TOMS:Traffic Offence Management System

A literature review report submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Technology

in

Computer Science & Engineering

Submitted by

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CERTIFICATE

This is to certify that the report entitled "TOMS:Traffic Offence Management System" is a bonafide record of the mini project(CSD334) submitted by Joyal Devassy (FIT20CS122), Nikhil Ravi (FIT20CS087), Vijay Bhaskar (FIT20CS115), Vishal C Varghese (FIT20CS116) in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology (B.Tech) in Computer Science & Engineering during the academic year 2022-23.

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ABSTRACT

The Traffic Offence Management System (TOMS) is an innovative and comprehensive webbased platform aimed at transforming the landscape of traffic enforcement and management. This advanced system offers a seamless and efficient approach to generating digital challans for a wide array of traffic violations, catering to both citizens and traffic officers. TOMS empowers traffic officers with a user-friendly interface to swiftly and accurately generate digital challans for various traffic violations. From common offenses like no helmet and no seatbelt to more serious transgressions such as rash driving and drunk driving, the system covers a comprehensive spectrum of violations. This feature not only enhances the effectiveness of traffic enforcement but also contributes to raising awareness about road safety and compliance. For traffic officers, TOMS provides a centralized dashboard to monitor and manage challan statuses. The system's capability to send automated reminders for unpaid fines ensures a proactive and organized approach to fine collection. Additionally, the platform facilitates accident reporting and verification, allowing officers to promptly respond to incidents, assess damages, and take appropriate actions. Citizens are equally empowered through TOMS. By simply entering their vehicle number on the website, they can conveniently access information about any challans associated with their vehicle. The system provides a secure and efficient online payment gateway, enabling citizens to settle fines digitally. Real-time payment confirmations offer peace of mind, and a comprehensive challan history allows individuals to stay informed about their compliance record. The TOMS project represents a transformative step towards digitizing and modernizing traffic management. By harnessing the potential of technology, TOMS aims to foster a culture of responsible driving, reduce administrative burdens, and improve overall road safety. This innovative system not only simplifies challan generation and payment processes but also promotes a collaborative approach between citizens and authorities in creating safer and more responsible roadways

Conceptualized and proposed the Traffic Offence Management System (TOMS) project. Led the project team in defining project goals, scope, and objectives. Developed the architecture and framework of the TOMS website, ensuring seamless integration of frontend and back-end components. Collaborated with traffic officers to gather requirements for challan generation and accident reporting functionalities. Co-authored the project report, providing insights into the project's overarching vision and technical aspects.

Joyal Devassy

Conducted an extensive review of existing traffic violation systems and regulatory frameworks. Designed the user interface and user experience (UI/UX) for the TOMS website, prioritizing accessibility and intuitive navigation. Implemented the front-end programming, translating UI/UX designs into responsive and userfriendly web pages. Collaborated with backend developers to ensure effective data exchange and synchronization. Contributed significantly to the methodology section of the project report, outlining the technical specifications and design considerations.

Nikhil Ravi

Researched and compiled a comprehensive database of traffic violation statistics and patterns. Developed the accident reporting and verification system, including back-end logic for incident validation. Integrated automated email reminders for unpaid challans, enhancing fine collection efficiency. Assisted in data analysis and visualization, presenting key insights from traffic violation and accident data. Played a pivotal role in the writing and editing of the project report, particularly in the data analysis and results sections.

Vijay Bhaskar

Facilitated user testing and feedback sessions, incorporating user suggestions to improve system usability. Implemented the vehicle details retrieval feature, utilizing back-end programming to fetch and display accurate information. Collaborated with traffic officers to streamline the system's workflow and user interfaces from an operational perspective. Contributed to the "Benefits and Advantages" section of the project report, highlighting the usercentric features and potential societal impact.

Vishal C Varghese

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> Joyal Devassy Nikhil Ravi Vijay Bhaskar Vishal C Varghese

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Chapter 1

INTRODUCTION

1.1 OVERVIEW

The Traffic Offence Management System (TOMS) is a pioneering web-based platform aimed at revolutionizing the management and enforcement of traffic regulations. With a robust and usercentric design, TOMS serves as a comprehensive solution to enhance road safety, streamline violation monitoring, and encourage responsible driving behavior. TOMS offers an array of innovative features tailored to both citizens and traffic officers. For traffic officers, the system facilitates seamless and accurate generation of digital challans for a wide spectrum of traffic violations. From minor infractions like no helmet to serious offenses such as drunk driving, TOMS empowers officers with an intuitive interface to efficiently document violations and track challan statuses. Citizens benefit from a hassle-free experience through TOMS. By entering their vehicle number on the website, they can instantly access their challan history and fine details. The platform further enables secure online payment, ensuring prompt settlement of fines with real-time confirmation receipts. Additionally, citizens can conveniently report accidents with photo evidence for insurance claims and contribute to public safety by reporting vehicle-related crimes committed by other drivers. TOMS integrates cutting-edge technologies to enhance traffic management. The system's architecture seamlessly merges front-end and back-end programming, resulting in a smooth user experience. Accurate data collection and analysis provide valuable insights into traffic violation patterns, supporting informed decision-making. In summary, the Traffic Offence Management System (TOMS) represents a paradigm shift in modern traffic enforcement. By fostering a collaborative approach between citizens and authorities, TOMS not only simplifies fine management processes but also promotes a culture of responsible driving and safer roadways. The system's user-friendly interface, coupled with its ability to streamline challan generation and payment procedures, positions TOMS as a pivotal tool in shaping a more secure and responsible driving environment.

1.2 PROBLEM STATEMENT

In today's rapidly evolving urban landscapes, effective management of traffic violations poses a significant challenge. Conventional methods of traffic enforcement often struggle to keep pace with the increasing volume of vehicles and the diversity of violations. As a result, there is a pressing need for a modern and streamlined approach to address these challenges and ensure safer roadways for all. Key issues include:

- Inefficient Challan Generation and Processing: The existing manual process of issuing challans for traffic violations is time-consuming and error-prone. This leads to delays in notifying violators and collecting fines.
- Lack of Real-time Monitoring: Current systems lack the ability to provide real-time insights into the status of challans and the payment process. This hampers timely enforcement and compliance tracking.
- Limited Citizen Participation: Citizens often face hurdles in reporting accidents, contributing to delays in insurance claims and incident verification. Additionally, there's a lack of streamlined mechanisms for citizens to report vehicle-related crimes committed by others.
- Complexity in Fine Payment: Traditional methods of fine payment involve physical visits to designated locations, resulting in inconvenience and administrative inefficiency for citizens.
- Data Fragmentation: Fragmented data collection and storage hinder the ability to analyze traffic violation patterns comprehensively. Lack of data-driven insights limits the development of effective traffic safety strategies. Addressing these challenges requires the development of a comprehensive Traffic Offence Management System (TOMS) that leverages advanced technologies to streamline challan generation, enable online fine payment, enhance accident reporting, and empower citizens to actively contribute to road safety. TOMS seeks to bridge the gap between conventional traffic enforcement methods and modern digital solutions, providing a holistic approach to managing traffic violations and promoting responsible driving behavior

1.3 OBJECTIVE

The primary objectives of the Traffic Offence Management System (TOMS) are aimed at revolutionizing the way traffic violations are monitored, managed, and enforced, with a focus on enhancing road safety, improving compliance, and fostering responsible driving behavior. The project seeks to achieve the following goals:

- Efficient Challan Generation: Develop a user-friendly and automated system that allows traffic officers to swiftly generate digital challans for a wide range of traffic violations, minimizing errors and reducing manual effort.
- Streamlined Payment Process: Implement a secure online payment gateway that enables citizens to conveniently pay fines for traffic violations, providing instant payment confirmations and reducing the need for physical visits.
- Real-time Challan Status Tracking: Enable traffic officers to monitor the status of generated challans in real time, facilitating effective enforcement and timely follow-up on unpaid fines.
- Prompt Accident Reporting and Verification: Create a seamless mechanism for citizens to report accidents with photo evidence, expediting insurance claims and facilitating quicker incident verification by authorities.

- Enhanced Citizen Participation: Empower citizens to actively contribute to road safety by reporting vehicle-related crimes committed by other drivers, fostering a sense of community vigilance.
- Comprehensive Data Analysis: Collect and analyze data on traffic violation patterns and accident trends to provide actionable insights for authorities to develop targeted road safety strategies.
- User-centric Interface: Design an intuitive user interface for both citizens and traffic officers, prioritizing ease of use, accessibility, and efficient navigation.
- Accurate Vehicle Details Retrieval: Implement a system for citizens to easily access accurate vehicle details by entering the vehicle number, improving transparency and information availability.
- Automated Reminder System: Develop an automated email reminder system to prompt citizens about unpaid challans, enhancing fine collection efficiency.
- Promote Responsible Driving: Cultivate a culture of responsible driving behavior among citizens by providing educational resources and promoting awareness about traffic rules and road safety. By achieving these objectives, the Traffic Offence Management System (TOMS) aims to significantly improve the efficiency of traffic violation management, contribute to safer roadways, and create a more collaborative and responsible driving environment for all stakeholders. Related works Certainly, here's an example of a "Related Work" section for your Traffic Offence Management System (TOMS) project: **Related Work** The field of traffic management and enforcement has witnessed significant advancements in recent years, with various projects and studies focusing on enhancing road safety, improving violation monitoring, and streamlining fine management. This section reviews several relevant works that provide insights into the challenges and solutions in the domain of traffic offence management.
- Digital Traffic Enforcement Systems: Previous projects have explored the implementation of digital systems for traffic violation monitoring. Systems like the "Smart Traffic Management System" (STMS) have successfully integrated surveillance cameras and automated challan generation to enhance enforcement efficiency [1]. While such systems address specific aspects, TOMS seeks to offer a more comprehensive solution by incorporating real-time tracking, online payment, and citizen engagement.
- Online Fine Payment Platforms: Online payment gateways have been utilized for fine settlement in various projects. The "Digital Fines Management System" (DFMS) provides citizens with the ability to pay fines online, reducing the need for physical visits [2]. However, TOMS extends this concept by coupling online payment with real-time challan tracking and accident reporting, fostering a more interconnected and responsive environment.
- Citizen Engagement in Traffic Safety: The concept of citizen participation in traffic management has gained traction. Projects like the "Citizen Traffic Sentinel" program encourage citizens to report violations using mobile apps [3]. TOMS takes a step further by enabling citizens to report accidents, verify incidents, and contribute to road safety through a single platform, fostering a sense of shared responsibility.

Chapter 2

SYSTEM REQUIREMENTS STUDY

2.1 USER CHARACTERISTICS

2.1.1 ADMIN

In Traffic Offence Management System (TOMS), the admin user is typically a designated individual or team responsible for managing the system and ensuring that it is operating correctly and efficiently. Some of the tasks and responsibilities of an admin user in TOMS may include:

- User account management: The admin user is responsible for managing user accounts, setting up new users, and revoking access for existing users as necessary.
- System configuration: The admin user is responsible for configuring the system settings, such as setting up payment processing options and customizing report templates.
- Data management: The admin user is responsible for ensuring that data entered into the system is accurate and up-to-date, and for backing up the system on a regular basis.
- Reporting and statistics: The admin user is responsible for generating reports and statistics, such as trend analysis and summary information, for relevant stakeholders.
- Security and privacy: The admin user is responsible for ensuring that sensitive information is protected, including the secure storage of personal information and credit card data.
- Maintenance and support: The admin user is responsible for maintaining the system and providing support to users as needed, such as troubleshooting technical issues and addressing system- related questions. In conclusion, the admin user in TOMS plays a critical role in managing and maintaining the system, ensuring that it operates effectively and efficiently to meet the needs of relevant stakeholders.

2.1.2 CITIZEN

In Traffic Offence Management System (TOMS), consumers refer to individuals who have been issued a traffic citation or violation and are required to pay a fine

or penalty. Some of the tasks and responsibilities of a consumer in TOMS may include:

- Receiving and paying citations: Consumers will receive citations either in person or through the mail and are responsible for paying the associated fine or penalty within the specified timeframe.
- Reviewing citation information: Consumers should be able to review citation information, including the type of violation, date and time, and location, to ensure that the citation is accurate and appropriate.
- Making payments: Consumers should have the ability to make payments for fines and penalties, including the ability to process credit card payments and receive receipts.
- Tracking citation status: Consumers should be able to track the status of their citations, including whether payment has been received and processed.
- Requesting review: If a consumer believes that a citation is incorrect or inappropriate, they should have the ability to request a review or dispute the citation. In conclusion, consumers play a critical role in the Traffic Offence Management System (TOMS) by providing relevant information and making payments for citations. The system should be designed to provide consumers with the necessary tools and resources to ensure that they can effectively manage their citations and resolve any issues in a timely and efficient manner.

2.1.3 POLICE

In Traffic Offence Management System (TOMS), police officers play a crucial role in issuing citations and enforcing traffic laws. Some of the tasks and responsibilities of police officers in TOMS may include:

- Issuing citations: Police officers are responsible for issuing citations to drivers
 who violate traffic laws, such as speeding, running red lights, or driving under
 the influence.
- Recording violations: Police officers should be able to record violations in the system, including the type of violation, date and time, and location.
- Reviewing and updating citation information: Police officers should be able to review and update citation information as necessary, including adding additional information or making corrections.
- Monitoring citation status: Police officers should be able to monitor the status of citations, including whether payment has been received and processed, and take appropriate enforcement action if necessary.
- Generating reports and statistics: Police officers should have access to reports and statistics on traffic violations, including trend analysis and summary information, to inform their enforcement efforts.
- Supporting consumer requests: Police officers may be required to support consumers who request a review or dispute a citation.

2.2 HARDWARE AND SOFTWARE REQUIRE-MENTS

2.2.1 HARDWARE REQUIREMENTS

The initial deployment is expected to support minimum configuration as illustrated below: PROCESSOR: Two core Intel or AMD Processor MEMORY: 128GB or above RAM:4GB or above KEYBOARD: 104 keys MONITOR: 15 Monitor PRINTER: Dot matrix MOUSE: Standard ps/2

2.2.2 SOFTWARE REQUIREMENTS

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

- System needs store information about new entry of Customer.
- System needs to help the internal staff to keep information of offence and find them as per various queries.
- System needs to maintain quantity record.
- System needs to keep the record of Connection.
- System needs to update and delete the record.
- System also needs a search area.
- It also needs a security system to prevent data leak.

Operating System Microsoft Windows 7 or later De Paul Institute of Science and Technology (DiST) Page — 6 School of Computer Science (UG) Traffic Offence Management System Database Web Server PHP HTML MYSQL WAMP/XAMPP Server Version 7.0 or later Version 5.0

• FRONT-END DEVELOPMENT: The front-end of an application is distinctly human. It's what the user sees, touches and experiences. In this respect, empathy is a required characteristic of a good front-end developer. The front-end of an application is less about code and more about how a user will interpret the interface into an experience. That experience can be the difference between a billion-dollar company and complete collapse. If you were a Myspace user in 2004, you were probably content with the experience. But once you started to uses Facebook, you almost certainly had a better experience. You realized that you could socialize with a simpler design, no flashing banner ads, easy-to-find friends, etc. Facebook and Myspace had a lot of differences under the hood as well (back-end), but at least part of

Facebook's triumph can be attributed to a better front-end and user experience. The technologies used in front-end development commonly include HTML, CSS, JavaScript and PHP. All code in a web application is eventually translated to HTML. It's the language that web browsers understand and use to display information to users. A web developer's understanding of HTML is analogous to a carpenter's understanding of a screwdriver. It's so important and necessary that it's often assumed for employment. By itself, HTML is quite plain. HTML does provide some basic style options, but to build a good front-end, developers must have experience with CSS. CSS provides the paint, templates, glitter, buttons, tassel, lights, and many other things that can be used to improve the presentation of a web page. CSS is so commonly used that languages have been built to make writing CSS easier. These languages – like Sass and LESS – are also known as CSS precompilers, but they are simply used to write more efficient and manageable CSS code. If you could only learn one language in your lifetime, you'd be well-advised to choose JavaScript. Though it's not exclusively a front-end language, that's where it's most commonly used. JavaScript is a language that is run on a client machine, i.e. a user's computer. This means that JavaScript can be used to program fast, intuitive and fun user experiences, without forcing a user to refresh their web page. Drag-and-drop, infinitescroll and videos that come to life on a web page can all be programmed with JavaScript. JavaScript is so popular that entire frameworks have been built just to make building application front-ends easier. Frameworks like Angular, Ember, React and Backbone are all very widely used for JavaScriptheavy front-ends. PHP is an acronym for "PHP: Hypertext Pre-processor". PHP is a widely-used, open source scripting language. PHP scripts are executed on the server. PHP is free to download and use. PHP is an amazing and popular language. It is powerful enough to be at the core of the biggest blogging system on the web. It is deep enough to run the largest social network. It is also easy enough to be a beginner's first server-side language files can contain text, HTML, CSS, JavaScript, and PHP code. PHP code are executed on the server, and the result is returned to the browser as plain HTML. PHP files have extension ".php". PHP can generate dynamic page content. PHP can create, open, read, write, delete, and close files on the server. PHP can collect form data. PHP can send and receive cookies. PHP can add, delete, and modify data in your database. PHP can be used to control user-access. PHP can encrypt data. With PHP you are not limited to output HTML. You can output images, PDF files, and even flash movies. You can also output any text, such as XHTML and XML

• BACK-END DEVELOPMENT The back-end of a web application is an enabler for a front-end experience. An application's front-end may be the most beautifully crafted web page, but if the application itself doesn't work, the application will be a failure. The back-end of an application is responsible for things like calculations, business logic, database interactions, and performance. Most of the code that is required to make an application work will be done on the back-end. Back-end code is run on the server, as opposed to the client. This means that back-end developers not only need to understand programming languages and databases, but they must have an understanding of server architecture as well. If an application is slow, crashes often, or constantly throws errors at users, it's likely because of back-end prob-

lems. MYSQL MySQL is the most popular Open-Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web based software applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. This tutorial will give you a quick start to MySQL and make you comfortable with MySQL programming. XAMPP Server XAMPP Server is a Web development platform on Windows that allows you to create dynamic Web applications with Apache2, PHP, MySQL and MariaDB. WampServer automatically installs everything you need to intuitively develop Web applications. You will be able to tune your server without even touching its setting files.

Chapter 3

SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

The existing Traffic Offence Management System (TOMS) may consist of manual processes and paper-based systems for issuing citations, tracking payments, and recording violations. Some of the key features and characteristics of the existing system may include:

- Manual citation process: The existing system may rely on manual processes for issuing citations, including writing and issuing citations by hand, and collecting payments in person.
- Limited information tracking: The existing system may not have the ability to track and store information on citations and violations in a centralized database, making it difficult to generate reports and perform trend analysis.
- Limited payment options: Consumers may be limited to making payments in person, such as at a local court or police station, and may not have the option to make payments online or by mail.
- No electronic notification: Consumers may not receive electronic notifications regarding citations, and may have to rely on physical mail or in-person visits to receive updates on the status of their payments.
- Limited data security: The existing system may not have adequate security measures in place to protect sensitive information, such as personal information and credit card data.
- Time-consuming and inefficient: The existing system may be timeconsuming and inefficient, with manual processes and a lack of automation leading to longer processing times and increased errors. In conclusion, the existing Traffic Offence Management System (TOMS) may be limited in its capabilities, with manual processes, limited information tracking, and limited payment options, and may require improvements to provide a more efficient and user-friendly system.

3.1.1 DISADVANTAGE OF EXISTING SYSTEM

The disadvantages of the existing Traffic Offence Management System (TOMS) may include:

- Inefficiency: The manual processes and lack of automation in the existing system can result in longer processing times and increased errors, leading to inefficiencies and frustration for consumers and police officers.
- Limited payment options: Consumers may be limited to making payments in person, with no option to make payments online or by mail, which can be inconvenient and time-consuming.
- Lack of real-time information: The existing system may not have the ability to provide real-time information on citations and violations, making it difficult for police officers to enforce traffic laws and for consumers to stay informed about the status of their citations.
- Limited reporting and analytics: The existing system may not have advanced reporting and analytics capabilities, making it difficult to generate reports and perform trend analysis to inform enforcement efforts.
- Security and privacy concerns: The existing system may not have adequate security measures in place to protect sensitive information, such as personal information and credit card data, which can raise concerns about privacy and data security.
- Limited electronic notification: Consumers may not receive electronic notifications regarding citations, which can lead to confusion and missed deadlines for payments.
- In conclusion, the existing Traffic Offence Management System (TOMS) may suffer from inefficiencies, limited payment options, lack of real-time information, limited reporting and analytics, and security and privacy concerns, which can impact the experience of both consumers and police officers.

3.2 PROPOSED SYSTEM

The proposed Traffic Offence Management System (TOMS) aims to improve and modernize the existing system by introducing new features and technologies. Some of the key features of the proposed system may include:

- Automated citation process: The proposed system may automate the citation process, including the issuance and payment of citations, to reduce manual error and improve efficiency.
- Mobile compatibility: The proposed system may include mobile compatibility, allowing police officers to issue citations and record violations directly from a mobile device.
- Online payment options: Consumers may have the option to make payments for citations online, including the ability to process credit card payments and receive receipts.
- Electronic notification: Consumers may receive electronic notifications regarding citations, including reminders and updates on the status of their payments.

- Integration with other systems: The proposed system may be integrated with other relevant systems, such as the motor vehicle registration system, to provide real-time information on vehicles and drivers.
- Improved reporting and analytics: The proposed system may include advanced reporting and analytics capabilities, allowing for the generation of detailed reports and trend analysis to inform enforcement efforts.
- Enhanced security and privacy: The proposed system may include enhanced security measures to protect sensitive information, including the secure storage of personal information and credit card data.
- In conclusion, the proposed Traffic Offence Management System (TOMS) aims to improve and modernize the existing system by introducing new features and technologies to provide a more efficient, user-friendly, and secure system for all stakeholders

3.2.1 ADVANTAGE OF PROPOSED SYSTEM

- Easy in data manipulation.
- Can generate any reports
- Automated, less man power is required
- Less time consuming
- Error free
- User friendly, Online Payment Option Available
- Edit facility
- Completely web-based management

3.3 FEASIBILITY STUDY

Feasibility study is made to see if the project on completion will serve the purpose of the organization for the amount of work, effort and the time that is spent on it. Feasibility study leads the developer to foresee the future of the project and the usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability to meet their user needs and effective use of resources.

3.3.1 TECHNICAL FEASIBILITY

The developing system must be justified by cost and benefit. Criteria to ensure that effort is concentrated on a project, which will give best, return at the earliest. The following are some important financial questions asked during preliminary investigation: -

- The costs conduct a full system investigation.
- The cost of the hardware and software.
- The benefits in the form of reduced costs or fewer costly errors.

3.3.2 BEHAVIORAL FEASIBILITY

The project would be beneficial because it satisfies the objectives when developed and installed. All behavioral aspects are considered carefully and conclude that the project is behaviorally feasible. This includes the following questions: -

- Is there sufficient support for the users?
- Will the proposed system cause harm?

Table 3.1: VEHICLE REGISTRATION TABLE

FIELD	DATA TYPE	CONSTRAINTS	DESCRIPTION		
VEHICLE NO	E NO varchar(50) primary key		store the vehicle registration number		
OWNER NAME	R NAME varchar(50) name of own		name of owner		
ADDRESS	varchar(50)		Address of owner		
TYPE	varchar(50) Type of vehicle		Type of vehicle		
MOB	varchar(50) Mobile number of own		Mobile number of owner		
EMAIL	AIL varchar(50) Email of owner		Email of owner		
MODEL varchar(50)		Model of vehicle			
DATE date Date of registra		Date of registration			

Table 3.2: CHALLAN TABLE

FIELD	DATA TYPE	CONSTRAINTS	DESCRIPTION
CMNO	int(11)	foreign KEY	crime NUM
CHNO	int(11)	primary key AUTO INCREMENT	Challan NUM
VEHICLENO	varchar(50)	Foreign key	Vehicle NUM
DRIVER NAME	varchar(50)	Not Null	name of offender
CRIME	varchar(50)	Not Null	Offence
FINE	int(11)	Not Null	fine amount for offence
DATE	DATE	Not Null	date of violation
PAID	varchar(50)	Not Null	status of challan
PLACE	varchar(50)	Not NULL	Place of violation

Table 3.3: CRIME REPORT

Table 5.5. Citivity ICEI OIGI						
FIELD	DATA TYPE	CONSTRAINTS	DESCRIPTION			
CHNO	int(11)	primary key AUTO INCREMENT	CRIME NUM			
VEHICLENO	varchar(50)	Foreign key	Vehicle reg NUM			
CRIMEDONE	varchar(50)	Not Null	Offence violated			
PLACE	varchar(50)	Not Null	Place of violation			
DATE	DATE	Not Null	date of violation			
PROOF	Blob	Not Null	photo of violation			
NAME	varchar(50)	Not NULL	Name of reporter			
MOB	varchar(50)	Not Null	mobile number of reporter			
VERIFIED	varchar(50)	Default'N'	status of verification			

Table 3.4: ACCIDENT TABLE

FIELD DATA TYPE		CONSTRAINTS	DESCRIPTION
ACDNO int(11)		primary key AUTO INCREMENT	ACCIDENT NUM
VEHICLENO	varchar(50)	Foreign key	Vehicle NUM
PLACE	varchar(50)	Not Null	Place of ACCIDENT
DATE	DATE	Not Null	date of ACCIDENT
PROOF	Blob	Null	photo
NAME	varchar(50)	NULL	Name of reporter
MOB	varchar(50)	Null	mobile number of reporter
VERIFIED	varchar(50)	Default'N'	status of verification

Table 3.5: USER REGISTRATION

FIELD	DATA TYPE	CONSTRAINTS	DESCRIPTION
EMPID	varchar(50)	primary key	employee id
NAME	varchar(50)	Not NULL	Name of officer
USER NAME	varchar(50)	Not Null unique	user name for login
PASSWORD	varchar(50)	Not Null	password for login

3.4 MAIN MODULES OF NEW SYSTEM

Structured design partitions a program into small, independent modules. They are arranged in a hierarchy that approximates a model of the business area and is organized in a top-down manner. Structured design is an attempt to minimize the complexity and make a problem manageable. The primary advantage of this design is as follows: -

- Critical interfaces are tested first.
- Early versions of the design are useful enough to resemble the real system.
- Structuring the design provides control and improves morale.

Modules that perform only one task are said to be less error-prone than the modules that performs multiple tasks. This part contains the module details regarding the project. It explains how the system works and what all procedures are taken to maintain the proper functioning of the new system.

Module Description

Main module of Traffic Offense Management System are as follows:

- Police Registration
- Issue Challan and Payment
- Report

Registration

The main module registration contains three sub modules: -

Managing consumer details:

In this section, admin can add different police officers. The admin keeps track of available number of consumers. It helps to arrange the consumer details. We are collecting consumer name, consumer number, consumer email, consumer phone number, and password

Registration

In this section police officers can register with their personal details. It is a single time registration which provides the consumers with a username and password. During the time of registration, the consumer details like consumer name, phone number, email, and password is collected

Login:

In this section the admin and police officers can login to the application using the given username and password. This section checks whether the users with the entered username and password exists or not. If the entered user exists then they will be forwarded to the next page. If the entered user doesn't exist then an error message will be displayed.

Issue Challan and Payment

Issue Challan:

In this section police officers can manage offender's details and prepare challans. During the challan preparation the consumer details like Driver's Name, License No, Address, Date, Time, Rule Broken, Vehicle Number, Amount and status. Admin can search consumers according to their needs and their availability

Payment:

After booking they can make the payment as online. During the payment we need to define card holder name, card number, validity of the card both month and the year, card cvv, card address. After entering the valid inputs, we can make the payment through online.

Report

Admin Report

- Paid Challan Report: Admin can retrieve the detailed list of consumers who paid the challan.
- Unpaid Challan Report: Admin can retrieve the detailed list of consumers who didn't paid the challan.

Consumer reports:

Payment reports Consumers can collect the details of their all billings. The consumers can view the details of the paid challan.

3.5 SYSTEM DESIGN

System design deals with planning and designing of the system. The design is done in such a way to meet the requirements. The most creative and challenging phase of the system development is system design. It is a solution

on how to approach the proposed system. The design will determine the success of the system. It mainly deals with form design, screen design and database design. It is the transition of a user-oriented document to document oriented programmers or database personnel. The goal of the design process is to produce a model or a representation of the system, which can be used later to build that system. The produced system is called the design of the system. The term design describes a final system and the process by which it is developed. It refers to the technical specifications that will be applied in implementing the system. It is the most creative and challenging phase of the system development life cycle. Design process begins by identifying reports and other outputs that the system produces. The system design also describes the data to be given as input, calculated or stored. Individual data items and calculation procedures are written in detail. The Traffic Offense Management System is designed in such a way that the input and output designers are very user friendly. The system design includes:

- Input Design
- Output Design
- Table Design

3.5.1 INPUT DESIGN

Inaccurate input data are the most common cause of the errors in data processing. Error entered by data entry operations can be controlled by input design. Errors generated by the user can be controlled by the input design and control checking. Input design is the process of converting user originated input to a computer-based format. The global designing of input data is to make entry as easy, logical and error free as possible. A good system should be user friendly, interactive and well suited for user need. Input is one of the most expensive phases of project and may cause major problems if not designed with utmost care. Input design features can ensure the reliability of the system and also determine how efficiently the user can interact with the system. Input design is the process where the input is received into the system. The design of the input should have effectiveness, accuracy, simple and attractive. The goal of designing input data is to make data entry easy, logical and error free as possible. In the design of input the following steps must be considered.

- Space must be allocated for each field.
- Field sequence must match the source document.
- The format should be specified for which data entered We have to keep in mind the following things to design the system
- What data to input
- What medium to use
- The dialogue to guide users in providing input

• Methods for performing input validation and steps to follow when errors occur. Input design is a part of overall system design which requires attention. Often the collection of input data is the most expensive part of the system, in terms of the equipment used; it is the point of most contact for the users with the computer system; and it is prone to error. If data entered into the system is incorrect, then the processing and output will magnify these errors. Thus, the designer has to have a number of clear objectives in input design.

3.5.2 INPUT FORMS

1. Login form

The login form contains two text fields, one for the user to enter a login id and the other to enter the password. Once the details are entered, the login button is clicked to login. If the details are incorrect a dialogue box will be displayed.

2. Registration form

The registration form contains the details of consumers that is to be added by the consumers, which include consumer name, phone number, email, and password. Once the details are entered, the register button is clicked for registration

3. Issue Challan

This form contains the details of consumer that can be added by the admin, it includes vehicle number no, offence committed, amount and time. Once the button is clicked the bill generated as default

4. Payment form

This form is used to enter the payment details like bank account details to make the payment for consumer. After check bill they can make the payment as online. During the payment we need to define card holder name, card number, validity of the card both month and the year, card cvv , card address. After entering the valid inputs we can make the payment through online

3.5.3 OUTPUT DESIGN

Computer output is the most important and direct sources of information to the users. Efficient output design should improve the system relationship with the user and help in decision making. The task output preparation is critical requiring skill and ability to align user requirements with capability of the system in operation. The output can be in the form of operational documents and reports. Output from computer systems is required primarily to communicate the result of processing to users or sometimes to other systems, including machine – based systems. They are also used to provide a permanent copy of these results for later consultation

OUTPUT FORMS:

1. Bill details

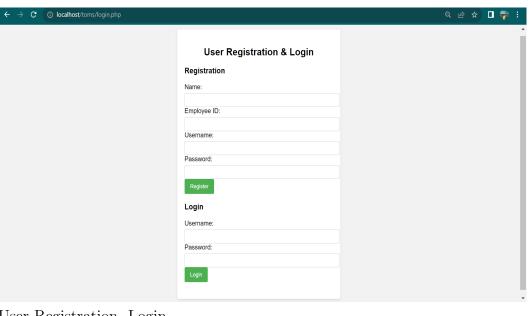
This form contains the details of consumer that can be added by the admin, it includes consumer no, consumer name, email, phone number, last unit, last unit date, last billing date, total bill amount and a payment button.

2. report

This form contains the details of consumer that display after payment. It includes offence details, offender name, payment date, total amount. User can take a printout of report if needed.

Chapter 4

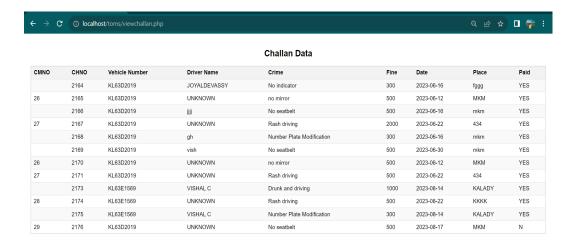
RESULT



User Registration Login

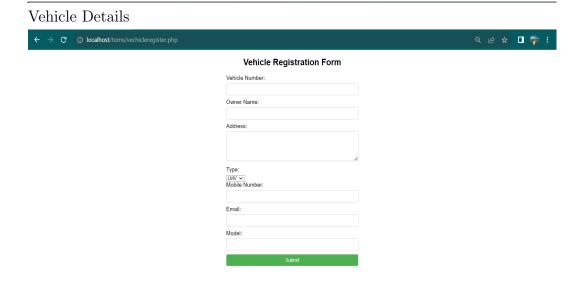


Add Challan Data



Challan Data





Vehicle Registration Form



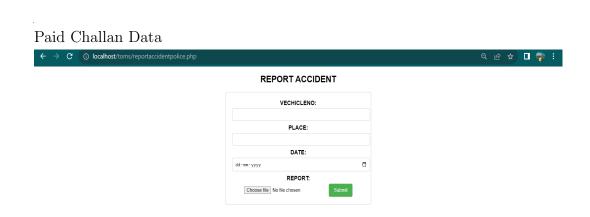
Crime Report ← → C ① localhost/toms/paidchallan.php Q 🖻 🖈 🛚 🌍 : Paid Challan Data CMNO CHNO Vehicle Number Driver Name Crime Fine Date Paid 2164 KL63D2019 JOYALDEVASSY 300 2023-06-16 YES No indicator fggg 2165 KL63D2019 UNKNOWN no mirror 500 2023-06-12 MKM YES 2166 KL63D2019 jjjj No seatbelt 500 2023-06-16 mkm YES 2167 KL63D2019 UNKNOWN Rash driving 2000 2023-06-22 YES 2168 KL63D2019 gh Number Plate Modification 300 mkm YES 2169 KL63D2019 No seatbelt 2023-06-30 YES 2170 KL63D2019 2023-06-12 UNKNOWN no mirror 500 MKM YES 2171 KL63D2019 UNKNOWN Rash driving 500 2023-06-22 434 YES 2173 KL63E1569 Drunk and driving 2023-08-14 KALADY YES VISHAL C 1000 2174 KL63E1569 UNKNOWN Rash driving 2023-08-22 KKKK YES

Number Plate Modification

2023-08-14

KALADY

YES



Report Accident

2175

KL63E1569

VISHAL C



Report Crime



Report Accident

Chapter 5

CONCLUSION

A traffic offence management system serves as a multifaceted tool with farreaching implications for traffic management and public safety. In addition to its core functions of collecting, processing, and tracking traffic offences, the system offers an array of extended advantages and features. Furthermore, the system reduces the administrative burden on law enforcement personnel. With the automation of data collection and processing, officers can dedicate more time and energy to critical tasks like patrolling and responding to emergencies. Public awareness and education are also integral extensions of the system. By using the platform to disseminate information about traffic laws and safety measures, authorities can raise awareness and educate drivers, ultimately promoting safer road behavior. Traffic flow optimization is facilitated by analyzing traffic data. Insights gained from the system can inform decisions related to road design and traffic management, reducing congestion and improving overall traffic efficiency. Furthermore, assessing the environmental impact of traffic violations is a novel extension. The system can evaluate the environmental consequences of such violations, enabling authorities to make informed decisions regarding sustainability and pollution control. Public feedback mechanisms can also be integrated. By involving citizens in the traffic safety process and addressing their concerns, authorities can improve community relations and road safety. Multi-agency collaboration is highly encouraged. When various government departments, including transportation, health, and urban planning, work together, a holistic approach to traffic management emerges, addressing immediate and long-term concerns. In summary, a comprehensive traffic offence management system extends well beyond basic tracking and fine imposition. It is a dynamic tool that modernizes traffic safety, streamlines regulation enforcement, and contributes to the overall well-being of road users and communities. Its adaptability and versatility are pivotal in tackling the ever-evolving challenges of traffic management in an ever-changing world

Chapter 6

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 Delhi Traffic Police, 2016. [Online]. Available: is.gd/L3GRA6

Appendices

CODE

```
<!DOCTYPE html>
<html>
<head>
<title>citizen</title>
k href="citizenscript.css" rel="stylesheet">
</head>
<body>
<div id="outer">
<div id="header">
<a class="indexa"
href="https://www.facebook.com/mvd.socialmedia
<img id="logo" src="facebook.png"></a>
<a class="indexa"
href="https://www.instagram.com/mvd_kerala/?hl = en">
< imgid = "logo" src = "instagram.png" >
< aclass = "indexa" href = "https://twitter.com/keralamvdlang = "https://twitter.com/keralamvdlang = "https://twitter.com/keralamvdlang" |
en" >
```

```
< imgid = "logo" src = "twitter.png" >
         </a>
         < aclass = "indexa"
         href = "https://www.youtube.com/channel/UCquF4r6jOGqO2 -
         OVrEDaplw" >
         < imgid = "logo" src = "youtubenew.png" >
         </a>
         < aid = "logout" href = "index.html" > Logout < /a >
         </div>
         < divid = "logo2" >
         < imgid = "logotoms" src = "download.webp" >
         < h2id = "titletoms" > TrafficOffenceManagamentSystem <
         /h2 >
         </div>
         < divid = "title" >
         < imgid = "road" src = "road.webp" >
         < h3id = "titlecitizen" > CITIZENCORNER < /h3 >
         </div>
         < divid = "features" >
<br/>
<br/>
display('a')"><h3
class="h3">Online services</h3></button>
<br/>
<br/>
display('b')"><h3
class="h3">Information Services</h3></button>
<br/>
<br/>
button class="bt1" onclick="display('c')"><h3
class="h3">Forms</h3></button>
<br/><button class="bt1" onclick="display('d')"> <h3
class="h3">Feedback</h3></button>
</div>
<hr>
<div id="main">
<iframe id="if1" src="onlineservices.html"></iframe>
</div>
<hr>
<div id="footer">
<div id="f1">
<iframe width="350" height="315"
src="https://www.youtube.com/embed/p9gLMdPYELs"
title="YouTube video player" frameborder="0"
allow="accelerometer; autoplay; clipboard-write;
encrypted-media; gyroscope; picture-in-picture; web-share" allowfullscreen></iframe>
<h2 class="about">ABOUT US</h2>
<hr>
The Motor Vehicles Department is
regulated by the Government of Kerala in terms policy
formulation and its implementation. The Department is
administered by the Transport Commissioner who is the
Head of Department.
</div>
```

```
<div id="f2">
<h2 class="red">HELPDESK</h2>
Online Services<br>
0471-2328799 (10:15 AM - 05:00 PM)<br/>br>
(Lunch break 01:15 \text{ P.M} - 2:00 \text{ P.M})<br/>
email: ssgcell.mvd@kerala.gov.in<br/>br>
<h2 class="red">General Enquiry</h2>
Public Relation Officer):<br>
(10:15 AM - 05:00 PM) (Lunch break 01:15 P.M - 2:00
P.M) < br >
Transport Commissionerate: 0471-2333317<br/>
e-mail: tcoffice.mvd@kerala.gov.in<br>
<h2 class="red">RTO / JRTO Contact Numbers</h2><br>
<a
href="https://mvd.kerala.gov.in/directory">https://mvd.kerala.gov.in/directory</a><br/>br>
<h2 class="red">Grievenace</h2>
91 88 96 11 00 (10:15 AM - 05:00 PM)<br>
(Lunch break 01:15 \text{ P.M} - 2:00 \text{ P.M})<br/>
email: complaints.mvd.kerala.gov.in<br/>br>
</div>
<div id="f3">
<h2 class="red">Helpdesk</h2>
<h2 class="red">Vahan:</h2>
 Vehicle
Registration/Fitness/Tax/Permit/Fancy, Dealer<br/>
<br/>br>
helpdesk-vahan[at]gov[dot]in, <br/>br>
+91-120-2459168 6:00 AM-10:00 PM<br/>br>
<br>
<h2 class="red">Sarathi:</h2>
Licence<br>
helpdesk-sarathi@gov.in<br>
+91-120-2459169 6:00 AM-10:00 PMv br>
<h2 class="red">eChallan</h2>
helpdesk-echallan@gov.in<br>
+91-120-2459171 6:00 AM-10:00 PM<br/>br>
<br>
<h2 class="red">mParivahan</h2>
helpdesk-mparivahan.gov.in<br>
+91-120-2459171 6:00 AM-10:00 PM
</div>
</div>
<script src="citizen.js"></script>
</body>
</html>
<?php
```

```
// Database configuration
servername = "localhost";
username = "root";
password = "";
dbname = "project";
// Create database connection
conn = new mysqli(servername, username, password, dbname);
// Check connection
if (conn->connect_error)die("Connection failed:".conn-i.connect_error);
// Check if form is submitted
if (SERVER["REQUEST_METHOD"] == "POST")//Retrieved at a from the form vehicle No
= {}_{P}OST["vehicleNo"];
driverName = {}_{P}OST["driverName"];
crime = {}_{P}OST["crime"];
fine = 0;
// Determine the fine based on the selected crime option
switch (crime)case" Nohelmet": fine = 500;
break:
case "No mirror":
fine = 300;
break:
case"Nose at belt":
fine = 500;
break;
case "Number Plate Modification":
case "Rash driving":
case "No indicator":
fine = 300;
break;
case" Drunk and driving":
fine = 1000;
break;
case "Overspeeding":
fine = 2000;
break;
place =_{P}OST["place"];
// Prepare and execute the SQL statement to insert data into database
sql = "INSERTINTOCHALLAN(VECHICLENO, DRIVERNAME, CRIME)
, FINE, PLACE)VALUES('vehicleNo', 'driverName', 'crime', fine, 'place')";
if (conn - > query(sql) = = true)
echo "Data inserted successfully!";
```

```
else
echo "Error: " . sql." < br > ".conn-¿error;
// Close the database connection
conn - > close();
? >
<!DOCTYPE html>
<html>
<head>
<title>REGISTER CHALLAN</title>
<style>
body
font-family: Arial, sans-serif;
margin: 0;
padding: 20px;
h2
text-align: center; /* Center align the heading */
margin-bottom: 20px;
form
width: 400px;
margin: 0 auto;
label
display: block;
margin-bottom: 5px;
input[type="text"],
select
width: 100padding: 5px;
margin-bottom: 10px;
input[type="submit"]
padding: 10px 20px;
background-color: 4CAF50;
color: fff;
border: none;
cursor: pointer;
input[type="submit"]:hover
background-color: 45a049;
</style>
</head>
<body>
<h2>Add Challan Data</h2>
```

```
<form method="POST" action="<?php echo sERVER["PHPsELF"];?;";
< label for = "vehicleNo" > VehicleNumber : < /label >
< input type = "text" name = "vehicle No" required > < br > 
<label for="driverName">Driver Name:</label>
<input type="text" name="driverName" required><br>
<label for="crime">Crime:</label>
<select name="crime">
<option value="No helmet">No helmet
<option value="No seatbelt">No seatbelt
<option value="Number Plate Modification">Number Plate
Modification
<option value="No indicator">No indicator
<option value="Rash driving">Rash driving
<option value="Drunk and driving">Drunk and driving
<option value="Overspeeding">Overspeeding
</select><br>
<label for="place">Place:</label>
<input type="text" name="place" required><br>
<input type="submit" value="Submit">
</form>
</body>
</html>
```