International Journal of Research in Engineering and Science (IJRES)
ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
www.ijres.org Volume 9 Issue 6 ǁ 2021 ǁ PP. 38-41

Movable Road Divider For Organised Vechicular Traffic Control With Monitoring Over IoT

Mrs.A.Sunantha
Assistant Professor
Department of Electrical and Electronics Engineering
ACE Engineering college
Ghatkesar 501301 India

Vadakala Bhargavi
Department of Electrical and Electronics Engineering
ACE Engineering college
Ghatkesar 501301 India

Aleti Chandhan
Department of Electrical and Electronics Engineering
ACE Engineering college
Ghatkesar 501301 India

KarrolaVenkatesh
Department of Electrical and Electronics Engineering
ACE Engineering college
Ghatkesar 501301 India

***Abstract*:** *Road Divider is generically used for dividing the Road for ongoing and incoming traffic. This helps keeping the flow of traffic. Generally, there is equal number of lanes for both ongoing and incoming traffic. For example, in any city, there is industrial area or shopping area where the traffic generally flows in one direction in the morning or evening. The other side of Road divider is mostly either empty or under-utilized. This is true for peak morning and evening hours. These results in loss of time for the car owners, traffic jams as well as underutilization of available resources. Our idea is to formulate a mechanism of automated movable road divider that can shift lanes, so that we can have more number of lanes in the direction of the rush. The cumulative impact of the time and fuel that can be saved by adding even one extra lane to the direction of the rush will be significant. With the smart application proposed below, we will also eliminate the dependency on manual intervention and manual traffic coordination so that we can have a smarter traffic all over the city. An Automated movable road divider can provide a solution to the above-mentioned problem effectively. This is possible through IoT. IoT refers to Internet of Things where the actual digitalization comes into picture. Here sensors play a major role. We can achieve this using Arduino board. The sensors placed on the dividers sense the flow of traffic whether flow of traffic is smooth or not? If the flow is smooth on either side then there is nothing to worry but the lane which is having more traffic, the divider is moved to a certain distance to the smoother lane in order to smoothen the busy lane.*

***Keywords*—** *IoT-Movable Road divider-sensors.*

Date of Submission: 06-06-2021 Date of acceptance: 20-06-2021

I. INTRODUCTION

Nations around the globe are confronting issue of traffic problem because of increment in the number of vehicles. In spite of the fact that the quantity of vehicles utilizing the streets has been expanded, the static street foundation is nearly the equivalent and it can't adapt to the progressions like a blockage. The problem with static street divider is that the number of lanes on either side of the streets are fixed. whereas the assets are restricted and there is a critical increment in the number of vehicles on the street. This calls for better utilization of existing assets like a number of paths accessible. So as to conquer this issue, we structure a portable street divider which moves to rely upon the progression of traffic. The sensors can be worked by the microcontroller to recover the

information from them and update it to the web through Wi-Fi module associated with it. The IoT gathers the continuous information of vehicular which traffic that discovers the present traffic activity and traffic stream condition.The IoT will be associated with every single piece of traffic, for example, streets, dividers with the assistance of infrared sensors. As a rule, we see that there will be immense traffic on one side of the divider of a street and on the opposite side, there will be no traffic. In this sort of circumstance, it is conceivable to control the divider position consequently which decreases the traffic issues. The movable street divider helps in the arrangement of the street limit, in order to achieve ideal profit by the roadway utilization on the current street. By utilizing the development of divider, we can give traffic clearance for the emergency vehicle when it required.

II. BLOCK DIAGRAM

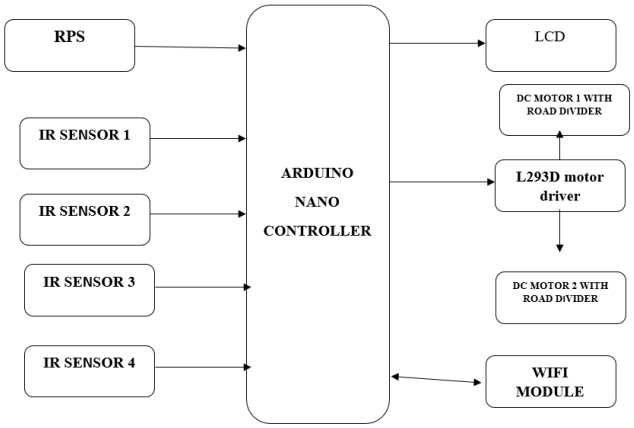


Fig 1 Block diagram

III.POWER SUPPLY

The input to the circuit is useful from the regulated power supply. The a.c. input i.e., 230V from the mains supply is step down by the transformer to 12V and is fed to a rectifier. The output gained from the rectifier is a pulsating d.c voltage. So, in command to get a pure d.c voltage, the output voltage from the rectifier is fed to a filter to remove any a.c components present even after rectification. Nowadays, this voltage is given to a electrical energy to get a pure constant dc voltage.

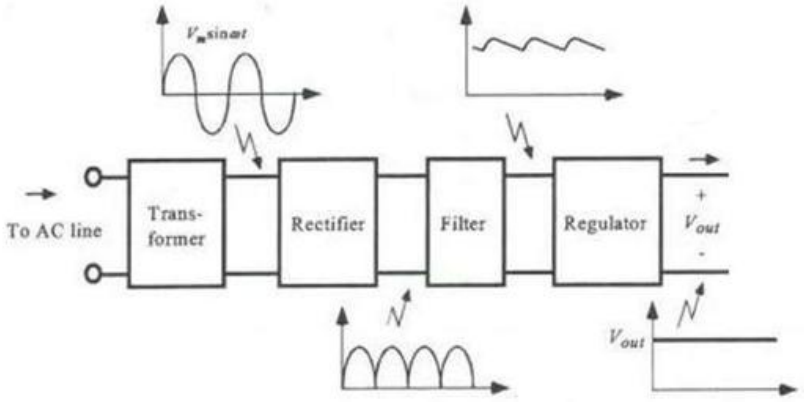


Fig 2.Power supply block diagram

IV . IR SENSOR

Basics of IR transmitter and receiver transmitter and receiver are commonly used in engineering projects for remote control of objects. In particularly, in Robotic system uses transmitter and receiver. Here I would like to describe the basics if IR transmitter and receiver

An electroluminescent IR LED is a product which requires care in use. IR LED's are fabricated from narrow band hetero structures with energy gap from 0.25 to 0.4 eV. Infra-red transmitter emits IR rays in planar wave front manner. Even though infra-red rays spread in all directions, it propagates along straight line in forward direction. IR rays have the characteristics of producing secondary wavelets when it collides with any obstacles in its path. This property of IR is used here..

V. L293D DC MOTOR DRIVER

A dc motor uses electrical energy to produce mechanical energy, very typically through the interaction of magnetic fields and current carrying conductors. The reverse process, producing electrical energy from mechanical energy is accomplished by an alternator, generator or dynamo. Many types of electric motors can be run as generators, and vice versa. The input of a DC motor is current/voltage and its output is torque.

The DC motor you will find in modem industrial applications operates very similarly to the simple DC motor described earlier in this chapter. Figure 12-9 shows an electrical diagram of a simple DC motor. Notice that the DC voltage is applied directly to the field winding and the brushes. The armature and the field are both shown as a coil of wire. In later diagrams, a field resistor will be added in series with the field to control the motor speed.

VI. THE DC SHUNT MOTOR

In a 2 pole DC Motor, the armature will have two separate sets of windings, connected to a commutator at the end of the shaft that are in constant touch with carbon brushes. The brushes are static, and the commutator rotate and as the portions of the commutator touching the respective positive or negative polarity brush will energize the respective part of the armature with the respective polarity. It is usually arranged in such a way that the armature and the poles are always repelling.

VII. LCD (LIQUID CRYSTEL DISPLAY)

Fluid Crystal Display additionally called as LCD is useful in giving UI just as for investigating reason. The most regularly utilized Character put together LCDs are based with respect to Hitachi's HD44780 regulator or other which are viable with HD44580. The most regularly utilized LCDs found in the market today are 1 Line, 2 Line or 4 Line LCDs which have just 1 regulator.

VIII. WIFI

A remote organization utilizes radio waves actually like TVs and radios do. Truth be told, correspondence across a remote organization is a ton like two-way radio correspondence.

A remote switch gets the sign and disentangles it. The switch sends the data to the Internet utilizing a physical, wired Ethernet association. The interaction likewise works backward, with the switch getting data from the Internet, making an interpretation of it into a radio sign and sending it to the PC's remote connector.

The radios utilized for Wi-Fi correspondence are basically the same as the radios utilized for walkie-talkies, cells and different gadgets. They can communicate and get radio waves, and they can change over 1s and 0s into radio waves and convert the radio waves once more into 1s and 0s. Yet, Wi-Fi radios have a couple of outstanding contrasts from different radios.

IX. SOFTWARE DETAILS

When Arduino IDE is introduced on the PC, associate the board with PC utilizing USB link. Presently open the Arduino IDE and pick the right board by choosing Tools>Boards>Arduino/Genuine Uno, and pick the right Port by choosing Tools>Port.

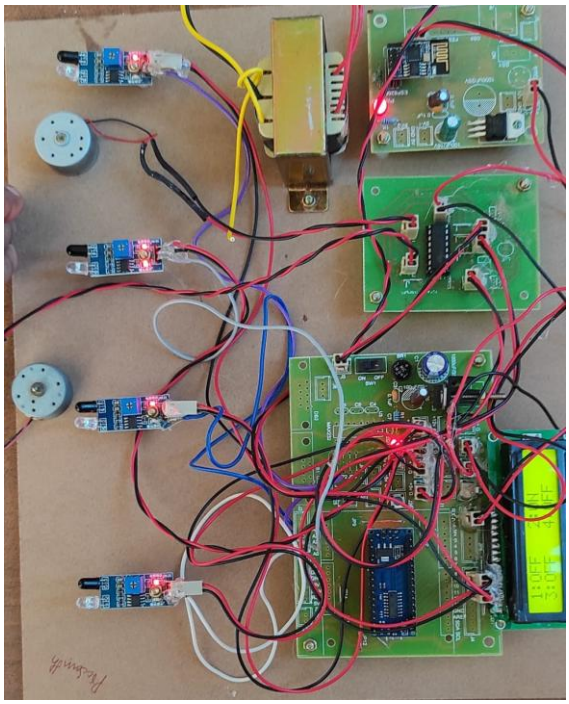
X.ARDUINO – INSTALLATION

In the wake of finding out about the principle parts of the Arduino UNO board, we are prepared to figure out how to set up the Arduino IDE. When we get familiar with this, we will be prepared to transfer our program on the Arduino board.

In this section, we will learn in easy steps, how to set up the Arduino IDE on our computer and prepare the board to receive the program via USB cable.

Step 1: Download Arduino IDE Software.
Step 2: Power up your board.
Step 3: Launch Arduino IDE.
Step 4: Open your first project.
Step 5: Select your Arduino board.
Step 6: Select your serial port.
Step 7: Upload the program to your board.

XI. RESULT



XII. CONCLUSION

Here undertaking, the road is related with a cloud which steady seeing of the traffic is done and the density of traffic is moved to the cloud. Traffic density which is open in the cloud can be used for a various purposes like traffic writes about various applications for example, here maps. In the wake of transferring traffic reports on a cloud by considering traffic force in three factors like LESS, MEDIUM, and the MORE road divider is moved by a small distance. In the event that force is LOW, at that point divider remains in its position. If the intensity is MEDIUM then divider moves by a little separation. In the event that intensity is HIGH, at that point divider moves by an enormous separation. The project additionally gives an answer for traffic clearance to the emergency and government vehicle.

REFERENCES

[1] B. Bharathi, B. Suchitha Samuel "Design And Construction Of Rescue Robot And Pipeline Inspection Using Zigbee" International journal Of Scientific, Engineering And Research (Ijser) Volume 1 Issue 1, September 2013

[2] Sridhar Palaniswamy " Life Saving Machine" The First International Conference On Interdisciplinary Research And Development, 31 May1 June 2011, Thailand.

[3] Manish Raj, P.Chakraborty And G.C.Nandi "Rescue robotics In Bore Well Environment" Cornel University Library [V1] Mon, 9 Jun 2014 10:51:44 Gmt(244kb).

[4] Venmathi, V., E. Poorniya, And S. Sumathi. "Borewell Rescue Robot." International Journal Of Computer Applications 113.14 (2015).