SCHOOLZ – E COMMERCE WEBSITE

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***Abstract*— The main aim of this project is to easy life of students, parents and schools / colleges at the time of reopening by using a simple E - commerce Website. This Website allow users to purchase all school accessories (ex: uniforms, tie, belt, shoes, socks, books etc..) of a particular school through online.**

**• It consists of different sections or categories for easy access and we can select size of product. This website provides discount on all products 24/7 days. This website is completely responsive and dynamic**

Keywords—congestion, density, road divider

# Introduction

Any technology today is made make our lives easy. Using the technology 'Internet of Things', we are making our lives more comfortable by a click away. It is quite import for the human to interact with the technology.The traffic congestion is a problem due to flourishing use of vehicles. The fixed road divider does not deal with the increasing number of vehicles. If this is the case, then the congestion problem can be a big problem in the coming future. To overcome this trouble, we should adapt changes in such a way that the road divider changes based on the traffic density. To modify the road divider, we should first understand why the problem traffic congestion arises. The traffic congestion may be due to road accidents taking place or it can also be due to large population travelling to the same area. Let us consider an example to understand why traffic congestion arises. As we know most of the IT firms are located at Hi-tech city. We are also aware of the fact that majority of the people are working for the IT firms. Almost all the IT industries start by 11 am in the morning. In this situation, all the employees of the IT industry try to reach their office by 11. Clearly, we can understand that majority of the people are travelling in a direction. This means we can understand that the fixed roads in the middle cannot accustom all the people. Let us consider a scenario where we can see the mere importance of displaceable road divider. Many of us might observed the traffic congestion problem during the office hours. This can be observed in the jntu to hitech city road. In this scenario, we put forward the idea of movable road divider in which the road divider moves to either left or right direction based on the density of the traffic.

To make the movable road divider possible, we need to develop a model which uses a sensor that can calculates the density of the traffic. And then, the information is to be send to the processor which can displace the road divider. If the movable road divider is implemented, then problems due to traffic congestion can be solved. Let us consider an example when is movable road divider useful. As seen in the above example, the solidity of the traffic is calculated and based on the solidity, the displacement of the road divider takes places before the traffic signal turns green by alerting the user that the road divider to moving. Subsequently, a partial zone is clear which can be displaced by the traffic. Thus, this takes less time in clearing the traffic. We conclude by saying that movable road divider can be used to solve a lot of problems as displaces the road divider based on the solidity.

# Literature survey

There are a lot of articles from various newspapers stating that traffic congestion is leading to a lot of problems. When I was going through various articles, I could gather a lot of reasons that lead to traffic congestion. The recent news paper article reads that traffic congestion is on the election day where all the voters are travelling to the polling booths to cast their votes. We can understand that there are a lot of reasons for which the fixed road divider is not suitable. To move the road dividers, we can also use zipper machines which can displace the road divider. The below figure shows you how a zipper machine can be used to move road divider.

A yellow truck on the street

Description generated with very high confidence

Fig 1: Zipper machine

If we want to use the zipper machines to displace the road dividers then it is not as feasible solution because no one can predict when will traffic congestion arise.

# Existing system

The model was developed in such a way that there are 2 road dividers on the road namely, normal and extended road divider. The solidity of the traffic is first measured and is send to the microprocessor which sends the signal for the extended road divider. The extended road divider comes to the picture while lowering the normal road divider. The distance for the extended road divider is pre-calculated. This is diagrammatically represented in the below figure.

![A close up of a device

Description generated with high confidence]()

Fig 2: Normal road divider to the left of extended divider(blue line)

If we consider the above figure, the blue line represents the extender road divider. And we can also observe that the solidity of the traffic is more on the left-hand side of the image. Thus, extended road divider should rise lowering the normal road divider.

![A close up of a device

Description generated with high confidence]()

Fig 3: Extended road divider to the right of normal divider (blue line)

In the above figure, we can clearly see that the extended road divider rises lowering the normal road divider. The blue line in the above picture represents the normal road divider.

# Proposed system

The major drawback of the existing system is that the extended road divider comes into picture if the density of the traffic is more. Subsequently, it means that we cannot alter the movement of the road divider based on the traffic density. And if we observe clearly, we don’t have a buzzer that alerts the user based on the displacement of the road divider. We propose a model that displaces the road divider. This means that the road divider displaces to the other side based on the solidity of the traffic calculated when the traffic signal is red. This helps to automatically determine the distance required to clear the density of the traffic by moving the road divider. As the distance is not pre-calculated, this model becomes a optimal solution to solve traffic congestion. In addition to this, it also alerts the people if the road divider is being displaced on that side.

**![A close up of a device

Description generated with high confidence]()**

Fig 4: heavy traffic on the left side

If we consider the above figure, the solidity of the traffic is high on the left side of the image while it is less on the other side.

**![A close up of a device

Description generated with high confidence]()**

Fig 5: road divider is displaced to the right side

Considering the high solidity on the left side, the road divider is displaced to the other side by producing a buzzer.

# Implementation steps

The implementation of the proposed model is quite simple if you follow the given steps. Firstly, we need to install the Arduino software from the internet. As this will help you in dumping the code to the microprocessor. Here, we are using Arduino UNO (Atmega 328) as the micro-processor.

A screenshot of text

Description generated with very high confidence

Fig 6: Pin diagram of Atmega 328

A screenshot of a social media post

Description generated with very high confidence

Fig 7: Arduino software

Secondly, we need to use sonar, atmega328, dual h-bridge

Motor l298, motor and buzzer that are connected in the sequence given in the data flow diagram.

A close up of text on a black background

Description generated with high confidence

Fig 8: Data Flow Diagram of the model

To connect the pins available on different components, you need to use the circuit diagram. The circuit diagram for the proposed model is given below.

A close up of a map

Description generated with very high confidence

Fig 9: Data Flow Diagram of the model

In addition to the components, we also need to connect the components to power supply. The power supplies used in the model are used to supply required power to the components.

# Results

A picture containing indoor, table

Description generated with high confidence

Fig 10: Complete circuit

Once the power supplies are connected to the circuit, it resembles as the above figure. Here, the pencil being placed on the board acts as a road divider. The pencil moves based on the density of the traffic.

A screen shot of a computer

Description generated with high confidence

Fig 11: Serial monitor displaying solidity of traffic

The above picture helps us in understanding the density of the traffic read by the sonar and then being transmitted to the Arduino board. The user can read the density of the traffic on the serial monitor of Arduino software.

A picture containing person, indoor, wall

Description generated with very high confidence

Fig 12: Object placed before sonar

The hand is placed in front of sonar, in the above picture, to tell the sonar about the density of traffic. In simple words, the hand resembles the density of the traffic. Once the sonar echo recognizes the hand, it sends the density to the Arduino board.

A screen shot of a computer monitor

Description generated with very high confidence

Fig 13: Serial monitor displaying solidity of traffic

The above figure shows the density of the traffic being noted by the sonar at regular intervals. In addition to this, this picture shows the density of the traffic being changed once the hand is placed in front of the sonar.

A picture containing indoor, wall

Description generated with very high confidence

Fig 14: Displaced road divider

Based on the density of the traffic recorded by the sonar, the arduino board sends the number of rotations to the motor driver to move to the road divider. Here, In the above picture, the pencil being placed on the board acts as a road divider.

# Conclusion

The proposed project undertakes a viable solution for the need of movable road divider at the very basic level, that is, on highways or the roads frequently used at the peak hours. The project will enable us to move from static road divider to a movable road divider such that we can overcome the problems being faced by the static road dividers such as accidents. In addition to this, the movable road dividers can tackle with all real-life scenarios where the solution is not only liable for a scenario.

The system is further simplified by allowing to control the traffic without any manual effort. In simple words, the traffic congestion can be cleared once the road dividers move based on the density. This way, the traffic congestion can be reduced at the faster rate without waiting for the police to arrive and then clear the congestion. This can be very useful at the locations where there is high probability of the traffic congestion at the peak hours.

The circuit is very simple and very scalable. This means that the circuit need not be modified for various densities of the traffic. The circuit can be accustomed with all kinds of roads as the sonar has to be placed correctly. If the sonar is placed correctly then this circuit greatly helps in reducing the traffic congestion. In addition to this, the traffic has also to be monitored before the circuit is placed at a location to note down how much distance the road divider must move to reduce traffic congestion.

This system, though primarily aimed to reduce human effort, will be of much importance to all the people driving their vehicles on the roads at the peak hours. It will enable them to control the traffic congestion with ease, without going through much pressure or stress of clearing the congestion. Due to the inexpensive materials used in the construction and further cost optimization if the device is taken to the market, it finds application in a wide area. Scalability of the project would be considerably easier as the device can be used on the roads with high possibility of traffic congestion at peak hours.

In addition, there are many advertisements broadcasted by the government of India promoting awareness to drive safely. Hence, such a project would assist the initiatives taken by the government, as most people do not follow the traffic rules which might lead to accidents then in turn to traffic congestion.

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