Hand Gesture Controlled Surveillance Robot using IOT

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ABSTRACT

The concept of this research work is to have an automatic speed breaker on time demand according to the requirements. Means when there is no need of the speed breaker on the road, it disappears from the road and the road becomes flat and when there is a need then the breaker comes on the road from ground and it starts its working of slowing speed of the vehicles. The main objective of the proposed system is used for controlling the speed of vehicle driving on the road way. In existing system, conventional speed breaker is not suitable when drivers stick within the speed limit and when emergency vehicle is passing through the road. The proposed system is a collapsible smart speed bump which serves to reduce the speed of the vehicle and which may be adjusted between a minimum and maximum height, using an elevation mechanism. The elevation mechanism works based on by detecting the speed of the vehicle passing through the road and speed is detected with the help of sensors fixed on the roads .The speed of the vehicle is reduced when necessary and traffic conditions so required.

Keywords: Conventional speed breaker, Collapsible smart speed bump, Elevation mechanism.

1. INTRODUCTION

In the rapidly changing world, the speed has become an important factor in human's life. Everyone wants to get fast as much as possible. In the fast speed world there are two perspectives, one is keeping speed and another is to maintain safety medium as well. So keeping speed is quiet easy for a person and incase of safety mediums there must be a lot of attention for safety purpose, preventing accidents on road, there is a conventional method of having concrete speed breaker on road. In case of conventional concrete speed breakers, there are found firm all the time on the road. These types of speed breakers are very useful on road but at the same time, these cause a great change in performance of the vehicles as well. In the system, real time clock is used to mention the required time for having the speed breaker on road. When time gets started, breaker comes on the road and remains until the countdown gets zero. In the Embedded system's clock any time and date can be stored on which the speed breaker is required on the road. So this type of speed breaker is useful before any building for which the time is specified for coming in the building and going out from it e.g. schools, any organization etc.

Figure 1.Concrete speed breaker

2. EXISTING METHODOLOGY

There is no adjustable speed breaker in the roadway so the vehicle speed is constant. Vehicles speed are limited if they move on normal speed. In addition to that the speed of the emergency vehicle get reduced. This creates problem in traffic condition. At night time speed

Bumps are hidden due to darkness.

3. PROPOSED METHODOLOGY

With the help of dc motor the speed bump is adjusted.IR sensor detects the vehicle and proximity sensor calculate vehicle speed with   help of pulses based on time. RF receiver gets activated based on speed of the vehicle by receiving RF signal from RF transmitter. Depend on speed, speed bump work. Driver within the stick of limited speed, no need to cross the speed bump otherwise he/she get extra burden to cover the speed bump. The intelligent speed bump divided into four sections on the road. Design of breaker is shown in figure 2. In this method fuel usage, time, pollution free is saved.

Figure 2. Adjustable speed breaker

4. OBJECTIVES

The purpose is to achieve the following objectives-

To have the speed of vehicle reduced before the place specified; for some time interval.

Here the main purpose of the breaker is to make the speed of the vehicle reduced before any place or organisations specified for which it has been installed.

To keep the speed of vehicle unchanged when reduction in speed is not required.

When there is no need to reduce the speed of the vehicle, the speed of the vehicle should be kept unchanged by making the speed breaker disappeared from the road. To have a greater mileage of vehicles in this time of increasing fuel rates speedily.

When the speed of the vehicle is reduced, the performance of the vehicle gets affected. So to keep the performance and mileage of vehicle positive, the speed should not be reduced or changed in this time when the fuel rates are increase at any time.

To make sure that one should pay attention before entering and exiting the organization or place specified by such types of speed breaker.
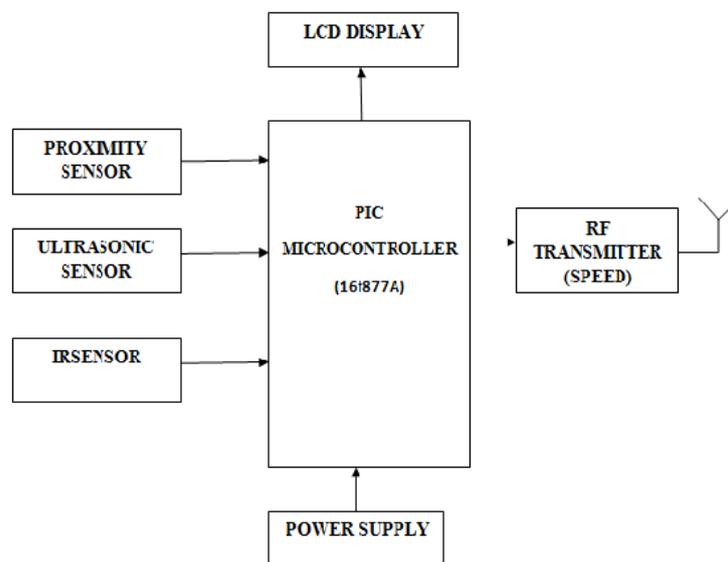
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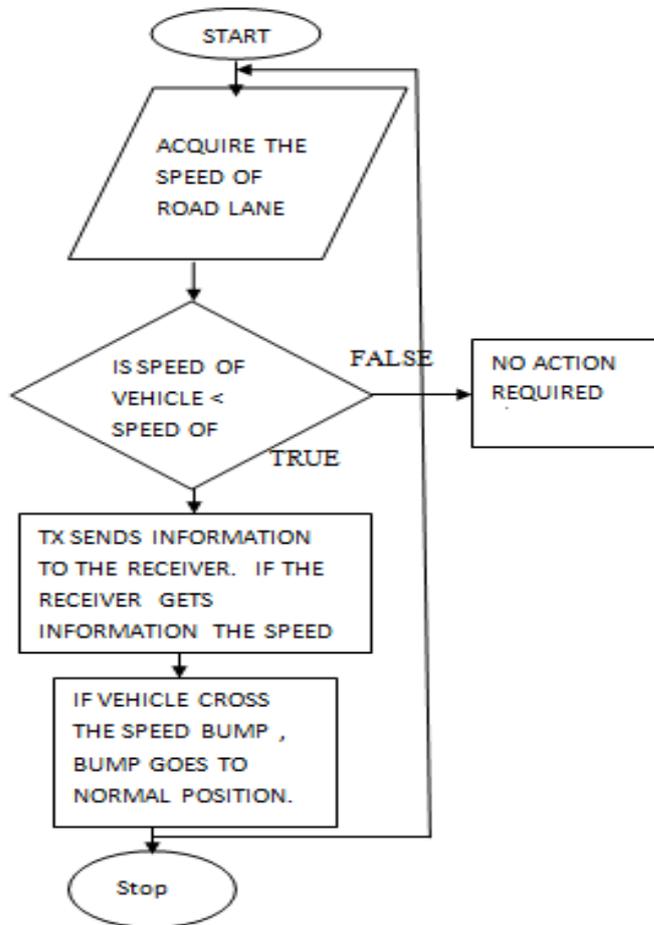
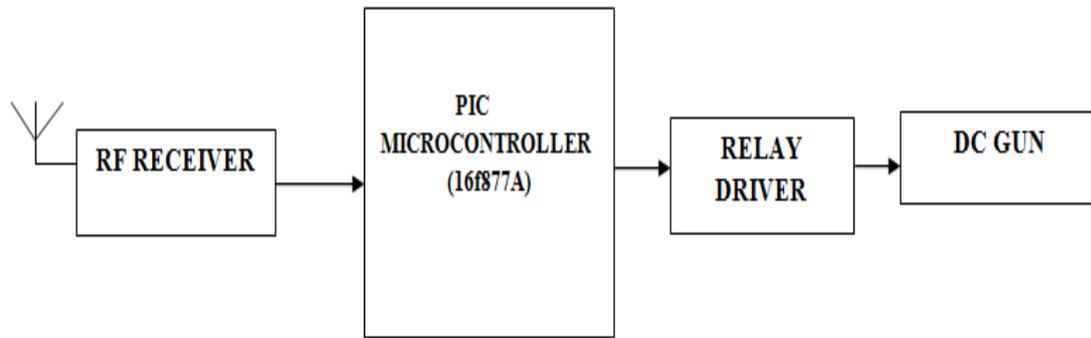## 6. BLOCK DIAGRAM

Figure 4.Transmitter

Figure 5.Receiver

The flow diagram figure shows the system working during initial stage the system acquire the speed limit on the road lane then it compares with the speed of the vehicle if it is less than the lane speed no action is performed on the other hand if the speed is greater than the lane speed a warning signal is given to reduce the speed.

7. HARDWARE DESCRIPTION

7.1 SPEED BUMPS

Speed bumps are the devices that use the vertical deflection on the road to slow down the moving traffic. They are suitable to reduce speeds of the vehicles to around 40 kmph for roads and/or 8 to 16 kmph for car parking. They are generally 1 to 3 feet long and 7 to 15 cm high.

8. PIC MICROCONTROLLER

PIC is referred to as peripheral interface controller, it is widely used in variety of embedded systems. This models use flash memory for program storage and also to reprogram itself. In this we use MPLAB series. It is low cost, wide availability, serial programming and re-programmable flash memory capability.

9. PROXIMITY SENSOR

It is able to detect the presence of nearby objects without any physical contact. It is used in machine vibration monitoring to measure the variation in distance between a shaft and its support bearing. It often emits an electromagnetic field and looks for changes in the field. The maximum distance that this sensor can detect is defined as "Nominal Range".

10. ULTRASONIC SENSOR

It can measure the distance to an object by using sound waves. It measures distance by sending out a sound waves at a specific frequency and listening for that sound wave to bounce back. The sound wave being generated and sound wave bouncing back, it is possible to calculate the distance between the sensor and the object.

11. IR SENSOR

IR sensor work by using a specific light sensor to detect a select light wavelength in the Infrared spectrum. By using an LED which produces light at the same wavelength as the sensor is looking for intensity of the received light. When an object is close to the sensor, the light from the LED bounces off the object and into the light sensor. This results in a large jump in the intensity, which we already know can be detected using a threshold.

12. LCD DISPLAY

A Liquid crystal display is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. In this project, it is used to display the operation that was performed.

13. CONCLUSION

In this paper we developed a new design to control the speed of the automobiles. In normal driving mode, we can expect other vehicles interfering nearby and possibly blocking or attenuating RF signals. In this aspect, we are going to use GPS location for restricted areas.

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