ISSN: 2582-7219

International Journal of Multidisciplinary Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Impact Factor: 8.206

Volume 8, Issue 4, April 2025

© 2025 IJMRSET | Volume 8, Issue 4, April 2025 |DOI:10.15680/IJMRSET.2025.0804415

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Traffic Monetary Sanctions Network

M. Dinesh, Dr. I. Ajitha

Student, Department of Computer Technology, Dr. N. G. P. Arts and Science College, Coimbatore, India

Assistant Professor, Department of Computer Technology, Dr. N. G. P. Arts and Science College, Coimbatore, India

ABSTRACT: The Traffic Monetary Sanctions Network is an Android-based mobile application developed using Eclipse IDE (Mars) with Java SE 1.7. The application is designed to simplify and digitize the process of collecting traffic fines, thereby eliminating corruption and reducing the workload of traffic police officers. By integrating mobile technology into the enforcement process, the system ensures transparency, accountability, and real-time access to offender data.

I. INTRODUCTION

Traffic violations are a major issue in urban areas, often leading to accidents, congestion, and inefficiencies in law enforcement. Traditionally, fines are collected manually, which is not only time-consuming but also prone to corruption and errors. To address these challenges, the Traffic Monetary Sanctions Network has been developed. This Android application provides a user-friendly interface for traffic police officers to issue fines, record offenses, and manage payment records efficiently. The system also allows citizens to view their fines and make payments through the app, creating a transparent and accountable environment.

II. EXISTING SYSTEM

In the existing manual system, traffic violations are recorded on paper, and fines are collected directly from offenders. This method is slow, inefficient, and often results in disputes due to a lack of proper documentation. Moreover, manual handling of fine records increases the risk of data manipulation and corruption. The lack of integration with centralized databases makes it difficult to track repeat offenders and enforce penalties uniformly. Furthermore, citizens have limited access to their fine records, leading to confusion and dissatisfaction.

III.PROPOSED SYSTEM

The proposed system automates the entire process of issuing and collecting traffic fines through a mobile application. Traffic police officers can use the app to record violations, generate digital challans, and update offender information in real time. The app is connected to a centralized database, enabling instant access to offense history and payment status. Citizens can also use the app to view their traffic violations, pay fines online, and receive notifications about new penalties. The proposed system not only reduces manual errors and corruption but also enhances the efficiency of law enforcement operations. It also includes GPS tracking for location tagging of offenses, and the potential for integrating with national databases for license and vehicle verification.

Additional features include:

GPS tracking of violation locations

Generation of e-receipts.

Integration with government ID and vehicle registration databases.

Option for users to appeal fines or upload supporting documents.

Multi-language support to ensure accessibility across regions.

This model fosters a culture of responsibility among drivers and enhances law enforcement capabilities.

© 2025 IJMRSET | Volume 8, Issue 4, April 2025 |DOI:10.15680/IJMRSET.2025.0804415

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

IV.METHODOLOGY

The development methodology follows the traditional waterfall model. It begins with requirement gathering, followed by system design, implementation, testing, deployment, and maintenance. The application is built using Java SE 1.7 on Eclipse IDE (Mars version) for the Android platform. SQLite is used for the local database.
System Design:
Frontend: XML-based UI for Android mobile app.
Backend: Java classes handling user input, database communication, and logic processing.
Database: SQLite for local storage, with plans to migrate to cloud storage for scalability.
The system includes three main modules:
Traffic Police Module – Issue fines, upload evidence, and update records.
Citizen Module – View fines, make payments, view history.
Admin Module – Manage user accounts, monitor system logs, analytics.
Use cases were modeled using UML diagrams, and test cases were designed for functional and non-functional requirements. The app was tested on multiple Android devices to ensure compatibility and performance.

V. SYSTEM ARCHITECTURE

The system follows a three-tier architecture:
Presentation Layer: Android app interface.
Business Logic Layer: Java-based service layer handling all core functions.
Data Layer: SQLite database storing user information, fines, and transaction history.
All communication between the client and server is secured using HTTPS protocols. Data is encrypted before being stored to ensure privacy. The application is modular, allowing for future scalability and integration with third-party services like digital wallets and government portals.

VI. MODULE DESCRIPTION

Traffic Police Module:
Login with secure credentials.
Issue digital fines by entering vehicle number, type of violation, and uploading image evidence.
GPS tagging of location.
Citizen Module:
View list of pending fines.
Pay fines through secure online payments.
View payment history and download receipts.
Notifications for new fines and payment deadlines.
Admin Module:
Manage user and officer accounts.
Generate reports and statistics.
Monitor system performance and data integrity.
Database Module:
Manage tables for user accounts, fines, payment transactions, and logs.
Periodic backup and recovery support.
Secure login and access control policies.

VII. RESULT AND DISCUSSION

The application was tested in a simulated environment. Traffic police were able to issue fines quickly and securely. Offenders received real-time notifications and made payments without needing to visit any physical office.
Key findings:
Reduction in time taken to issue and process fines.
Elimination of cash handling reduced the risk of bribery.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Improved tracking of offender history.
Enhanced public satisfaction due to the convenience of digital payment.
Users appreciated features like fine history, instant receipts, and secure access. Officers found the GPS and photo upload features particularly useful in justifying fines. Administrators could generate violation heatmaps to plan traffic interventions.
Challenges included internet connectivity issues in remote areas and reluctance of some users to switch from traditional methods. These were addressed with offline sync features and user awareness programs.

VIII. FUTURE ENHANCEMENTS

Integration with vehicle insurance databases to auto-flag uninsured vehicles.
Facial recognition for driver verification.
AI-powered violation detection using real-time video feeds.
Cloud-based data storage and analytics.
Offline access with automatic data sync.
User education through in-app traffic rule tutorials and awareness campaigns.
Dynamic fine structures based on offense history.
This project lays the foundation for a smarter, safer traffic enforcement ecosystem.

IX. MODULES

1. Admin Module - The admin has full control over the system. This module allows the administrator to manage traffic police user accounts, monitor system activities, and generate reports for higher authorities. Additional functionalities include auditing logs and setting permissions for various roles.
2. Police Module - Traffic police officers can log into the system using secure credentials. They can issue fines, upload evidence such as photos, and check the history of offenders. The module supports real-time synchronization with the central database, ensuring data consistency. Officers can also search for vehicle details using registration numbers and view outstanding fines.
3. User Module - Users (citizens) can register and log in to view their traffic violation records. They can pay fines through integrated payment gateways and receive notifications about pending dues. The module also includes a helpdesk feature to raise queries or complaints and offers access to traffic rules and safety tips.

X. CONCLUSION

The Traffic Monetary Sanctions Network provides a robust, transparent, and efficient solution to manage traffic fines. By digitizing the entire process, it reduces corruption, ensures quick action, and offers convenience to both the traffic police and the public. The system also facilitates better data management and decision-making through real-time analytics. Future enhancements could include AI-based violation detection using CCTV feeds, multilingual support for wider accessibility, and integration with court systems for handling disputes. The Traffic Monetary Sanctions Network provides an efficient, transparent, and secure method for managing traffic fines. It reduces manual workload, enhances record-keeping, and improves the overall traffic management system. Future enhancements include integration with smart traffic cameras, AI-based violation detection, and support for multiple regional languages.
The system's modular nature ensures easy upgrades, and its user-friendly interface makes it suitable for widespread adoption. With increasing smartphone penetration, digital traffic enforcement can play a key role in making roads safer.

REFERENCES

1. Android Development Documentation, developer.android.com
2. Java SE 1.7 API Documentation, Oracle
3. SQLite Documentation, sqlite.org
4. Government of India Traffic Rules Handbook
5. IEEE Research Papers on Intelligent Traffic Systems

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING AND TECHNOLOGY

| Mobile No: +91-6381907438 | Whatsapp: +91-6381907438 | ijmrset@gmail.com |

www.ijmrset.com