# NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY PRESENTS
# SMART PARKING SYSTEM USING IoT

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## ABSTRACT

This era of twentieth century is called the "Era of Information Technology" where the computers were flourished to an unimaginable extent. At the start of twenty first century cloud computing came into existence and after few years we felt the importance of cloud and its capability of distributed computing. Today cloud has become so popular that even a common man without the knowledge of computers is able to use cloud without breaking a sweat. In this world where the technology is flourishing rapidly, "Internet of Things" is the future generation by which it is estimated that by the end of 2020 more than 20 billion devices will use Internet of Things (IoT) according to the Gartner's report.

This proposed prototype will bring a revolution in the field of traffic management system where the vehicle parking plays a vital role. Here it concentrates mainly on increasing drastically efficiency and automation of the parking system.

## BACKGROUND

The following steps indicate the inefficient method incorporated in the parking lots present in India.

- The user's registration number is noted.
- The user's entry time is noted in a piece of paper which the user is expected to present at the time of exit.
- The user's exit time is noted when the user is exiting from the parking lot manually and the final bill is given on demand.

The following steps indicate the in somewhat efficient method incorporated in the tolls present in India.

- There exists an administrator who is responsible to manage the entry and exit of vehicle in that counter number only.
- The user's vehicle is scanned using the barcode or the camera and with the help of image processing algorithm the software derives the car's registration number.
- The entry time is entered manually and a barcode enabled receipt is generated.
- This receipt is to be submitted at the time of successful exit and the fee is paid through the medium of cash only.

## OBJECTIVES AND ASSUMPTIONS

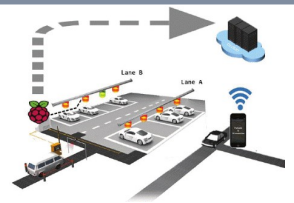
**Objectives**

a. Simple, Efficient and Highly Secure
b. Complete Automation of the System
c. Cost Effective. (One time Investment)

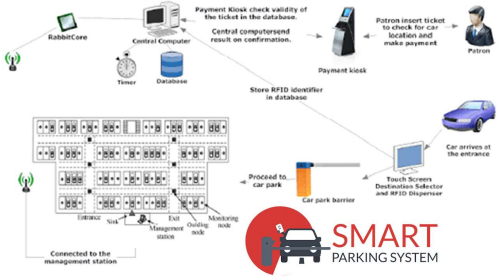
Assumptions

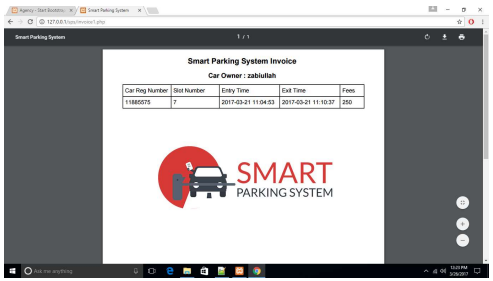
1. RFID of the car itself is the car's registration number.
2. This system offers user a slot at his convenience.

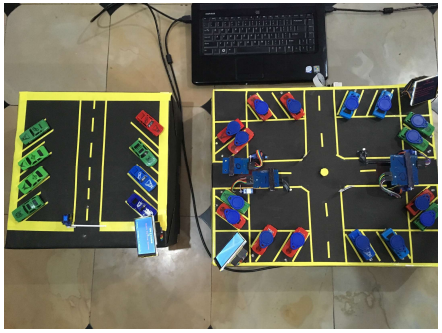
## PROPOSED WORKING PRINCIPLE



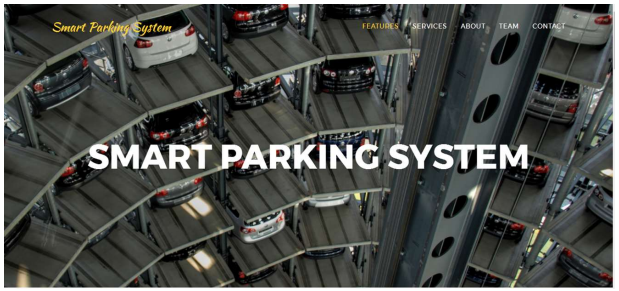

## IMPLEMENTED SOLUTION AND RESULT



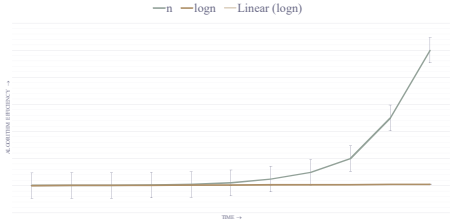



Implementation Overview




## EFFICIENCY ANALYSIS




Asymptotic complexity for Server Side PHP Scripting (Average Case) *O(logn)*

## CONCLUSION

- The proposed system will overcome the current challenges thus avoiding the congestion with in the parking lot itself.
- This parking system can be either used in Public places or at apartments thus making it area independent.
- Minimizing Man power thus maximizing throughput.
- Exact calculation of the time interval between the Entry time and Exit time and automated report/bill generation or mechanism.
- This system will be developed for the very first time in the world with these many unique plugins.
- A Win-Win situation for both Users as well as the authority members.
- This implementation can be made a reality as per our previous discussions.

## REFERENCES

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