

The Automated Parking System

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Abstract— This paper aims to present an intelligent system for parking vehicles based on RF(Radio-Frequency) readers technique. The proposed system will detect the identification of registration number of vehicles and produces the information of the vehicles parked. In this work, a RF readers are used to sense the vehicle parked. The reason why a RF readers are used is because with its usage the cost effective lanes can be allotted. The tags are attached to vehicle which holds the identification number of vehicle. The proposed system has been developed in both software and hardware platform. An automatic parking system is used to make the whole process of parking vehicles more efficient and less complex for both drivers and administrator

Keywords— Smart parking Technologies, Smart parking services,RFID tags/ readers, Tolls.

I. INTRODUCTION

Parking system have gained a lot of importance in present scenario. Many big cities including metropolitan cities with the growth of population grows the rate of vehicles that reflects on the parking system. Thus there is a need of a good and planned parking system

Parking automation system presented here is an advanced system useful in an efficient way of parking system mainly for commercial roads given example such as Devarajaur road. This project is designed to increase the chance of providing more free lanes for parking the vehicles. Unique identification number is provided for vehicles security purpose

In this system the owner of vehicle will be able to track user's vehicle. It is advantageous as there is authentication of vehicle given those can avoid vehicle theft. There is a online payment facilitated to owner of the vehicle.

The centralized system which is controlled by admin, the admin login with a id and password to the centralized server. A admin registers the customer to the system and also customer vehicles are registered along with the owner details (here vehicle owner is the customer).

II PARKING AUTOMATION SYSTEM

There will be a RFID tag fitted to the vehicles which contains the identification number of the vehicles[1]. RFID tag are fitted to the parking lanes which senses the tag of the vehicles. The RFID reader are fitted to the lane which detects

the end time and will notify the time to the owner of the vehicle [2].

The driver will be notified with a message about the parking timings. There is a online payment facilitated to owner of the vehicle. The tolls are fitted to parking lane which will be closed automatically when the vehicle is parked. The tolls are opened back after the payment is done. There is a counter facility provided for the non online users which notifies through printed receipts. There is a server connected through networks to store the details of vehicles and to notify the details to owner.

III EXISTING SYSTEM

There is huge advancement in a parking system these day. Many developed countries have made a advancement in technologies. There exists a huge parking systems which includes two or more floors of parking, platform which can left the vehicle and could place them to a particular bay/lane[7]. Considering a cities in our country and taking growing cities like Mysuru into consideration. We can find a shopping streets that has place for parking vehicles considering this point .In this system the road has bays for parking nearly 150-200 cars, but a sizeable number of cars reportedly belonging to shop owners and those running businesses in the locality are always parked there during business hours. The police are finding it tough to streamline traffic on the road, especially in the evenings when it is difficult to find parking space for vehicles.

IV ARCHITECTURE OF THE SYSTEM

A system architecture is a conceptual model that defines the structure , behavior and more views of a system.

System architecture serves as the blue print for both the system and project developing it. As shown in the figure 4.1 The centralized system which is controlled by admin the admin login with a id and password to the centralized server[9]. A admin registers the customer to the system and also customer vehicles are registered along with the owner details (here owner is the customer).

The customer should registered with the system by providing all the required details of his/her mobile

number, vehicle number and more and when the registration is successful the user or customer will be provided to set a user ID and a password which he/she can use it to login to the system.

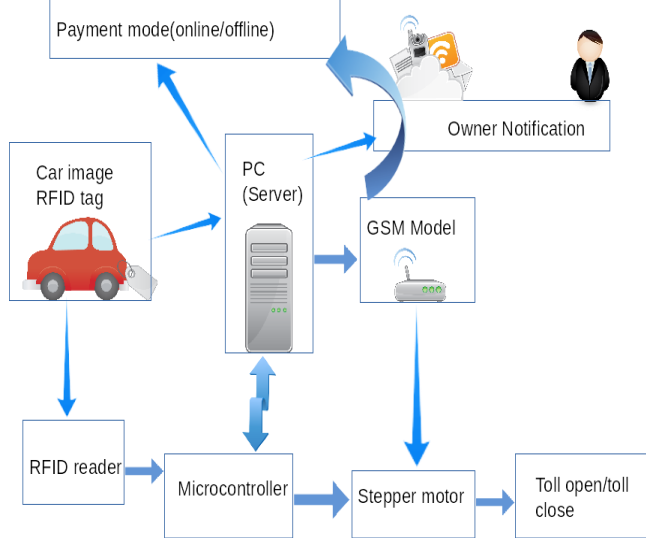


Figure 4.1 Architecture Diagram

There will be a URL through which a customer will be able to access a parking site, customer need to login and to verify the valid customer the OTP is generated and sent to his/her registered mobile number. Figure 4.2 shows the diagrammatic representation. The RFID Tag is fitted to the vehicles which contains a unique ID which is detected by RFID reader[3] fitted in the lane the tolls are closed when vehicle is parked when to payment mode again user is verified through OTP sms notification after the payment is confirmed the tolls are up so the vehicle can be taken back.

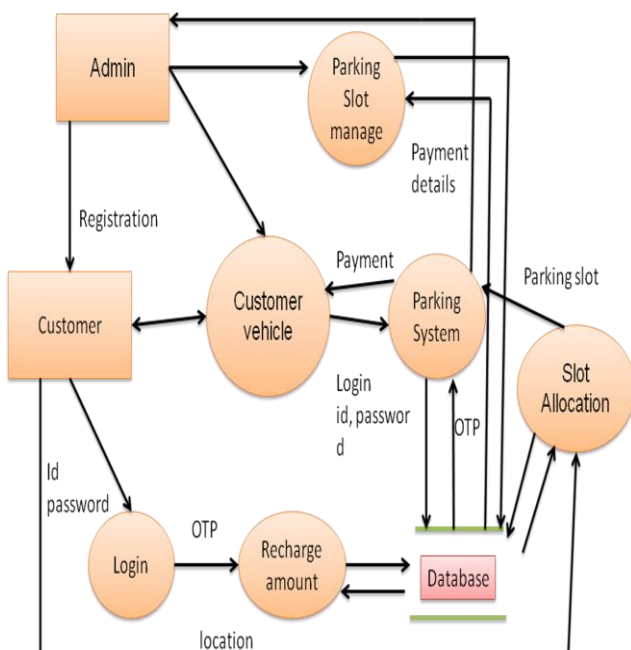


Figure 4.2 Diagrammatic representation

V CONCLUSION

This work defines the concept of the smart parking system, Parking system provides efficient ways for parking vehicles. Unique identification number is provided for vehicles security purpose. Customer can track user vehicle details as SMS notification are provided to the user’s registered mobile number. This work also avoids the theft of vehicles

VI FUTURE WORK

Following consideration can be implemented for the future enhancement of the parking system

- For the two wheeler parking instead of fitting a tolls , a wheel locking system can be implemented to reduce the slot space so that more number of vehicles can be parked.
- The GPRS system can be included in the system so that the same system implemented in different location can be identified and notified to the customer .
- Through the GPRS system the vehicles can be redirected to different location if the slots are not available.
- To attract the customers the reservations can be made for maximum time slots[8].
- System can be connected to cloud to encourage large database storages.
- The system can be developed using an IOT technology for better results.

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