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Evaluation and Implementation of Traffic Clearance for Emergency Applications

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Abstract: In this project, the ESP8266 microcontroller and LEDs are utilized to create a system that effectively controls traffic flow during emergency situations. Two modules, an emergency vehicle module, and a traffic module, communicate with a server. The server receives signals from the emergency vehicle and triggers the corresponding traffic lights to turn green and yellow in the direction of the vehicle. Simultaneously, the traffic lights in other directions turn red and yellow, providing a clear path for the emergency vehicle and the traffic signal can install the app, which alerts them of the approaching vehicle. Real-time updates, sound alerts, and vibrations are provided to ensure the public is aware and can take appropriate actions. An additional app is designed for the emergency vehicle driver, allowing manual control over traffic signals when they are positioned too closely together. This ensures the vehicle can navigate intersections without hindrance. By combining the server, mobile apps, and ESP8266 microcontroller, this project offers a comprehensive solution to improve emergency vehicle navigation in urban areas. It optimizes traffic flow, enhances public safety, and provides additional control for emergency vehicle drivers. The goal is to provide an efficient and accessible solution that can be implemented in various urban settings.

Keywords: Wi-Fi, smart traffic signals, cloud server, traffic signal sever, digital compass

REFERENCES

[1] K. D. S. A. Munasinghe, T. D. Waththegedara, I. R. Wickramasinghe, H. M. O. K. Herath and V. Logeeshan, "Smart Traffic Light Control System Based on Traffic Density and Emergency Vehicle Detection," 2022 Moratuwa Engineering Research Conference (MERCon), Moratuwa, Sri Lanka, 2022.

[2] C. -Y. Lau et al., "PC-based Intelligent Traffic Monitoring System with Real-time Analysis for Smart Cities," 2022 14th International Conference on COMmunication Systems & NETworkS (COMSNETS), Bangalore, India, 2022.

[3] M. P. Karthikeyan, S. R, M. K and K. G, "Smart Ambulance for Traffic Management System," 2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC), Coimbatore, India, 2021.

[4] S. Hossain and F. Shabnam, "A Comparative Study of IoT Based Smart Traffic Management System," 2021 IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON-ECE), Dhaka, Bangladesh, 2021.

[5] L. F. P. de Oliveira, L. T. Manera and P. D. G. D. Luz, "Development of a Smart Traffic Light Control System With Real-Time Monitoring," in IEEE Internet of Things Journal, vol. 8, no. 5,

pp. 3384-3393, 1 March1, 2021.

[6] Sweet Nisha1, Sanatan Ratna "survey on various intelligent traffic management schemes to minimize congestion for emergency Vehicles" (IJSTM) Volume No.04, Issue No. 01, January 2015.

[7] Devika M D "Intelligent Traffic Management for Ambulance and VIP Vehicles" (IJIRSET) Vol. 5, Issue 8, August 2016.

[8] Mr.G.MYILSAMY, AKILAN , ASMITHA G.R, GOPINATH P, KOWSALYA S

"Implementation of Ambulance Rescue System Using LabVIEW (IARS)" (IRJET) Volume: 04Issue: 03 | Mar -2017.

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[9] Mr. Binod Kumar, Mr. Pintu Kumar, Mr. Suman Kumar3, Mr. Suraj. R. Dhande4, Prof. Suhas.D. Kakde "Automatic Vehicle Accident Detection and Rescue System" (IJRASET)

