SMART WAY TO CONTROL TRAFFIC SIGNALS

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Abstract: Traffic jam is a big issue in developing country. There are a number of systems which exist to control the traffic as there is always possibility to break the signal, the work of traffic police increase. This project used to reduce the work load of traffic police and also to people follow traffic rule strictly in order to avoid accident. This project presents a RFID based system used recognize traffic lights status. The proposed approach avoids the issues that usually appear with the ordinary traffic lights recognition systems, especially with systems that employ image processing techniques to recognize the traffic lights status. The approach provides a high performance and a low-cost system. The project also presents a RFID based system used to recognize road signs. In order to prove the systems performs properly, the system has been experimentally tested for both based traffic light system and road signs. During run tests all signals are recognized correctly.

- **INTRODUCTION**

  Traffic signal is signaling devices for vehicle placed at road intersections to control flow of traffic. Before invention of traffic police, traffic controlled by traffic police. The first traffic light was non-electric operated on gas -lit in 9 th December 1868 installed outside the house of parliament to control the traffic in bridge street. In 1912, first electric traffic light was developed. As reported in the findings of an eight year study conducted by the National Highway Traffic Safety administration (NHSTA). There were on average of 1578 facilities each year resulting from two -vehicle traffic crashes at intersectios controlled by traffic signal Approximately 51% of those fatal crashes were caused by drivers who run red lights approximately29%were caused by drivers who failed to yield the right – ofway at traffic signals. The pepper presents automatic spikes signal system for traffic signal. Now a days the conventional traffic signal is static which provide fixed delay time for red, green, yellow signal to control the traffic. As there is possibility to break the signal, traffic rules will not be obeyed .The normal function of traffic signal requires sophisticated control and co-ordinations to ensure that traffic moves as smoothly and that pedestrians are protected when they cross the roads The normal function of traffic signal requires sophisticated control and co-ordinations to ensure that traffic moves as smoothly and that pedestrians are protected when they cross the roads. The usage of vehicles around the world is rising. This type of situations made the number of the road accidents around the world to be highly increasing. Due to traffic accidents, thousands of people die or get injured every day.Oneof the main reasons that causes traffic accidents is the low attention of the drivers. In order to avoid this type of situations, researchers around the world are developing and integrating the smart city concept

One of the main features of smart cities is taking the advantages of the communication technologies that is already merged within its infrastructure in order to increase the functioning efficiency of the city, to gain a fully economic development and a high life quality. Building intelligent transportation systems (ITS) is one of the most important initiatives for smart cities. Which its main goad is it provide an effective and sufficient transport services to drivers. Up till now, most inventory systems for traffic light share image processing based. Such types systems have high difficult algorithms for detecting and recognizing the signals. Occasionally, these systemshappen to have issues to identify the signals. That happens due to the diverse aspects such as the visibility, lightness, or the speedof the vehicle. Other than that, these types' ofsystems are used when the light is considerably good and the visibility is high, this implies that these types of systems can only be used during the daylight. Lastly, it has to be taken into consideration; these systems take quite a considerable processing time.

- **BLOCK DIAGRAM:**
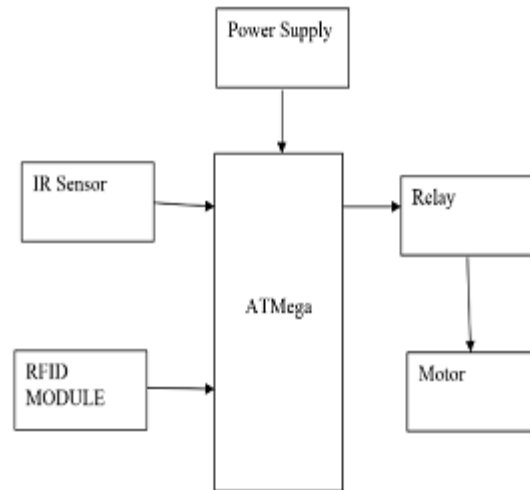
- **Block Diagram Description:**

- **AVR(ATmega 16)**

Microcontroller is a single chip that contains the processor (CPU),ROM, EPROM,EEPROM, RAM , clock and I/O ports. ATMEGA16A is a 8-bit Microcontroller with 16KBytes In -System Programmable Flash . Its Power Consumption @ 1MHz, 3V, and 25°CActive: 0.6mA Idle Mode: 0.2mA Power -down Mode: < 1µA. The ATmega16A is a low- power 8-bit microcontroller based on the Atmel AVR enhanced RISC architecture. Itexecutes instructions in a single cycle. ATmega16A achieves throughputs approaching1MIPS per MHz allowing the system design to optimize power consumption versusprocessing system. XTAL1 gives Input to the inverting Oscillator amplifier and input to the internal clock operating circuit. XTAL2 pin is used for Output from the invertingOscillator amplifier. Microcontroller is the heart of the circuit. It does the job of room lightcontroller as well as counting number of individuals entering and leaving a roomaccurately. µC continuously monitors the IR receivers and executes the program stored inits ROM when it receives the signal from the sensors.

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- **Expected Outcomes:**

To developed Smart Way of Controlling Traffic Signal

- **CONCLUSION:**

The proposed system can easily be implemented forcomplex roads since every track can be controlled separately. Since the vehicle ID is transmitted to the traffic light system, one can also include adaptive control on the traffic light pass time for every track based congestion. Special priority can also be added for emergency vehicle. In addition, Stolen car recognition can also be easily identified as in. A system for road signs recognition has been also designed and implemented. The experimental results showed that the proposed method was highly effective for both traffic lights and road signs detection systems.

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