Tribhuvan University
Faculty of Management

TRAFFIC RULE AWARENESS AND VIOLATION MANAGEMENT SYSTEM

A Project Proposal
Submitted to
Faculty of Management, Tribhuvan University
in partial fulfillment of the requirements for the degree of
Bachelor of Information Management (BIM)

Submitted by
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1. Introduction

1.1 Introduction

Traffic rule awareness and proper violation management are important for improving road safety and reducing accidents. In many places, traffic rules, road sign information, penalty details, and violation records are managed through manual or scattered processes. This creates difficulty for citizens who want to understand traffic rules and for authorities who need to record, monitor, and manage traffic violations.

The proposed system is a web-based software application designed to provide traffic rule information, road safety learning materials, violation reporting, and violation record management. It will support general users, drivers, and administrators such as traffic police or authorized staff. The system will help users learn traffic rules and allow administrators to manage reported violations, penalties, and status updates in an organized digital platform.

1.2 Problem Statement

Traffic rule information is often difficult for the public to access in a structured and user-friendly way. Citizens may not know updated rules, road signs, penalties, or safe driving practices. At the same time, traffic violation records may be handled manually, which can cause delays, data duplication, poor tracking, and difficulty in preparing reports.

Because of these issues, there is a need for a digital system that can provide traffic rule awareness and manage violation records in a systematic way. The system should make traffic information easier to access, support violation reporting, and help authorized users manage violation data efficiently.

1.3 Objectives

The main objective of this project is to develop a web-based Traffic Rule Awareness and Violation Management System. The specific objectives are:

- To provide traffic rules, road signs, penalties, and safety guidelines in a digital platform.
- To allow users to learn traffic rules through awareness content and quizzes.
- To enable users to report traffic violations with necessary details.
- To allow administrators to review, update, and manage violation records.
- To generate useful reports related to violations, fine status, and rule awareness activities.

1.4 Development Methodology

The project will follow an iterative development methodology. The system will be developed in small phases, starting from requirement identification and analysis, followed by design, implementation, testing, and final documentation. Feedback from the supervisor and users will be considered during development to improve the system. The major phases include:

- Requirement analysis
- System design
- Database design
- Module-wise implementation
- Testing and validation
- Report writing and presentation preparation

2. Methodology

2.1 Requirement Identification and Feasibility Study

2.1.1 Functional Requirements

- User registration and login
- Admin login
- View traffic rules and road signs
- View traffic penalties and safety guidelines
- Take traffic rule quizzes
- Submit violation reports
- Manage violation reports and update violation status
- Manage users, rules, signs, penalties, and quiz questions
- Generate violation and activity reports

2.1.2 Non-Functional Requirements

- The system should be easy to use.
- The system should protect user and admin data.
- The system should provide fast access to information.
- The interface should be responsive for desktop and mobile users.
- The system should store records accurately and consistently.

2.1.3 Feasibility Study

The project is technically feasible because it can be developed using commonly available web technologies. It is operationally feasible because the system directly supports traffic awareness and violation record management. It is economically feasible because the project can be developed using open-source tools and does not require expensive hardware.

2.2 Related Work / Literature Review

Existing traffic management systems often focus on fine payment, vehicle registration, or license-related services. However, many systems do not combine public awareness, road sign learning, violation reporting, and administrative violation management in one platform. The proposed system aims to provide an integrated solution for both awareness and violation record handling.

The project is also related to e-governance, public safety information systems, and management information systems. It applies information management concepts to organize traffic rules, violation records, users, and reports in a structured digital form.

2.3 Analysis and Design Tools

The following tools and diagrams will be used during analysis and design:

- Use case diagram
- Data flow diagram (DFD)
- Entity relationship (ER) diagram
- Database schema
- System flowchart
- Wireframes or interface mockups

2.4 Implementation Tools

The proposed implementation tools are:

- Front End: React, HTML, CSS, JavaScript
- Back End: Node.js and Express.js
- Database: MySQL
- Design tools: Draw.io or similar diagramming tool
- Version control: Git

These tools may be adjusted after supervisor feedback or based on college requirements.

3. Expected Outcome

The expected outcome of this project is a working web-based Traffic Rule Awareness and Violation Management System. The system will allow users to access traffic rules, learn road signs, take quizzes, and report violations. Administrators will be able to manage traffic-related information, review violation reports, update statuses, and generate reports.

The project will also produce a complete project report including requirement analysis, design diagrams, implementation details, testing, conclusion, and recommendations.

4. Project Schedule

The estimated schedule for the project is presented in Table 4.1 below.

Table 4.1: Project Schedule

Phase	Activities	Duration
Proposal preparation	Topic selection, problem statement, objectives, initial planning	1 week
Requirement analysis	Requirement collection, feasibility study,	1 week

Phase	Activities	Duration
	module finalization	
System design	ER diagram, DFD, use case diagram, UI design	2 weeks
Database and backend development	Database schema, APIs, authentication, admin functions	3 weeks
Frontend development	User interface, rule pages, reporting forms, admin dashboard	3 weeks
Testing and refinement	Functional testing, bug fixing, supervisor feedback	2 weeks
Report writing	Draft report, screenshots, diagrams, final formatting	2 weeks
Defense preparation	Presentation slides, demo preparation, viva practice	1 week

5. References

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