

Controlling of Smart Movable Road Divider and Clearance Ambulance Path using Internet of Things (IoT)

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Abstract: *Smart portable avenue divider gadget allows to clearing the visitors on avenue at some stage in top hours of the day and every time any ambulance and clearing the route the usage of this device. This gadget works in which site visitors at the ingoing aspect is greater in comparison to different outgoing aspect or vice-versa due to the fact site visitors on one side is more than the other side then only able to shift the divider is very slowly for safety purposes. Since the assets are restricted and populace in addition to quantity of motors in keeping with own circle of relatives is increasing, there's extensive growth in quantity of motors on roads. This requires higher usage of present sources like quantity of lanes available. For example, in any city, there may be business region or purchasing region in which the visitors usually flows in a single route with inside the morning or evening. The other side of Road divider is mostly either empty or much underutilized. This is proper for height morning and night time hours. This consequences in lack of time for the automobile owners, visitors jams in addition to underutilization to be had resources. Our aim is to formulate a mechanism of automated road divider that could shift lanes, in order that we will have variety of lanes with inside the path of the rush..*

Keywords: Road Divider.

I. INTRODUCTION

In current years, with an ever growing fee of improvement in metro towns around The world, there was proportional boom in numbers of cars at the roads. Although the range of automobiles the use of the roads has increased, the static street infrastructure is nearly the equal and is not able to address modifications like congestion, unpredictable travel-time delays and road- injuries which might be taking a critical shape. Traffic congestion has been one of the main issues confronted via way of means of the metropolitan towns these days regardless of measures being taken to mitigate and decrease it. It has emerged as one of the major mission for builders in city regions for making plans of sustainable cities In growing countries, like India, site visitors is inherently chaotic and noisy. Identification of significance of visitors congestion is an crucial requirement for outlining the congestion and locating suitable measures. The major cognizance of this paper is aimed toward knowledge the ordinary Congestion, its measurement, precautionary degree and shows a remedial degree for the same. The implication of widening current roads or constructing new ones will best outcomes extra visitors that maintains to upward thrust till top congestion returns to the preceding level. The overall to be had area in the metropolis for the development of roads, railways and different transportation is restricted. The paper discusses implementation of movable visitors dividers as congestion launch method for metropolitan regions rather than conventional answer of widening the roads.

The transportable site visitors divider facilitates in there configuration of avenue capacity, on the way to obtain foremost gain from roadway utilization on the present avenue. The hassle with Static Road Dividers is that the quantity of lanes on both facet of the street is fixed. Since the assets are restricted and populace in addition to quantity of motors according to own circle of relatives is increasing, there may be great boom in quantity of motors on roads. This requires higher usage of current sources like range of lanes available. The important purpose of this mission is to take the site visitors controlling to a brand new era. The purpose of the project is to decrease the time of the project is to decrease the

time of journey in the peak hours and to avoid traffic congestions and to provide a better and a smarter solution for the above said traffic problems.

We layout a movable street divider which actions relying at the float of traffic. The IOT compiles the real-time records of vehicular site visitors that unearths out the modern-day site visitor’s operation and site visitors glide conditions. The IOT might be related with every and each a part of visitors consisting of roads, dividers with the assist of infrared sensors. In many situations we see that there will be huge traffic on one side of divider of road and there will be no traffic on the other side. In this sort of Situations it's miles viable to govern the divider role mechanically which reduces the visitors problems.

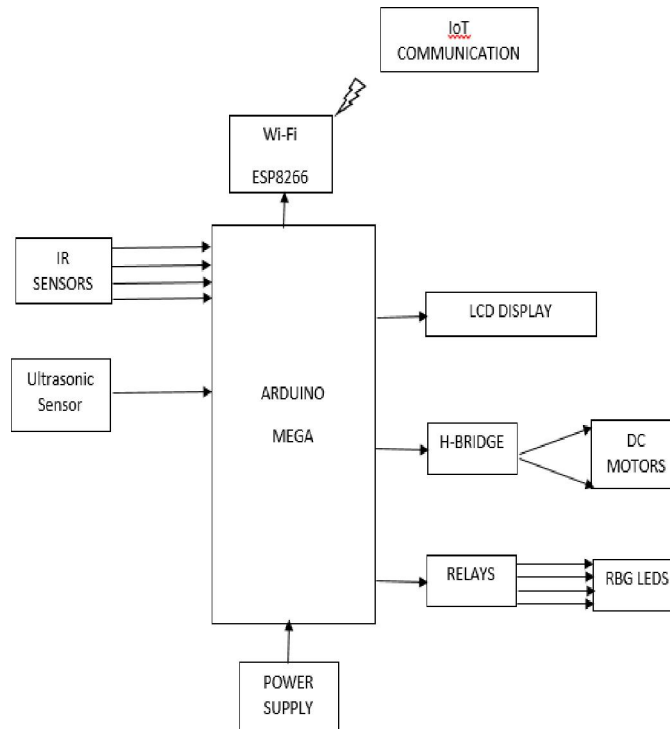


Fig 1: Block Diagram for the implementation of Road divider movement

In this paper the block diagram of the proposed and design aspect of independent modules are considered. Block diagram is shown in figure 1.

The paper presents the project on “Implementation of Movable Road Divider Using Internet of Things (IOT)” using microcontroller and it can be proved as an exclusive project which may be used to control traffic smoothly in major cities.

II. PROPOSED METHODOLOGY

In this proposed system, a module has been advanced primarily based totally on microcontroller that includes an ultrasonic sensor that's used for measuring the traffic. Whenever ambulance is detecting at the both of the street facet the shadeation of the street will extrade and show at the LCD show.

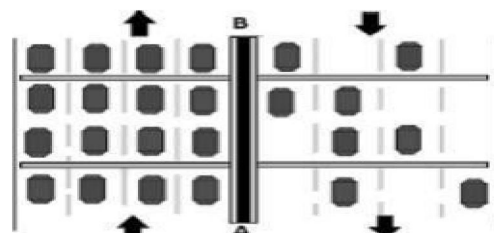


Fig. Functionality of proposed system

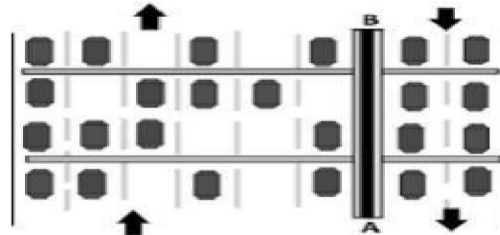


Fig.2 When traffic is heavy on left side of the road.

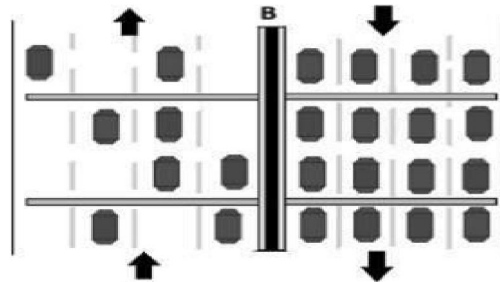


Fig.3 When divider is moved to the right side.

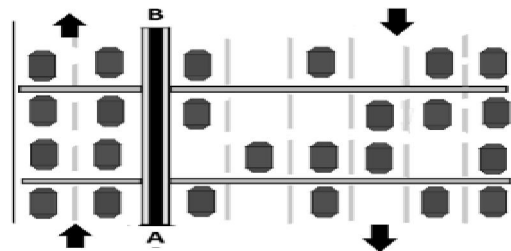


Fig. 4 When traffic on the right side of the road is high

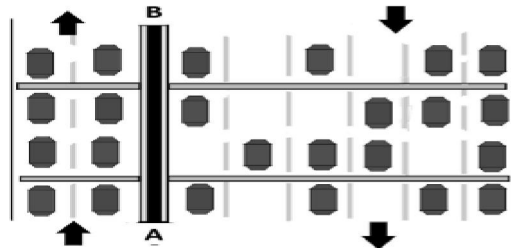


Fig.5 When divider is moved to the left side of the road

The proposed system shows that the module has been developed based on microcontroller that consists of an ultrasonic Sensors which is used for measuring the traffic density in this case and two dividers normal and extended. When the signal turns red, the traffic density is measured and the action should take place before the signals turns into green. If the traffic density is high then the extended divider comes up and the normal divider goes to ground position. Since the traffic density is high a message is delivered that ‘Alert PLS traffic density is high, extended divider is up’ to the nearest traffic control room If the site visitors density is everyday then no form of movement is taken and the everyday divider is up and the prolonged divider is to floor level. In this case the traffic density is normal then a message is delivered stating that ‘Traffic density is normal. Since its is a demo module, we are just showing for the one way of traffic flow.

III. RESULTS

The experiment was done on smart movable road divider with ambulance priority system and obtained the following results.

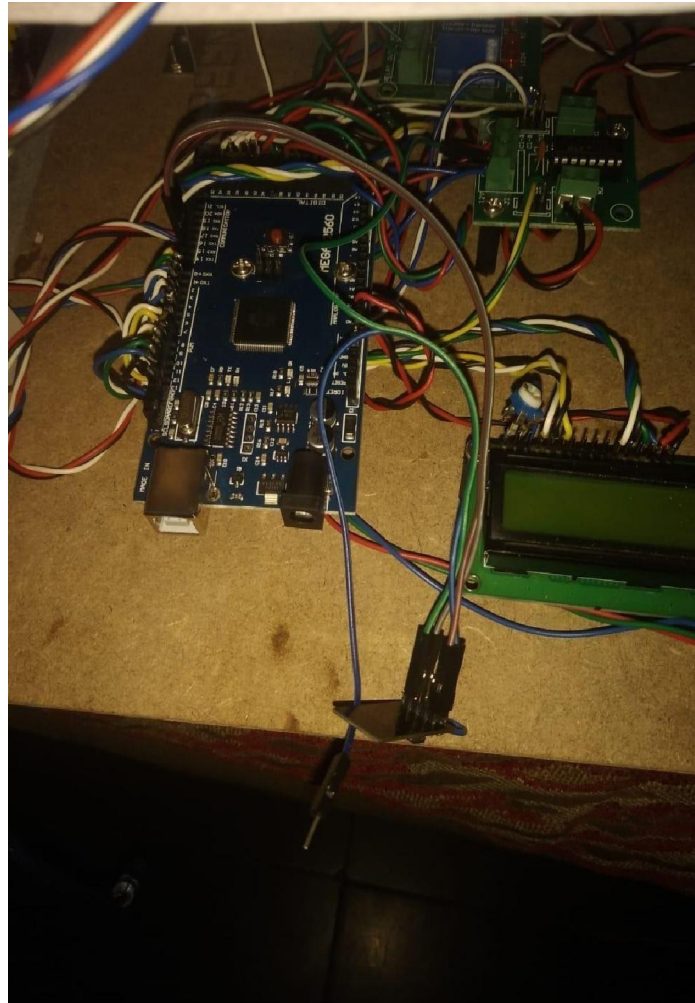


Fig. 6 The project set-up

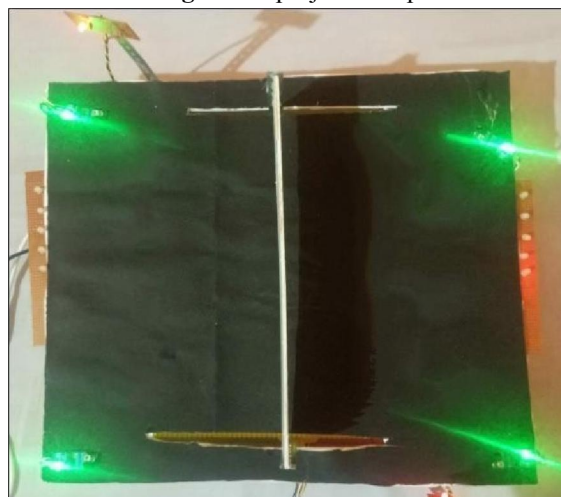


Fig. 7 Divider at the center

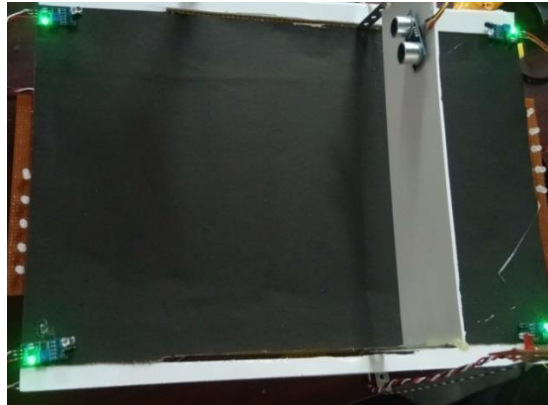


Fig. 8 Divider moved towards right side due to high Density of traffic in left side of the road

IV. CONCLUSION

In this venture the street is attached to cloud in which non-stop tracking of the visitors is performed and depth of visitors is uploaded to cloud. In short movable divider is capable of handling and solves the problems of traffic jams on one side of the road with other side is free from high traffic congestion. This proposed system provides the free path for an ambulance which ensures the ambulance to reach the destination on time or without any delay and the life of humans is more important. It also reduces the time of journey in peak hours and save time and fuel. It is feasible, secure and fewer requirements of wires which reduces the maintenance cost of this system. When the traffic is HIGH on the one side the road divider is moved to the opposite side and the road divider is moved accordingly. If intensity is LOW then

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