines.
- The amount of paperwork grows.

Proposed Work

- The suggested system is based on Android.
- The suggested approach will eliminate all problems associated with roadside traffic rule violations.
- This system includes automatic fine collection for traffic violations using the vehicle identification number, message delivery, and automatic fine receipt from the owner's bank account.
- In this system, the vehicle tag that is supplied to each vehicle when they purchase or pass the necessary vehicle driver's licence test received by RTO will be read by the vehicle reader.

Proposed Diagram



Advantages

Through a mobile device, the user can observe fine details. One option is an SMS alert. It supports interpersonal openness so that users can find information despite their busy schedules. With a few key words, past information can be quickly and readily recovered. This project will lessen road traffic violations and traffic congestion issues. Due to the automatic fine reduction from the owner's bank account in accordance with the rule broken by the vehicle user or owner and the real fine, it makes fine collection simple. Government power is the reason that corruption has decreased globally.

Conclusion

The problems associated with roadside traffic rule violations are lessened as a result of this effort. This interface assists in preventing corruption as well as violations of traffic laws. This project offers a function that makes it simple to collect fines by automatically deducting them from the owner's bank account. Any user can have the programme by downloading or sharing it because it is created as an Android application. The application has undergone thorough testing, and more end users appear to be satisfied.

References

- Horrey, W.J., & Lesch, M.F. (2009). Driver-initiated distractions: Examining strategic adaptation for in-vehicle task initiation. *Accident Analysis & Prevention*, 41(1), 115-122.
- Trivedi, M.M., Gandhi, T., & McCall, J. (2007). Looking-in and looking-out of a vehicle: Computer-vision-based enhanced vehicle safety. *IEEE Transactions on Intelligent Transportation Systems*, 8(1), 108-120.
- McCall, J.C., & Trivedi, M.M. (2006). Video-based lane estimation and tracking for driver assistance: survey, system, and evaluation. *IEEE transactions on intelligent transportation systems*, 7(1), 20-37.
- Handmann, U., Kalinke, T., Tzomakas, C., Werner, M., & Seelen, W.V. (2000). An image processing system for driver assistance. *Image and Vision Computing*, 18(5), 367-376.
- Liang, Y., Reyes, M.L., & Lee, J.D. (2007). Real-time detection of driver cognitive distraction using support vector machines. *IEEE transactions on intelligent transportation systems*, 8(2), 340-350.
- De la Escalera, A., Armingol, J.M., & Mata, M. (2003). Traffic sign recognition and analysis for intelligent vehicles. *Image and vision computing*, 21(3), 247-258.
- Amudha, K., Babu, C.N.K., & Balu, S. (2016). Effectual reversible watermarking method for hide the patient details in brain tumor image. *International Journal of Computer and Information Engineering*, 9(7), 1762-1766.
- Horrey, W.J., Lesch, M.F., & Garabet, A. (2008). Assessing the awareness of performance decrements in distracted drivers. *Accident Analysis & Prevention*, 40(2), 675-682.