

TRAFFIC MANAGEMENT

Objective

In 2014, 54% of the total global population was urban residents. The prediction was a growth of nearly 2% each year until 2023 leading to more pressure on the transportation system of cities. Cities should be making their streets run smarter instead of just making them bigger or building more roads. This leads to the proposed system which will use a Raspberry pi and camera for tracking the number of vehicles leading to time-based monitoring of the system.

Existing system

The existing traffic system is generally controlled by the traffic police. The main drawback of this system controlled by the traffic police is that the system is not smart enough to deal with the traffic congestion. The traffic police official can either block a road for more time or let the vehicles on another road pass by **i.e.** the decision making may not be smart enough and it entirely depends on the official's decision. Moreover, even if traffic lights are used, the time interval for which the vehicles will be shown a green or red signal is fixed.

Therefore, it may not be able to solve the problem of traffic congestion. In India, it has been seen that even after the presence of traffic lights, traffic police officials are on duty, which means that in this system more manpower is required and it is not economical in nature.

PROPOSED SYSTEM

The first and primary element of this system is the camera. The cameras interact with the physical environment, meaning vehicles presence or absence while the camera data is sent to the database for training the module for further prediction. The cameras transmit status based on the presence of vehicles near it. The camera transmits the data at specified time intervals to the processor (Raspberry pi), it processes the data and sends the processed data to the controller.

The computed data from Raspberry pi is then transmitted to the controller through Wi-Fi connectivity. The controller makes use of the collected data to perform the Intelligent Traffic routing. In this system, the primary aim is to gather the information of moving vehicles and provide them a clear path till their destinations and traffic signals should switch automatically to give a clear way for these vehicles. This communication is done using the Wi-Fi. More specifically, the cloud server uses an equation that takes the data received (number of car) as input then determine the time interval of LED's needed for a smooth traffic flow.

Conclusion

Smart Traffic Management System has been developed by using multiple features of hardware components in IOT. This project presents an effective solution for rapid growth of traffic flow particularly in big cities which is increasing day by day and traditional systems have some limitations as they fail to manage current traffic effectively. This system is proposed to control the road traffic situation more Efficiently and Effectively.