ISSN: 2456 – 043X
International Journal of Engineering Science and Generic Research (IJESAR)
IJESAR : A Innovative Publication Center
Available Online at: www.ijesar.in
Volume – 3, Issue – 3, May – Jun - 2017, Page No. : 44 -47

Automatic Accident Detection and Notification System

[1]Beauty Kumari, [2]Shiksha Pandita
[1]B.Tech Scholar, [2]Assistant Professor
[1] kumaribeauty2595@gmail.com, [2]shriyashiksha@gmail.com

Abstract

Parking spot monitoring can be used for various smart parking applications. One particular use is detecting the city wide occupancy level of the parking spaces and redirecting cars accordingly to reduce congestion. The practice of monitoring parking spots is already widespread in modern off-street parking lots. However, a large fraction of a city's parking capacity still stems from on-street parking spots. These aren't yet monitored as commonly. This can be explained by higher deployment costs for on-street implementations. In light of improving the adoption of on-street parking spot monitoring, this paper evaluates a novel approach to reduce these deployment costs. The idea is to provide sensor readings on only a fraction of the parking spots and use extrapolation to calculate city wide saturation levels. This reduces the number of sensors that has to be installed and consequently lowers the network cost. We propose a new "smart parking" system for an urban environment. The system assigns and reserves an optimal parking space for a driver based on the user's requirements that combine proximity to destination and parking cost, while also ensuring that the overall parking capacity is efficiently utilized

Keywords: vehicle information displays, vehicle reversing, vehicle parking, display design, vehicle design, human factors.

INTRODUCTION TO MAJOR PROJECT ON PARK AIDS:

Parking aids are advanced driver assistance systems designed to make parking easier. Such systems monitor an area of between roughly 20 and 250 cm in front of and behind the vehicle and warn the driver about any obstacles. Now days in many multiplex systems there is a severe problem for car parking systems. There are many lanes for car parking, so to park a car one has to look for the all lanes. Moreover there is a lot of men labor involved for this process for which there is lot of investment. So the need is to develop a system which indicates directly which parking slot is vacant in any lane. The project involves a system including infrared transmitter and receiver in every lane and a LED & LCD display outside the car parking gate. So the person entering parking area can view the LED display and can decide which lane to enter so as to park the car. Conventionally, car parking systems does not have any intelligent monitoring system. Parking lots are monitored by human beings. All vehicles enter into the parking and waste time for searching for parking slot. Sometimes it creates blockage. Condition become worse when there are multiple parking lanes and each lane have multiple parking slots. Use of automated system for car parking monitoring will reduce the human efforts. Display unit is installed on entrance of parking lot which will show LEDs for all Parking slot and for all parking lanes. Empty slot is indicated by the respective glowing LED.

Light emitting diodes (LEDs) were first developed in the 1960s, but only in the past decade have LEDs had sufficient intensity for use in more than a handful of lighting applications (Stringfellow and Craford 1997), and specifiers are confronted with an increasing number of lighting products that incorporate LEDs for certain applications. Primarily, these applications have taken advantage of the characteristics of LEDs that have made them most suitable for indication, not illumination (Bierman 1998). The light generated by the LED is not particularly bright and mostly it is monochromatic. The output can range from red to blue and violet. Another form of LED known as infrared-emitting diode emits infrared energy instead. Conventional LEDs are made from a variety of inorganic semiconductor materials such as those from aluminum, gallium, silicon, indium, and zinc. They are used to produce different colors, for example, aluminum gallium phosphide is used to produce green LED, aluminum gallium arsenide us used to produce red, and aluminum gallium nitride is used to produce near to far ultraviolet, etc.

METHODOLOGY

Two studies were conducted, one a retrospective analysis of 100 pre-parked vehicles where drivers were not aware that their parking alignment was going to be assessed when they originally parked. The second was a dynamic study where participants parked an EV aiming to align with a charging pad with no bay markings as guidance. For both studies the measure of parking accuracy, or success of the parking task, was defined by the position of the centre of the vehicle to the centre of the parking bay. This definition removed any vehicle or bay size effect from the comparative analysis.

The retrospective measurement methodology offers the benefit of naturalistic with real-world data being collected. However, it will not be able to determine the specific parking goal of the driver, or to what extent being aware their parking accuracy is being assessed will alter actual alignment. In addition no context was available as to why the driver chose to park as they did. It is entirely possible that drivers chose to park 'misaligned' either to allow sufficient space for them to exit the vehicle or gain access to the boot. It could be assumed that when users know they should be parking as accurately as possible, an improvement in both lateral and longitudinal control will be observed. This was the intention and purpose of the second, dynamic study.

SYSTEM ARCHITECTURE

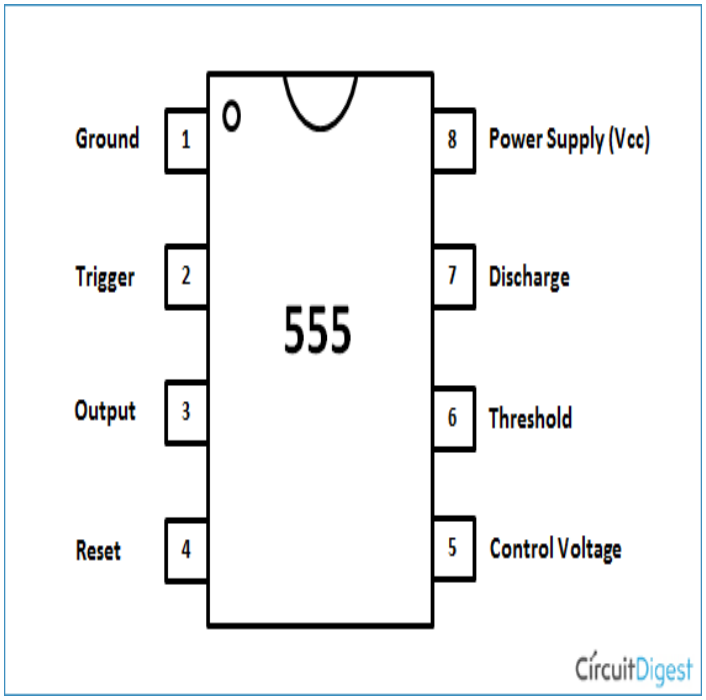

Fig1:- 555 Timer IC [1]

HARDWARE DESCRIPTION

TRANSMITTER AND RECIVER PART OF PARK AIDS:

This car parking assistant can protect your car from any damage while reverse parking. It indicates the distance of car from any object and raise an alarm when it reaches close to the wall or the object and needs to be stopped. This **car parking circuit** is quite easy and uses few

commonly available components Two operational aspects which are important are: The minimum distance from the sensor to your car bumper must be at least 1' 4" (16 inches); and there must be no obstructions to the left/right of the sensor for about 3 feet.

As you either drive forward into or back into the garage, the unit first senses the car at about 15 feet out and the green light shines, Then, as you slowly go further in, the yellow light shines. Lastly, when you arrive at the distance you have set, the red light shines and you stop.

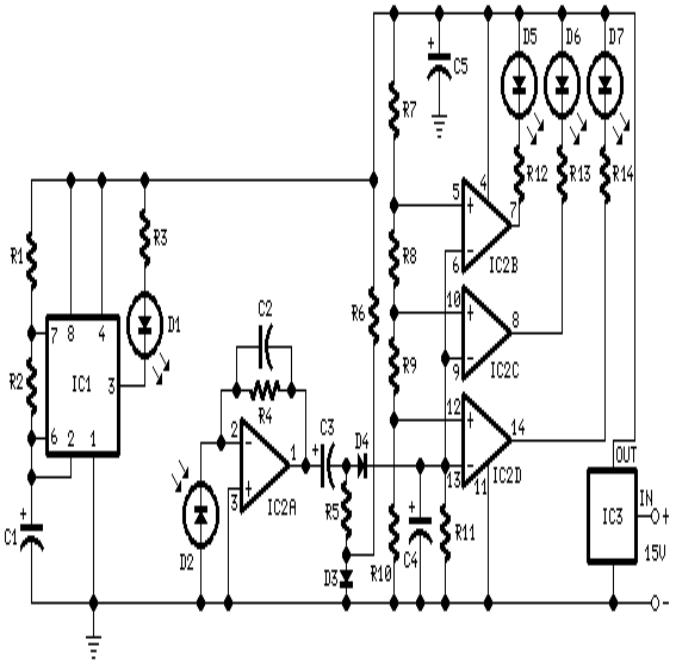

Fig2: Transmitter and Reciver Part of Park Aids.

LM324 IC USED IN RECIVER:

LM324 is a Dual Low Noise **Operational Amplifier** which has Two Op-Amp in a single chip. This is a general purpose op amp which can be configured in many modes like comparator, summer, integrator, amplifier, differentiator, inverting mode, non- inverting mode and many more.

SOFTWARE DESCRIPTION

Op-amps are high gain electronic voltage amplifier with differential input and, usually, a single-ended output. The output voltage is many times higher than the voltage difference between input terminals of an op-amp.These op-amps are operated by a single power supply **LM324** and need for a dual supply is eliminated. They can be used as amplifiers, comparators, oscillators, rectifiers etc. The conventional op-amp applications can be more easily implemented with LM324.

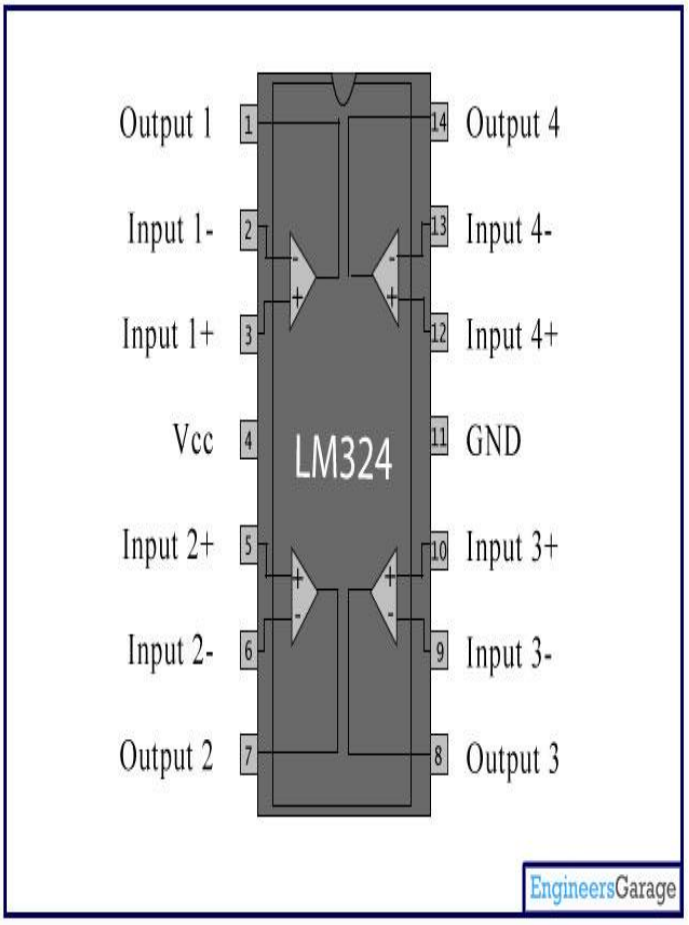

Fig5.10: Pin Diagram Of LM324 [3]

CONCLUSION

My experience at AIRPORT AUTHORITY OF INDIA was quite a memorable one. Not only it has offered me internship, but also the basic experience a trainee needs to be in an organisation. Moreover it also taught me the way a corporate person lives in an organisation.Hence driver behaviour and parking alignment was the focus for this paper. Results from both the retrospective and dynamic studies suggest that drivers are more accurate at parking

laterally than in the longitudinal direction. A reason for this may be that drivers can align the sides of the vehicle as a guide, whereas judging the position of the front or rear of the car is more difficult (without parking aids). Larger vehicles and the presence of parking sensors also had a significant positive effect on parking accuracy.

FUTURE SCOPE

This can be expanded in the sense of security. Using metal detectors and CCTV cameras security of the parking area can be enhanced.We can add pick and place facility to park the cars automatically. Future research should be conducted to substantiate results from the dynamic study. This paper presents a 'pilot' analysis with only 10 participants, one parking scenario, and two conditions. Future research should focus on incorporating different parking tasks, such as parallel and bay parking, and also increasing the number of participants evaluated. Some unanswered questions still remain about the impact of vehicle size on parking accuracy. An interesting finding from this study was that larger vehicle parked more accurately (i.e. the centre of the vehicle was closer to the centre of the bay) compared to smaller ones; however, we were not able to determine if this was as a result of the presence of parking sensors on larger vehicles, or personal preference of smaller vehicle drivers to park 'less accurately'.

REFERENCES

[1] Gadgil, S., Green, P., 2005. How much clearance drivers want while parking: data to guide the design of parking assistance system.

[2] N. Pearre, W. Kempton, R. Guensler, V. Elango Electric vehicles: how much range is required for a day's driving? Transp. Res 19 (2011).

[3] Wallis, N., Lane, B., 2013. Electric vehicles: Improving consumer information to encourage adoption. European Council for Energy Efficient Economy.

[4] D. Teodorovic and P. Lucic. Intelligent parking systems. European Journal of Operational Research, 175:1666-1681, 2006.

[5] R. G. Thompson and P Bonsall. Driver's response to parking guidance and information systems. Transport Review.

[6] Y. Geng and C. G. Cassandras. Dynamic resource allocation in urban settings: A "smart parking" approach. IEEE Multi-Conference on Systems and Control.