Internet of things(IOT)

A) SMART PARKING USING IOT

Team members

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INTRODUCTION

The concept of Internet of Things (IoT) started with things with identity communication devices. The devices could be tracked, controlled or monitored using remote computers connected through Internet. IoT extends the use of Internet providing the communication, and thus inter-network of the devices and physical objects, or 'Things'.

Internet means a vast global network of connected servers, computers, tablets and mobiles using the internationally used protocols and connecting systems. Internet enables sending, receiving, or communicating of information. Thing in English has number of uses and meanings. Dictionary meaning of 'Thing' is a term used to reference to a physical object, an action or idea, situation or activity, in case when we do not wish to be precise. IoT, in general consists of inter-network of the devices and physical objects, number of objects can gather the data at remote locations and communicate to units managing, acquiring, organizing and analyzing the data in the processes and services. It provides a vision where things (wearable, watch, alarm clock, home devices, surrounding objects with) become smart and behave alive through sensing, computing and communicating by embedded small devices which interact with remote objects or persons through connectivity.

PROBLEM STATEMENT & OBJECTIVE

Problem Statement

- Parking management influences drivers search time and cost for parking spaces.
- It may also causes traffic congestion.
- Finding a parking space in most metropolitan areas, especially during the rush hours, is difficult for drivers.
- Difficulty arises from not knowing where the available spaces may be at that time traffic congestion may occur.

Objective

- Parking space reservation can help drivers to reduce the search time dramatically.
- With the real-time reservation service, the drivers can find and reserve their desired vacant parking spaces quickly.

Therefore, the gasoline and time in search of vacant parking space is reduced.

- It reduces time in search of vacant parking spaces is reduced so it reduces traffic congestion caused due that.

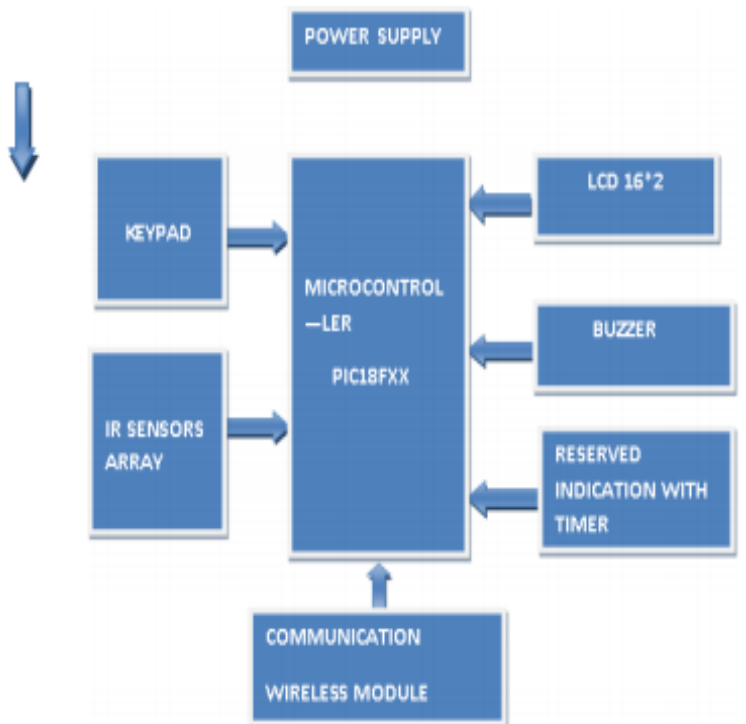
BLOCK DIAGRAM

√ Power Supply

Power supply gives 5v supply to the PIC microcontroller and other block also work on 5v DC.

√ IR Sensor

The IR sensor used to detect the car in parking. If car is present then it shows on cloud as that parking slot is allowed if not
allowed then it will shows that parking slot empty.



✓ Reservation

If you booked parking then from booking time then it will booked for next 5 minutes and countdown start at timer.

✓ Buzzer

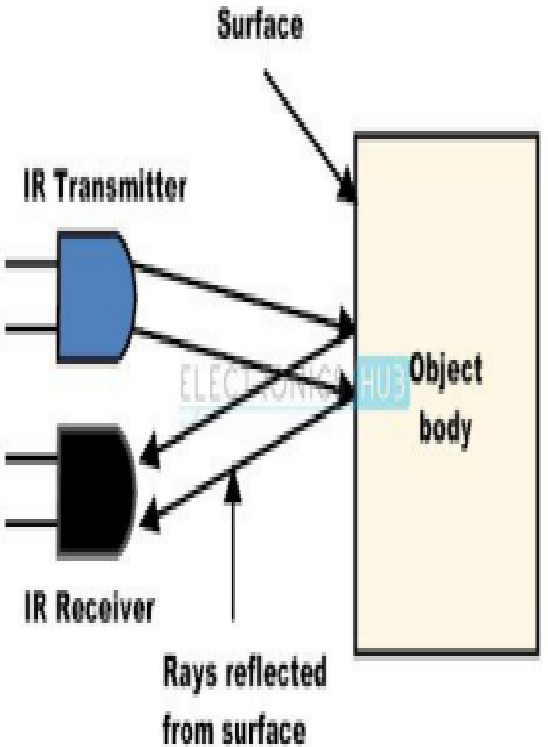
If any other person parked their car in booked slot then alarm will get buzzed periodically for some time as per set.

✓ LED

On LED we will show the indication of booked slot.

✓ LCD

LCD part is used in security area for check out the parking is allotted or free



Algorithm

✓ Start.

✓ Turn on the power supply.

✓ IR sensor will get activated.

✓ Search online for empty parking slot from android application.

✓ Space detection will start.

✓ If space is detected data sends and stored on cloud by sending system status by GSM.

✓ LED will start showing the number of parking slots

✓ Display on front LCD that the slot is booked.

✓ Else go to step 5.

✓ Shows space on cloud.

✓ We can now book empty parking slot online.

✓ LED indication will get off.

✓ IR sensor will open a gate.

✓ End.

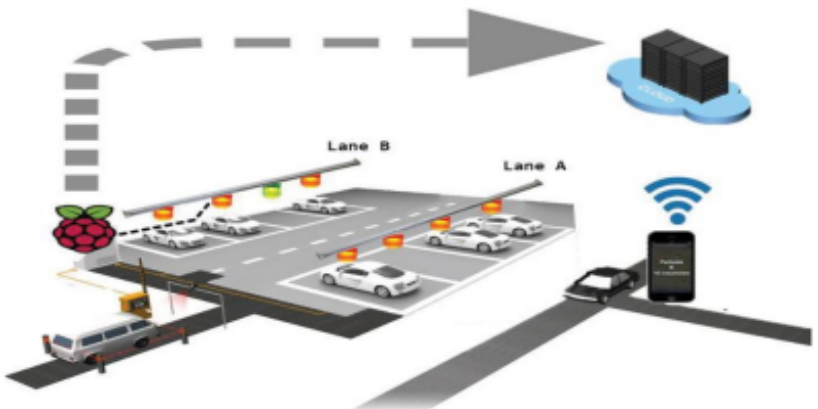
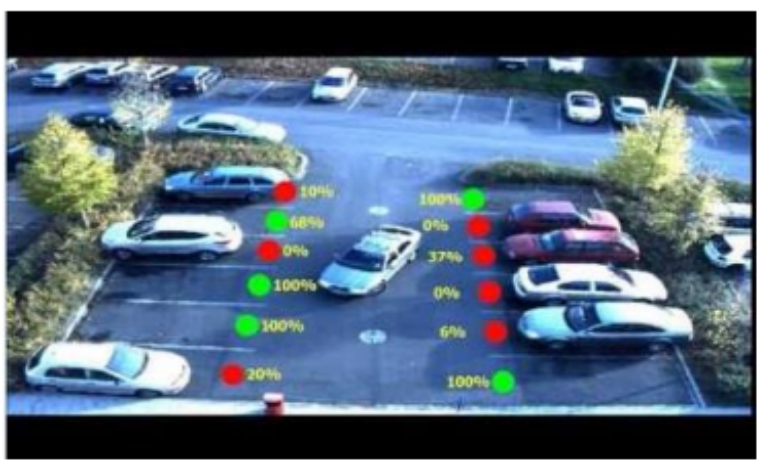


Figure 1: Smart Parking System



CONCLUSION

The concept of Smart Cities have always been a dream for humanity. Since the past couple of years large advancements have been
made in making smart cities a reality. The growth of Internet of Things and Cloud technologies have given rise to new possibilities
in terms of smart cities. Smart parking facilities and traffic management systems have always been at the core of constructing smart
cities. In this paper, we address the issue of parking and present an IoT based Cloud integrated smart parking system. The system
that we propose provides real time information regarding availability of parking slots in a parking area. Users from remote locations
could book a parking slot for them by the use of our mobile application. The efforts made in this paper are indented to improve the
parking facilities of a city and thereby aiming to enhance the quality of life of its people.

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