SOFTWARE REQUIREMENTS SPECIFICATION

for

TRAFFIC LIGHT VIOLATION DETECTION

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1. INTRODUCTION
   1. Purpose:

The primary purpose of development of this application is to reduce the violation of the traffic rules and reduce the road accidents that occur and mostly the pedestrians are victimized. The traffic police would be easily able to penalize the people violating the traffic rules.

* 1. Document Conventions:

The font used in this document is “Times New Roman” having size 12. The text is made bold for the highlighting purpose so that it can be easily differentiated. In this document, every functionality is equally important and every requirement has its own priority.

* 1. Intended Audience and Reading Suggestions:

This document is for the people who are going to test the system and analyze its correctness. This project is being guided by Dr. Bhawana Rudra and Dr. Anand Kumar from Information Technology Department of National Institute of Technology, Surathkal.

* 1. Project Scope:

This application automatically detects a line cross violation in a road with traffic signal. The video from a CCTV camera is analyzed and violations are being detected. The vehicle number is being noted and the offenders will be penalized directly for their mistake. This type of application is designed to minimize the effort of traffic police and keep the roads traffic free and accident free.

* 1. References:

The research papers listed below are being referred for different functionalities being used in our application.

<https://ieeexplore.ieee.org/document/7289400>

<https://ieeexplore.ieee.org/document/7210349>

<https://ieeexplore.ieee.org/document/4767851>

<https://ieeexplore.ieee.org/document/5169511>

1. OVERALL DESCRIPTION:
   1. Application Perspective:

In our application, the synchronous work of detecting the instantaneous colour of the traffic light and checking whether a particular vehicle has crossed the signal line is happening. In case the application detects a violation, it stores the visual evidence and also detects the vehicle number. This process is running in an infinite loop i.e., at each instance, the traffic light colour and the vehicles near the traffic line is being checked.

The application does not terminate if it detects a violation. It may send a distress call to a nearby police officer about the violation.

* 1. Application Modules:

The application has three major modules

* 1. Application Functions:
  2. Operating Environment:
  3. Design and Implementation Constraints:
  4. User Documentation: