

Pay Park

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Abstract: In recent years, malls containing a degree of retailers and restaurants flourished in cities everywhere around the globe. This concentration is the reason for issues in parking areas and traffic jams. This paper introduces a parking management system victimization mobile application to handle the png issues in malls. The contribution during the system is 2 folds. The hardware half that of tailored detector units supported a phototransistor with an Associate in Nursing infrared transmitter that's liable for determining infinite car parking zone is occupied or free. The units connect with a central controller wireless victimization Arduino micro-controllers with LAN shields. The central controller may be a server hosting an information accessible through the developed mobile application. The mobile application is developed victimization the Eclipse IDE and runs on the golem platform. It connects to the information victimization JSON (JavaScript Object Notation) format. The users measure ready to use this application after they enter the mall. They can find free parking areas, check the parking fees, find their cars, and even pay victimization through Mobile applications. An epitome of a parking mall is developed and tested. The practicality of the system is additionally tested and therefore the results square measure encouraging.

Keywords: Parking, Reduce Traffic, Web Application

I. INTRODUCTION

In the past few age, municipalities effectively nations are experienced enormous progress within the variety of convertibles secondhand for conveyance. A comprehensive trend toward raised mobility and also the aggregation of outlets and joints in malls have supported parking queries and traffic jams. Frustration with parking may be a major concern for all stakeholders concerned. Parking Management Systems were developed to assist individuals notice parking spots quickly, so reducing traffic jams and also the ensuing frustration, and enhancing the visitor's expertise. The sensible Parking Application aims at serving users to seek out the most appropriate space for parking, build reservations and extend them if needed.

It permits parking directors to define and manage parking areas and also permits parking operators to attest users against their reservations once users enter the car park. Users access location-based mostly information and request system services via mobile applications and parking operators verify reservations via mobile applications whereas parking admins might manage the parking area details via an internet application. The sensible parking application options use cloud computing to boost user services. To satisfy the increasing demand for parking areas, parking management organizations are attempting to implement higher and technologically advanced solutions. A variety of methodologies are enforced abroad to disseminate parking availability data through varied platforms. The good parking application can change period parking availableness checking and reservation thereby providing a hassle-free parking resolution for users. Deployment over the cloud not solely frees directors from maintenance tasks but additionally makes the system a lot of environment-friendly.

II. OBJECTIVES OF THE SYSTEM

Various objectives of the proposed system are as follows:

- Implementation of the system using a web application provides product information to producers and end users.
- To implement a system with a data server available 24/7 to end users
- Implement platform-independent applications that work in all environments

III. LITERATURE SURVEY

This research paper suggests solutions to a prominent need for a systematic and more feasible parking management system in India, and the requirement of a much more accessible interface for the owner of the parking space and the individual using the parking space. Traditionally, parking spaces have been allotted by government authorities and private space owners in the designated area or region depending upon the population and the vehicle density in the area. The term parking is defined as the placement of a vehicle temporarily at a specific spot that is designated for that purpose. Initially, due to the lesser number of vehicles in the country, parking issues were not prominent, however, the rise in the density of population in the urban cities has shown a significant increase in the problem of parking spaces, and most of the time private vehicles are parked on the roadside.

Registered vehicles in India reached 295.77 million in 2019. In a country with the second largest population and the third largest road network system, road travel is the most convenient way of transportation. Over 60% of the population uses private or shared vehicles to commute through the road network on daily basis. The statistics on the number of industrial goods moved using the roads in the year 2017 was two billion metric tons. The working population in the country prefers to commute using personal vehicles primarily consisting of two-wheelers as it is much more convenient. This reflects in the sales volume of the two-wheelers, which was recorded at close to 17 million in the year 2020. The ratio of use of public transport to population was well above 40%, which is the highest recorded in the capital city of India.

P[3]

To better understand the problem, this research has considered the parking volume, parking load, average parking duration, and area availability which highlighted the most outstanding concern with the current parking system, which is the absence of an interface that interacts with the user and records the space availability. Considering the standard space required for a four-wheeler parking, which is 9 feet wide and 18 feet long, there are multiple lanes and slots in a parking space. Whenever an individual enters to park his/her vehicle there is a bottleneck situation created due to the lack of information on the exact available parking spot. This searching for a parking spot is additional manual labor and also further leads to congestion in traffic and a higher risk of accidents. The stats on the expenditure on road accidents indicate that the government of India invests three to five percent of the country's GDP in road accidents.

P[4]

This research targeted to resolve this issue by creating a program that will assist the person parking the vehicle with the exact location and availability of the parking spot, guide them to the designation, and then record the entry and exit time to further display the availability to the next person. The main objective concerning the solution to parking issues was to make the parking individual aware of the exact parking spot while also helping the parking space owner to record the details and thus regulate the usage of space. The issue with unauthorized parking and the towing of the vehicles by the respective traffic regulatory authorities would also be minimized with the usage of the application. The time consumed in parking a vehicle in urban cities in India has increased substantially in the past decade due to the rise in vehicle volume and traffic congestion in the parking spaces. The application would assist with time management by providing insights to the parking individual and space owners.

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IV. RELATED WORK

4.1 Smart Parking using RFID [1]

RFID technology is Associated automation technology with main components such as RFsuch ID readers, labels, computers, barriers, software, etc, The code is for management, dominance, transaction coverage, and, operation tasks for parking tons. This vehicular knowledge is fetched from info to verify a vehicle when it enters the automobile parking space victimization RFID reader. When a vehicle needs to visualize, the authentication is completed by analysing vale the details. The drivers are notified concerning the availability of parking tons at the doorway itself. Hence, no time is wasted trying to find the parking area.

4.2 Reservation based Smart-Parking [2]

Reservation primarily based good parking system aims at broadcasting real real-time data to drivers via Associate in application. The system in the main uses Zigbe sensors and good phone support for preparation. this method permits the users to reserve a selected parking zone ahead by accessing its availability data in special parking districts. It is also equipped with payment possibilities there with dynamic evaluation for users. lightweight and vibration sensors observe whether or not a vehicle is present within the heap. Bluetooth module is chargeable for communication between user users therefore the sensing element data. The major disadvantages embrace short the of blue-Bluetooth bottleneck things could arise just in case of serious traffic.

4.3 Good Parking Reservation System Victimization

This system permits users to order their parking places using SMS. Once the reservation is confirmed, the users can receive the once password(OTP) to enter the car park and the heap range for parking. If they exceed the time to reach the car park, the arcanum can expire and therefore thereservation is to be off. The system is divided into reservation and Access systems reservation is handled by a micro-RTU (Remote Terminal Unit) organized with a compass point OPC (OLE for method Control) Server. The access system is handled by a microcontroller-IC16F877- that measures periods validity of passwords, and stores/provides data on the provision of parking areas yet as permitting or denying access to the car park. A weight-sensing element is positioned at the heap space to sense the presence of the vehicle.

4.4 Parkett: Drive by Sensing Road-Side Parking Statistics[4]

The market may be a mobile system comprising vehicles that collect parking space occupancy data by driving by. The vehicle includes a GPS receiver and passenger-side facing ultrasonic measuring instrument to work out vacant parking areas. The data collected is integrated into the central server manufacturing a period map of parking convenience thereby serving users requests. to realize the accuracy of location, an environmental process approach is devised. It makes use of a GPS module and supersonic sensors for the finish-to-finish communication. A period map is generated to replicate the occupancy of a timestamp. The drawbacks area unit mainly because of limitations of sensors and complexity concerned in cases of multi-lane parking.

V. CONCLUSION

In our study, we've got recommend the requirement of correctenfor cement of sensible Parking Systems and their implementation victimisation numerous techniques. we've got additionally presented what role do the vehicle play in aggregation information regarding the car parking zone and the way that data is displayed to driver via VMS or program. We've got additionally studied numerous innovative techniques, recent work carried out and what potential measures ought to be taken to out weigh the system' s shortcomings.

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