Smart Parking System Using Cloud Computing

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Abstract: This application is a special system for smart parking reservation and security maintenance a commercial car parking area in an urban environment. Now a days congestion of traffic increases rapidly with the increasing growth of population. With respect to the number of population’s usage of cars also increased. Due to more usage of car the traffic congestion occurred on the road. Not only on the road had the congestionital so occurred in the car parking area. Because finding of free parking slot takes more time period. Hence we loss certain amount of time period and also made more than 80 percent of fuel wastage of in the empty parking lot in parking area. To solve this problem we need a special system in the parking area to measure empty space, Services and show the information to the people who looking for the empty space for Parking lot. The reservation process is happening only by user. Hence the user finds the empty parking lot and makes the action of reservation through an internet access by an Android Application with driver's own knowledge Parking Lot. This application will remove Standalone Application of Parking lot to the Enterprise, the Information or report will accessible at any where only by one click event having Internet connection.

Keywords: Parking, Urban, Congestion, Cloud Computing.

I. INTRODUCTION

Traffic congestion is a major problem especially in big cities. Sometimes traffic within the city grids to a halt, which is more often the case when it rains and police officers go for shelter leaving the traffic uncontrolled. In many occasions when this happens, it takes time before smooth traffic flow is re-established. In a normal day, the congestion may be caused by several factors including the absence of information on available parking spaces. As a result drivers spend time driving along the streets in search of parking space. This means that a significant number of vehicles are on the street shopping to locate a parking space which increases the number of cars on the streets unnecessarily and contributes towards the congestion not to mention the pollution caused by their exhaust fumes and the noise emanating from their engines. Once a driver finds a parking space and parks the vehicle, he may spend some time looking for a city council parking attendant in order to pay the parking fees. Sometimes, the time spent looking for the attendant is significant and most drivers dread leaving their cars before they pay the parking fee due to the consequences which include having your vehicle locked or event owing which in turn attracts heavy penalties. In some cases, drivers collide with parking attendants so that they forfeit the receipt but pay an amount less than the actual parking fee to the attendant. Assignment of supervisors to man a region with a number of attendant sis aimed at reducing fraud hence increasing revenue. However, the supervisors themselves have been colluding with the attendants in many cases to let drivers ‘park vehicles at a lesser fee but which they pocket and do not deliver to the city council. The net effect could be a bigger loss since the council has to cater for wages of both the attendants and supervisors. To eliminate or significantly reduce corruption the project provides an alternative means of payment of the parking fees that do not require cash to exchange hands. To reduce the time spent on locating parking slots; this project provides away of accessing parking’s lots information-specifically their availability- remotely on request. It also shows the possibility of variable message and Application being used for providing such information.
II. LITERATURE SURVEY

In this chapter briefly explain the main ideas and concepts of some of the existing problem. We already deal with earlier parking system which is known as parking lot manager. This system was basically design to use standalone application. This application required to install in each system. There is number of system in parking area then they required to create LAN after that one Local Server created. If Local Server gets crashed then possibilities of data loss should be occurred. So in that case additional backup was required. This earlier system uses smart card which was handled by EPCU (Embedded Process Control Unit) customer who interacts with this system uses smart card and that is very irritating to customer to bring card always with them for parking and services purpose. When system needs to Updating or Renovation then each and every card should be required to update. Extra services or less services given by any service provider they changes in an application should not be done according to that the system was not made up for provide security to conformational data.[1] The data of customer or services which is a provided by service provider/owner may not have a guarantee to leak or hack. There was no encryption technique uses because of data is a local server/computer. If there was no services/computer in parking area then that amount of trained employee required to handle system. New employee when recruited then it is a necessary to give training about software uses, so wastage of time forgiving training to employee. Replacement of employee in any uncertainties might be infeasible controlling parking area no of employee might be high because of their there is no tracking system to find out empty space in parking lot, Employee who was operating the software application unaware about it. In between employee there was Telephone Operate as a communication channel which might be cause for improper communication or lagging.[2] There was no facility provided for parking reservation. End user totally unaware about parking lot that might have space or not. The earlier application does not required internet connectivity because there was no online work handling. This might be positive point at that point but nowadays each and every thing going to become enterprise or online, so this application has no more use. We can say it become outdated. There was another big issue of cost of application for genuine standard software each and every copy required license or product key. Enterprise application only required valid login as compare to enterprise application standalone application have more cost always.[3]

III. SYSTEM ARCHITECTURE

The system Architecture for Smart Parking Portal is "To assist with the exact information, at right place in real-time with responsible setup and location sensitiveness". In this era we are dealing with tables and SmartPhones. A very appealing application include monitoring where instant information needed to decide if the employee being monitored is any real threat or wrong target. We have been able to create number of different application where we provide the manager with rights to monitor employee he/she wants to. But these applications are limited to desktop only. We need to import them on mobile devices. We ensure that while traveling does not need to carry heavy files or system with him. All information must be available in his mobile device in user friendly format.
IV. SYSTEM MODULES

4.1. Web Application: It is just websites that maintained the database of service provider. Services such as Report, Configuration, Registration. In report includes demo, premium and expiration of client. In configuration includes payment and plans of client. In registration it provides new login for client and provides services.

4.2. Service Provider Application: It maintains information such as configuration, model, reporting, user customer, employee details and management. In configuration it contains customer convenient, timetable, advance time, monthly user and services. In model it contains car model, brand and color. In reporting it maintains client convenient, monthly user, service and parking. In employee it includes pass code and attendance report. In management it includes client personal information, company name, password change properties and contract information. Database is maintained on cloud. Admin just login and check how many cars have arrived in garage for parking or services. In car in it just take information such as license plate, manual no, what services required and generate ticket no. In garage it just looks out the client request and information such as how many cars has come for parking which car is on the way for garage in services it’s convenient and after providing services it generates cash memo of customer for services or parking purpose. It also maintain employee attendance record, messaging with client and exit for payment and simply let car out.

4.3. Customer Application: Client simply login into app and request to admin for parking or services in garage and just call in the car in the garage for services or simply for parking. It maintains car details, admin id, license plate and ticket generation. It simply call to the garage to checkout that how many car as arrived provide services and generate bill and let car out from garage or from parking area.

4.4. MD5 Algorithm: This proposed system uses MD5 algorithm for cryptographic hash function. MD5 is one in a series of message digest algorithms designed by Professor Ronald Rivest of MIT in 1992. MD5 produces 128 bit (16-byte) hash value, typically expressed in text formats a 32 digit hexadecimal number. MD5 is commonly used to verify data integrity. MD5 is unbreakable.

CONCLUSION

In this, it is conclude that the Smart Parking System to optimize a parking system management. We have proposed dynamic pricing schemes for satisfying the different needs of drivers and service provider, which is based on real-time parking information. The pricing scheme is integrated with the proposed parking lot in which parking price is dynamically adjusted in response to the relationship of demand and congestion level. Upon receiving parking prices, drivers make their reservation to maximize their benefits according to the functions. Based on the obtained results from our simulation study, we conclude that the proposed Parking Lot system increases the revenue for service provider, provides service differentiation for users with different needs, traffic congestion caused parking searching and reduces the amount of traffic searching for parking.

REFERENCES

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