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Smart Parking Management System Using Full Stack

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ABSTRACT: Our project Smart Parking Management System's main goal is to create a portal for customers to book parking slots at specific locations. We are designing our project as web application in such a way that people would undoubtedly benefit in terms of saving money and time, because traffic is becoming a major issue in megacities these days because most people park their cars on the highways, causing traffic to become a major issue. So, we'd like to develop a gateway where folks who work near that parking space can book slots before leaving their house, and then come back at that time and park their vehicles. We intend to create three portals: a user portal for booking parking slots, an admin portal for adding parking slots, updating parking slot details, and updating the details of attendants at parking slots, and a third portal for adding parking slots, updating parking slot details, and updating the details of attendants at parking slots.

KEYWORDS: Smart Parking Management System, Parking slots, web application

I. INTRODUCTION

With the growing number of automobiles on the road, drivers in most places are having difficulty obtaining a parking space. Manual searching is the most typical approach of locating a free spot. This procedure necessitates a significant amount of time and work. It is tough to locate a parking spot in a chosen location in major cities. As a result, we wish to establish a site where a user may reserve a parking spot at a location ahead of time, saving time and reducing traffic congestion. As a result, instead of seeking for space on the roadways, customers are saving time by scheduling slots near a complex. As a result, we intend to divide this project into different parts in order to make it more efficient for users to utilize. We intend to construct three modules: a user module for booking parking slots, an attendant module for managing user requests, and an admin module for adding parking slots and updating parking information and also to update the details of attendants at parking slots.

As a result, this project provides an online reservation system that allows users to examine numerous parking places and choose the best one. This project aims to manage parking spaces in a complex in the best possible way for both consumers and staff. The project's goal is to assist consumers in swiftly finding a parking spot. In these trying times of the epidemic, this allows customers to do almost anything online.

The project implementation includes front end and back-end technologies. Front end includes user interfaces, styling of the web page and organizing the content that is displayed to the end user. Front end development uses CSS for styling the web page and JavaScript for creating web pages which allows adding dynamic behavior to the web pages and adding special effects to the web page. It is used for validation purposes. It also helps us to execute complex actions and enables the interaction of web sites with visitors. Back-end development uses technologies like PHP which can generate dynamic page content and collect form data. It can send and receive cookies. It can add, delete and modify data in your database. PHP is also useful for authenticating users and can encrypt the data and XAMPP server also used.

II. LITERATURE SURVEY

Robin Grodi et al. [1] have determined how the vehicle will occupy the designated space. RFID sensors are used to detect the presence of a vehicle or other objects. Once a vehicle is detected, the system must notify drivers or

occupy a parking space. The disadvantage is that the parking space will only be detected in nearby areas because there is no GPS sensor to search for parking slots in distant locations. Alirezahassani et al. [2] implemented this system using a cloud-connected mobile application. The user will specify the time at which he will allocate the space. If he does not occupy later, the user will receive an alarm. The app will display the number of assigned and available parking spaces. The disadvantage is that if another user requests the same location after allocating, he is unable to allocate that location, resulting in a waste of space if the first user cancels later, as well as a waste of time and money. DharminiKanteti et al. [3] created a Smart Parking System. In the case of pre-registered users, IP cameras would capture the vehicle registration number and they would be able to proceed uninterrupted. According to their information, such as estimated parking time, location of visit, and so on. The amount will be deducted from the E-wallet of preregistered users, and users will be notified. For new users, a similar pricing system will be used, but payment will be made offline. The system could serve all parking requests, but after 80, it could not accommodate any more cars because the parking was full. Georgios Tsaramirsis et al. [4] employ wired sensor systems. There are two types of sensors: intrusive and non-intrusive. Intrusive sensors are typically installed directly on pavement surfaces or in road holes. In turn, on-intrusive sensors are also known as above-ground sensors because they are mounted above the traffic lane and monitor both sides of the road. The disadvantage of intrusive sensors is that they reduce pavement life due to the need for a pavement cut for installation. Rosario Salpietro et al. [5] used an analysis of smart-phone embedded sensors and Bluetooth connectivity to implement automatic detection of parking actions performed by users. Once the parking event has been detected, an adaptive strategy allows information to be disseminated across the target scenario by combining an internet connection to a remote server with device-to-device connections via Wi-Fi direct links.

III. EXISTING SYSTEM

With the growing number of automobiles on the road, drivers in most places are having difficulty obtaining a parking space. Manual searching is the most typical approach of locating a free spot. This procedure necessitates a significant amount of time and work. As a result, this project provides an online reservation system that allows users to examine numerous parking places and choose the best one. He/she can book the booking space for a certain time window if it is available. For that period, the booked space will not be available to anyone else.

IV. PROPOSED SYSTEM

The proposed system to the problem provides a interactive web application to the user which allows to book available parking slots with a better feasibility. This proposed solution supports three kinds of users namely Admin, User and Attendant. The proposed system technically, economically, operationally feasible. The Smart Parking Management System can be made technically feasible by adding MySQL database and XAMPP server. The issues like, operational scope for the fast acceptability of the alternative solution, human issues, internal issues (organizational conflicts) and legal issues are to be checked out. Cost benefit analysis, long term returns, Maintenance costs are all taken into consideration in designing the proposed system. The proposed system is a web application where front end work is done with the help of HTML is used to create functional web pages, CSS used to style the web pages, JS(JavaScript) is used to add dynamic behaviour to the web pages. In the backend, PHP is used to generate dynamic content and persistence database MySQL is used to store the information of users, XAMPP server is used to build local webserver.

This system contains three types of users:

- Admin-who can add parking slots, update parking slots and manage attendants at the parking slots.
- User-a user can book parking slots at the desired location based on the availability.
- Attendant-who manages the requests of the users.

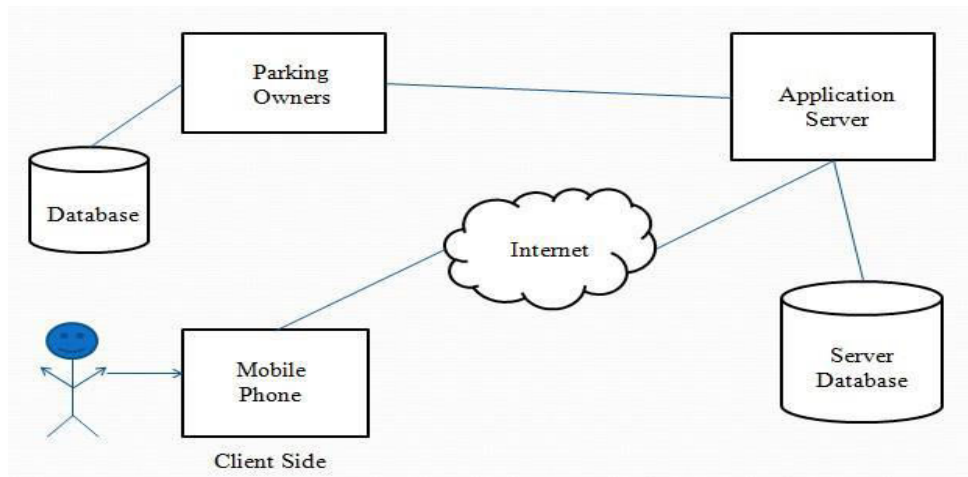


Fig 1: Proposed System Architecture

V. RESULT

The need for smart vehicle parking systems is skyrocketing. This allows users to have real-time access to parking space availability. In today's environment, the existing system lacks features such as parking reservation and slot availability checker. The goal of this paper is to connect the parking lot to the rest of the globe while also saving time and money for the user. This technology is also in place to prevent car theft. This study minimizes the overall fuel energy consumed by the vehicle during the search for the car.

VI. APPLICATIONS

This system is also efficient for car parking. And it prevents from traffic congestion too. It can be implemented in mall, hospitals and multi store buildings. The time which takes in the process it can be made short and easy to configure. In this booking will be easier. And the payment method is also manual therefore we do not need to worry about online transaction.

VII. CONCLUSION

We can observe that there are more vehicles on the road these days, and there is less place to park them in cities. So, there are many parking areas coming in most cities, such as parking areas in a complex, and this project "SMART PARKING MANAGEMENT SYSTEM USING FULL STACK" can be used there to save customers a lot of time by allowing them to book their parking slot by selecting a number of hours and then coming to the parking area and parking their vehicles, which saves customers a lot of time because they do not have to search the roads for a parking spot. Not only is this management system beneficial to customers, but it is also beneficial to parking area administrators, as it automatically allots parking spaces based on the number of hours required by a customer, generates an automatic receipt for the customer, and reduces a lot of paperwork by eliminating the need for any attendant to write all of the details of vehicles coming in and out. In this way, if this project is used well, it will be highly beneficial to parking area complexes. In addition, the project is incredibly user-friendly and simple to understand. Several user-friendly coding systems have also been implemented. The goal of software planning is to provide a framework for managers to establish reasonable estimations within a limited time frame at the start of a software project, and it should be updated on a regular basis as the project develops.

VIII. FUTURE SCOPE

In a word, the project's future scope is around the maintenance of information regarding: We may add a printer in the future. We can provide more advanced software for Car Parking Systems with additional features. The platform will be hosted on the internet which makes it available to everyone in the globe. Integrate numerous load balancers to

distribute the system's loads. Create a master and slave database structure to reduce database query overload. Implement a backup mechanism that takes regular backups of the codebase and database on many servers. The points mentioned above are enhancements that can be made to increase the applicability and usage of this project. We can keep car and parking records here. Also, as can be seen, today's players are versatile, implying that there is room for introducing a method that maintains the Car Parking System. Enhancements can be made to maintain all the Car, Parking, Parking Space, Parking Slot, and Parking Area. We have left all options open so that if the user has any other future requirements in the system for system enhancement, they can be implemented. Finally, we would like to thank everyone who was directly or indirectly involved in the system's development. We hope that the project will serve the purpose for which it is being developed by emphasizing the success of the process.

REFERENCES

- [1] Robin Grodi, Danda B. Rawat, Fernando Rios-Gutierrez: Smart parking-parking occupancy monitoring and visualization system for smart cities.
- [2] Abhirup Khanna, Rishi Anand: IoT based smart parking system.2016 International conference on Internet of Things and application (IOTA).
- [3] DharminiKanteti, D V S Srikar and T K Ramesh: smart parking system for commercial stretch in cities.
- [4] Georgios Tsaramirsis, IoannisKaramitsos, CharalamposApostolotopoulos: smart parking-an IoT application for smart cities.
- [5] Rosario Salpietro, Luca Bedogni, Marco Di Felice, LucianoBononi: Park here! A smart parking based on smart phones' embedded sensors and short-range communication technologies.
- [6] Z. Pala and N. Inanc, "Smart parking applications using RFID technology" in 1st Annual Eurasia RFID conference, September 2007.
- [7] Wand and W. He, "A reservation based smart parking system" in 1st Int."l Workshop on Cyber-Physical networking systems, April 2011.
- [8] N.H.H.M. Hanif, M.H. Badiozaman and H. Daud, "Smart parking reservation system using short message services (SMS)", in 2010 International Conference on Intelligent and Advanced Systems (ICIAS), June 2010.
- [9] Brabham, "Crowdsourcing as a model for problem solving: An introduction and Cases" Convergence: The International Journal of Research into New Media Technological Studies.
- [10]. S. Mathur, T. Jin, N. Kasturirangan, W. Xue, M. Gruteser and W. Trappe, "Parknet : drive by sensing of road-side parking statistics" in Proceedings of the Eighth International Conference on Mobile Systems, applications and services (MobiSys'10), ACM New York, June 2010.
- [11] Elena Polycarpou, Lambros Lambrinos and EftychiosProtopapadakis, "Smart Paking Solutions for Urban Areas"
- [12] Saeed Arbabi, Mohammad Allahbakhsh, Mohsen Sharifi, "Crowd-Enhanced Cloud Services: Issues and Directions", International Journal of Computer Applications (0975 – 8887) Volume 117 – No. 21, May 2015
- [13] https://www.researchgate.net/publication/313667380_Smart_Parking_System_Student_Activity_Project



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