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Smart parking system

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Abstract— Parking issue is a big challenge to facilitate traffic network and ensure city life quality. Searching for parking space in most city area especially during the rush hour is difficult. For device the difficulty arises from not knowing where the parking space is available. This paper presents a review of various techniques which are already implemented to solve the parking issue. This paper also presents a mechanism to solve the issues. The aim of this project is to provide a user friendly reliable parking system application. The common method of finding parking space is manual where the driver usually find space in street through luck and experience this process take time and efforts and may lead to the worst case of failing to find parking space for the driver if driver is driving in the city with high vehicle density. Smart parking system typically obtains information about availability of parking space in nearby area and process real time data to place vehicle at available position. Smart parking system uses mobile application for automated mobile payments. Smart parking system is useful to solve the issue of parking traffic congestion**.**

Keywords— User Module ,Parking Space Module ,Real Time Data Module ,Booking Module ,Bill Generation And Payment Module

I. INTRODUCTION

Smart Parking will maintain your system to the highest standard, to create a Stress-Free parking experiences for your customers. Smart Parking technologies are designed with ease of maintenance in mind. Fuss-Free and efficient maintenance means increased market share and revenues for you. Parking issue is a big challenge to facilitate traffic network and ensure urban life quality. Searching for parking space in most metropolitan area especially during the rush hour is difficult for device the difficulty Aries from not knowing where the availability of parking space availability of parking space. Smart parking system provide easy way of parking using mobile application. Smart parking is a solution for smart cities of the future. The efficient management of parking and traffic. About available parking spaces in particular geographic area and process is real-time data to process vehicles at available positions. It involves using low-cost sensors, Real-time data collection, and mobile-phone-enabled automated payment systems that allow people for digital payment using google pay or phone pay like application.

II . RELATED WORK

Finding the position of Vehicle because inside buildings GPS cannot be used, we need an alternative positioning method in order to locate vehicle position in a multilevel parking facility. Recently many indoor localization methods have been proposed that areas the [1] author purposed a new algorithm for treatment planning in real-time parking that firstly they used an algorithm to schedule the online problem of a parking system into an offline. This paper was not show the mechanism for accessing the resources system. The mechanism to guide vehicles to the parking space. In another study [2] authors propose smart parking system based on integration of UHF frequency RFID and IEEE 802.15.4 wireless integration of UHF frequency RFID and IEEE 802.15.4 wireless sensor Network technology. This system can collect an information about the space available in the city .it does not create a large parking scale the result of this paper only creates a proposed architecture. Hsu *etal*. [3] proposed an innovation system including parking guidance service. And a parking system can be reserved using smartphone, bill generation system was not present. The system shows all the parking area correctly which is fill or empty. The system will report the update accordingly using real time data. bill generation system was not present. The system shows all the parking area correctly which is fill or empty. system will report the update accordingly using real time data. A similar project had been approved by Georgia Institute of technology. The project used existing smart technology like satellite imaging ,mobile application for data acquisition and predicting the future data acquisition and predicting the future data for parking management systems [4].Their parking management system is sensor based and uses Fibre Braggs Grating sensors. This sensors are embedded in the ground, whereby as pressure is exerted on

the ground where they are placed , and sensors wavelength reflection changes to signify the presence of a vehicle[5].

III . PROPOSED PLAN

Traditional parking system commonly uses owner id of stakeholder and track parking areas and shows the availability of area and after removal of vehicle it automatically shows bill of stakeholder. However, these systems are not only expensive but time consuming.

1.User module:- In this module we will create CRUD (create ,read, update, delete) functionality. Create user with different roles like admin user, parking system.

A. Admin user has access to all modules. Parking system has access to parking spaces module and real time data module.

B. Vehicles user has access to real time data module and booking module.

2.Parking spaces module :- In this module parking spaces user has to register his parking spaces to app and has to enter his parking capacity of different type of vehicle like 2 wheeler or 4 wheeler etc.

3.Real time data module: - In this module we will create dissimilar services while will communicate with database on real time and give data from end user.

4.Booking module : - In this module user can see near parking spaces and can be able to book a spaces.

5.Bill generation and payment module:- In this module we will create bill based n timing of vehicle parked on spaces and user can pay via different digital methods like phone pay or debit/credit card etc.

IV. METHODOLOGY

Step1: Registration of users and parking owners, with authentication via email, Google plus and Facebook.
Step2: Tracking of free/filled parking spaces.
Step3: Assign free parking to nearest user using algorithm.
Step4: Monitoring parked time.
Step5: Reports of parking, list of vehicle & route reports with date and name sorting.
Step6:After removal of vehicle it automatically shows bill of parking . According to the time of vehicles parked.

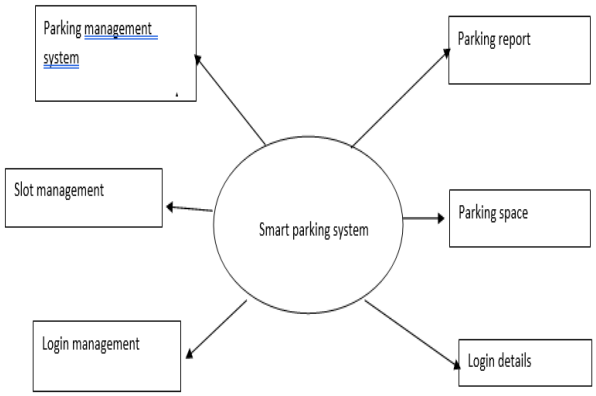

Figure 4.1 use case diagram

V. ADVANTAGES

Smart Parking is a parking strategy that combines technology and human innovation in an effort to use as few resources as possible—such as fuel, time and space—to achieve faster, easier and denser parking of vehicles for the majority of time they remain idle. Smart parking system provides smart city parking system that allows cities and operator manage parking resources more efficiently and parking operator to generate additional revenues. Smart parking system enhance the security with simplifying parking system. Smart parking solutions within a city solves the vandalism and pollution problem. Smart parking system that park the number of vehicles with the least space possible. and calculated the tine i.e. how much time the vehicle is parked in that space and generate bill accordingly.

VI. CONCLUSION

In this paper we discuss system benefits Smart Parking go well beyond avoiding time wasting. Enables cities to develop fully integrated multimodal intelligent transportation systems with great security and efficiency. Developing smart parking solutions within a city solves the vandalism and pollution problem. Fuel saving (according to a report, Smart Parking can result in 220 ,000 gallons of fuels saving till 2030 and approx.,300,000 gallons of fuels saved by 2050.)

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