**ABSTRACT**

Traffic congestion is a common problem in cities, leading to longer travel times and more pollution. This research focuses on creating smart software that can manage traffic lights based on real-time vehicle counts in different lanes. By using cameras to monitor the number of two-wheelers and four-wheelers, the software will adjust traffic light timings to give more green light time to the lane with the most vehicles. For example, if one lane has a lot of cars and another has very few, the software will prioritize the busier lane.

Additionally, the system will include features to handle special situations, such as when VIPs are on the road or when emergency vehicles like ambulances and fire trucks need to get through. By addressing these challenges, this software aims to improve traffic flow, reduce congestion, and enhance safety on the roads, making it a significant step forward for smart city traffic management.