"ACCIDENT PREVENTION SYSTEM"

[1]Mrunal M. Jalindre, [2]DR. S.G.Galande

[1] Student *[2]*H.O.D, Associate professor & Guide
Department of Electronics & Telecommunication Engineering, PVP COE,
Pravaranagar, Ahmednagar

Abstract: *The issue of vehicle mishap is a piece of a perpetual rundown of debacles that could happen anyplace whenever. Measurably, they are viewed as the second driving reason for death. To beat such issues, numerous vehicle producers and car gadget organizations have endeavored to create speed control frameworks to keep up a vehicle safe separation.*
The quantity of mischances in India is most noteworthy on the planet. The real number of mischance number might be higher than archived. One individual bites the dust in each 4 min. It is a task with creative thoughts for wellbeing on streets and thruways. Here we are executing a task in which ultrasonic sensor and IR sensor used to decide the separation and ascertain speed. Assume speed is more prominent or separation less that time our robot will turn the course to stay away from mischance. Remote innovation additionally utilized RF and GPS with IOT.

Keywords: Raspberry pi, Arduino Uno, LCD, IR sensor, IOT, ULTRASONIC sensor, RF communication.

I.   INTRODUCTION

The car business around the globe has demonstrated a gigantic improvement in its creation over the current years. A great many vehicles are being delivered yearly. In any case, alongside these, the mishap rates are likewise getting essentially expanded. Accordingly, even the idealistic idea of individuals has turned out to be concerned while going outside. Joined States Department of Transportation information for 2005 from the Fatality Analysis, Reporting System demonstrates that for traveler autos, 18.62 deadly crashes happen per 100,000 enlisted vehicles. In 2009, 33,808 individuals kicked the bucket in vehicle car accidents just in USA. The vast majority of the mishaps happen because of human carelessness, for example, neglectful driving, absence of good framework, and so on. A prompt save process after a mischance can be considered as a tightrope stroll amongst life and demise. Any partial time deferral of arriving therapeutic help can cost the life of the casualties. An examination by Virtanen et al. demonstrates that 4. 6% of the fatalities in mishaps could have been anticipated just in Finland if the crisis administrations could be given at the place of the mischance at the correct time. All things considered, proficient programmed mishap identification with a programmed warning to the crisis benefit with the mischance area is a prime need to spare the valuable human life. Presently a-days, it turned out to be exceptionally hard to realize that a mischance has happened and to find the position where it has happened.

II.   LITERATURE SURVEY

In past, the following works were carried out by some people.

1 Gurjashan Singh Pannu, Mohammad Dawud and Pritha Gupta, "Design and Implementation of Autonomous Car using Raspberry Pi"- (2015)
In this paper center is around building a monocular vision independent auto model utilizing Raspberry Pi as a handling chip. A HD camera alongside a ultrasonic sensor is utilized to give vital information from this present reality to the auto. The auto is fit for achieving the given goal securely and insightfully along these lines maintaining a strategic distance from the danger of human blunders. Numerous current calculations like path recognition, deterrent identification are joined together to give the fundamental control to the auto.

2 Sumit Garethiya1, Lohit Ujjainiya and Vaidehi Dudhwadkar, "predictive vehicle collision avoidance system using Raspberry – Pi"- (2015)
In this paper, a successful technique is proposed for the impact shirking arrangement of a vehicle to distinguish the impediment introduce in front and blind side of the vehicle. The driver is made alarm by means of a bell and LED sign as the separation amongst vehicle and deterrent lessens and is shown in plain view board. The ultrasonic sensor identifies the condition of the question whether it is in movement or static as for the vehicle. This framework is valuable for distinguishing vehicle, bike, bike and people on foot that go by the parallel side of vehicle.

3 V. Sagar Reddy , Dr. L. Padma Sree and V. Naveen Kumar, "Design and Development of accelerometer based System for driver safety" – (2014)
This paper shows another outline of item equipment with modest and it expends less power composed arranged item to get data from mischance area of driver sluggishness and demonstrating be aware of the driver in the aversion of mishap.

This framework is outlined by utilizing Raspberry Pi (ARM11) for quick getting to control and accelerometer for occasion location. Is there any occasion is happens the message sent to the approved individual so they can make quick move to spare the lives and lessen the harms.

4 M.H Mohamad, Mohd Amin Bin Hasanuddin, Mohd Hafizzie Bin Ramli, "Vehicle Accident Prevention System Embedded with Alcohol Detector" – (2013)

An effective arrangement of vehicle mishap aversion framework inserted by liquor identifier has been proposed. This framework skilled to alarm the driver about the level of intoxication by shows the condition on LCD show. It additionally deliver a caution from signal to make the driver mindful their own condition and to careful other individuals in encompassing region. The most security component gave by this framework is the driver in abnormal state of intoxication isn't permitted to drive an auto as the start framework will be deactivated.

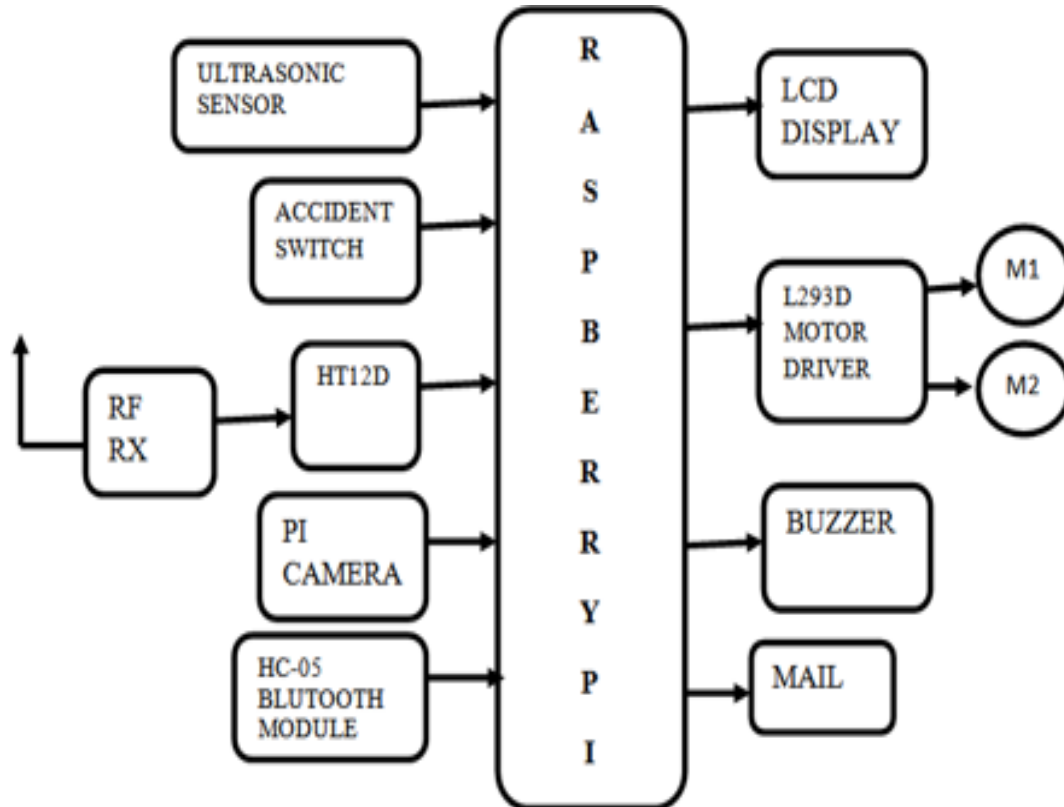### III.   SYSTEM ARCHITECTURE

Fig.: System Architecture (Moving Robot)

IV.   PROPOSED SYSTEM

- Here we are utilizing Arduino Uno and Arduino mega and raspberry pi as a controller.
- Cameras catch the picture when mischance happen and send letters to specific mail id.
- Ultrasonic sensor used to detect the separation between two vehicles.
- IR sensor used to detect the speed of vehicle. In the events that speed is more prominent than limit speed. At that point mail sent to respective versatile number. Also, RF utilized for sending string if speed is high.
- All data will be shown on LCD.
- Robot 3 is utilized which consistent move in forward is bearing.
- If mishap happen that time robot will change its position like robot will move either left or right bearing.

V.   OBJECTIVES

Giving financially savvy answer for deflect vehicular mishaps especially for substantial vehicles are an inescapable test for Indian trucks. The prime undertaking of this work is the use of raspberry pi, an ease single board PC. The fundamental target of this task is to spare precious human life due to visit mishaps which are occurring in nowadays are because of encroachment of the set tenets and directions and furthermore inconsiderateness with respect to the drivers.
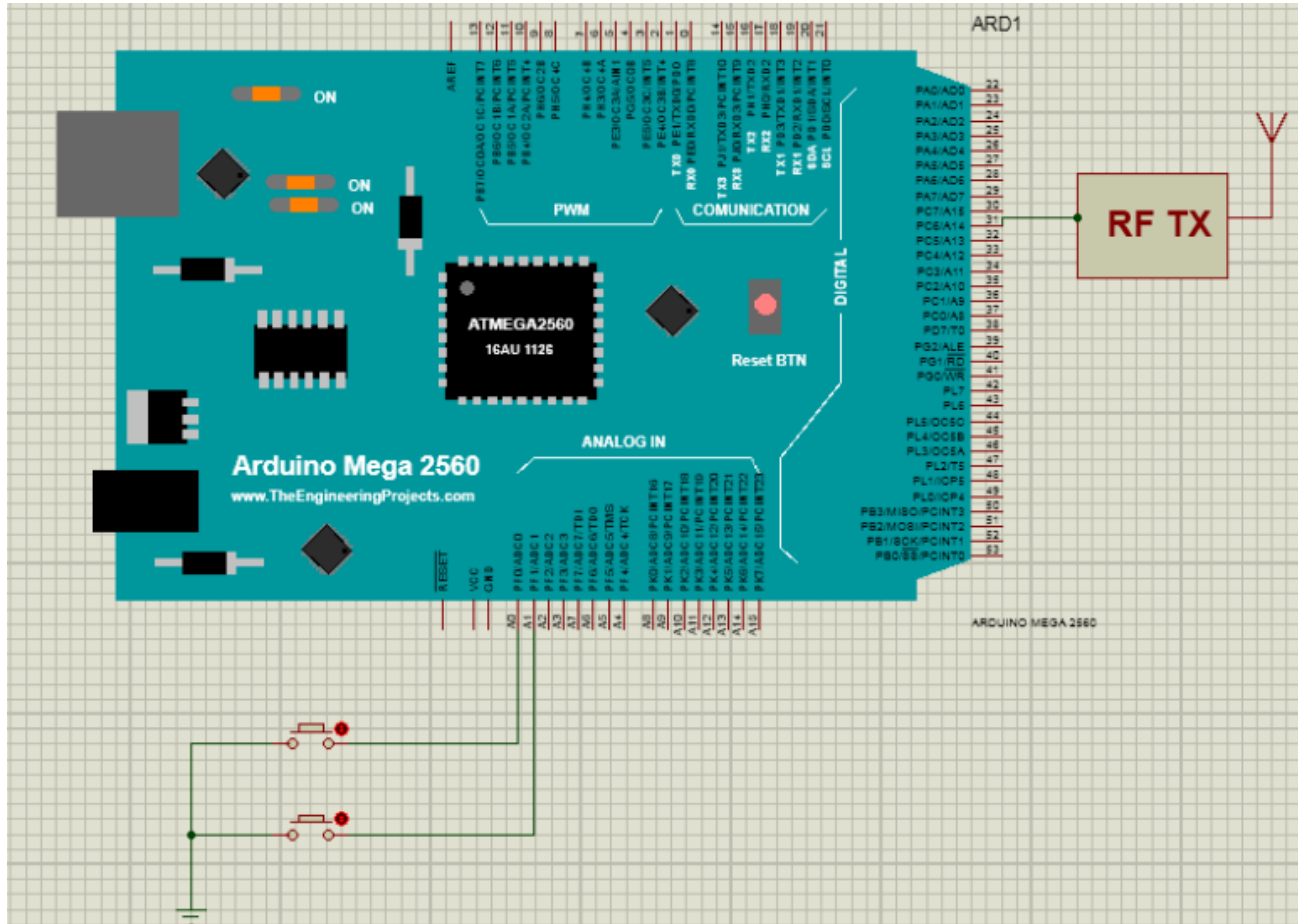
VI.   CUIRCUIT DIAGRAM

Fig. 2 Circuit Diagram

VII.   CONCLUSION AND FUTURE WORK

Behind the outlining of this framework, our primary point is to enhance the strategy of avoidance of mishaps and furthermore diminishing the risk from mischances like harm of vehicle, damage of people, and so forth. This task work has given us a fantastic opportunity and experience, to utilize our constrained learning. We have increased commonsense information in regards to, arranging, buying, collecting and machining while at the same time doing this extend work. In conclusion comments of our undertaking work, we have built up a "Vehicle collision PREVENTION and DETECTION SYSTEM".

VIII.   FUTURE SCOPE

- In future we can add GPS if anybody steals our car we can easily find our car around the globe.
- By keeping vehicle positioning on the vehicle.
- We can use our kit for detection of bomb by connecting to the bomb detector.

ACKNOWLEDGMENT

To develop Accident Prevention System that accurately updates databases according to the weights of goods and maintains transparency in the system and prevents forgery and exploitation of masses caused by consumer.

REFERENCES

[1] Gurjashan Singh Pannu, Mohammad Dawud and Pritha Gupta "Design P. S. Huang, C. S. Chiang, C. P. Chang, and T. M. Tu, "Robust spatial watermarking technique for colour images via direct saturation adjustment," Vision, Image and Signal Processing, IEE Proceedings -, vol. 152, pp. 561-574, 2005.

[2] V.Sagar Reddy , Dr.L.Padma Sree , and V. Naveen Kumar, "Design and Development of accelerometer based System for driver safety", International Journal of Science, Engineering and Technology Research (IJSETR), Volume 3, Issue 12, December 2014

[3] M.H Mohamad, Mohd Amin Bin Hasanuddin, Mohd Hafizzie Bin Ramli, "Vehicle Accident Prevention System Embedded with Alcohol Detector", International Journal of Review in Electronics & Communication Engineering (IJRECE),Volume 1 - Issue 4 October 2013

[4] A. Bar Hillel, R. Lerner, D. Levi, & G. Raz."Recent progress in road and lane detection: a survey." Machine Vision and Applications, Feb. 2012, pp. 727–745

[5] Narayan Pandharinath Pawar, and Minakshee M.Patil, "Driver Assistance System based on Raspberry Pi", International Journal of Computer Applications , Volume 95– No.16, June 2014.

[6] Sumit Garethiya1, Lohit Ujjainiya and Vaidehi Dudhwadkar, "Predictive vehicle collision avoidance system using Raspberry – Pi", ARPN Journal of Engineering and Applied Sciences, Vol. 10, May 2015.

[7] Smart Vehicle Accident Detection and Alarming System Using a Smartphone 1st International Conference on Computer & Information Engineering, 26-27 November, 2015 Organizer: Dept. of CSE, Rajshahi University of Engineering & Technology, Rajshahi, Bangladesh

[8] Bankar Sanket Anil, Kale Aniket Vilas, Prof. S. R. Jagtap" Intelligent System for Vehicular Accident Detection and Notification" International Conference on Communication and Signal Processing, April 3-5,2014, India

[9] Md. Syedul Amin, Jubayer Jalil" Accident Detection and Reporting System using GPS, GPRS and GSM Technology" IEEE/OSA/IAPR International Conference on Informatics, Electronics & Vision

[10] D.Bindu Tushara "Wireless Vehicle Alert and Collision Prevention System Design using Atmel Microcontroller" International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) - 2016