A Mini Project Synopsis on

Parking Slot Management System

S.E. - I.T Engineering

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CERTIFICATE

This to certify that the Mini Project report on **Parking Slot Management System** has been submitted by Avantika More(21104033),Sahil Mohite(21104099)and Multazim Bhure(21104104)who are a Bonafede students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in **Information Technology**, during the academic year **2022-2023** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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<u>ACKNOWLEDGEMENT</u>

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Chapter 1

1.Introduction:

A Parking Management System project in python is a set of innovative technologies that provide parking sector solutions.Any parking management systems main concept is self explanatory:it's a system that assists individuals,business, and organizations in managing their parking spaces.

This python project on parking slot management system is mostly concerned with dealing with client parking details such as number and slot. The system also allows vehicle owners to enter information such as their contact information,vehicle number,and vehicle category. A parking management system refers to the innovative technologies providing solutions in the parking industry. The core idea behind any parking management system is self-explanatory:It's a system that helps people, companies, and organizations to manage their parking spaces.

Managing car parks isn't an easy task for companies and organizations because there are lots of moving parts including traffic and the availability of spaces. It is a time-consuming task, requires human labor, and is inefficient. Using a parking management system can help reduce a business's administrative overhead on parking and reduce the impact of their parking space on their local community.

Most parking spaces, including multi-level car parking buildings, are manually managed. This makes managing multi-tenant, multi-level car parking chaotic - a challenge for parking lot owners and providers.

VersionX's parking management system digitizes the end-to-end management of parking spaces and all parking processes related to visitors, vehicles, & payments.
It eliminates manual monitoring and tracking of vehicles. With VersionX smart parking management system, you can define and customize areas like paid, visitor, staff, tenants, etc.
Allocation of slots becomes easy. Live countdown of occupied versus unoccupied slots, filled versus unfilled slots, etc. can be displayed on a LED screen and on the phone.

Parking management system streamlines the parking operations with the advent in the proliferation of biometric modalities.

In an era of raging parking issues, optimal usage of parking space and the abruptness to park vehicles are critical factors. Technology-based Parking Management System is an automated solution that provides an advance and rapid solution, right from an entry in the parking area to the exit.

Optimizing the parking space for vehicles is still a problematic area for businesses, Government, various public places as well as Municipal authorities in multiple cities

across India. Biometrics based Parking Management System offers a productive implementation of the parking resources.

Parking solution utilizing Biometrics technology eases people's task of finding safe parking spots in real time by introducing smarter parking into the world at large. The System also helps an individual to pre-book the parking spot from the distant area, reducing traffic congestion and allowing a user to know the availability of parking space in advance.

Parking Management System lessens the time and boosts the efficiency of the current parking management. In overpopulated cosmopolitan zones, parking strategies must be well-implemented for efficient vehicle management.

Biometrics based parking management solution provides specifications of the vacant parking slots in the vicinity and overcomes the traffic issues due to illegal parking in the vicinity. It is designed with an aspiration to meet the requirements of controlled parking that grants effortless parking tactics to the authorities.

1.1Purpose:

The system provides details of the vacant parking slots in the vicinity and reduces the traffic issues due to illegal parking in the vicinity.It is designed with an objective to meet the requirements of controlled parking that offers effortless parking tactics to the authorities.

- Problem Identified:

Parking management system offers a solution to both the parking lot owner and the vehicle owner as it facilities hassle free vehicles parking and reduces parking management costs.

- Solution Purposed:

The system provides multiple solutions that include:

On street parking control system: Our parking management system offers innovative parking solutions that utilize cutting edge technology for on street parking system.

Integration of access control: Our integrated parking management system comprises of access control and security features such as CCTV for surveillance,RFID,Automatic number plate recognition (ANPR).It is devised to address the requirements in vehicle access control for secured and paid parking provision.

1.2 Objectives:

To park our vehicle in our own slot by paying.

To avoid towing problems.

To parked at a secure condition.

To maintain records in short time of period.

To look after the parking area is full or not.

To determine whether the parking slot is full or not.

To avoid paper works

To reduce time consumptions.

Centralized database management.

1.3 Scope:

In the moderm age many people have vehicles. Vehicle is now a basic need. Every place is under the process of urbanization.

There are many corporate offices and shopping centers,etc. There are many recreational places where people used to go for refreshment.

So, all these places need a parking space where people can park their vehicles safely and easily.

Every parking area needs a system that records the detail of vehicles to give the facility.

These systems might be computerized or non computerized. With the help of computerized system we can deliver a good service to customer who wants to park their vehicle into the any organizations premises**.**

Chapter 2

2.Problem Definition:

Now a days in parking like valet parking they maintain just with the tokens and they maintain just with the tokens and they have records the vehicle details in books so that during some critical situations like police enquiry of terrorist car or vehicle roberrer that case it is difficult to find the details of particular vehicle but in this case is easy to find in 1 to 2 seconds.

By parking the vehicle in public place the vehicle can be claimed by towing person but in this case there is no towing problems and no need to give fine for anything we can park our vehicles with securely.

People prefer to own vehicles because ownership of a vehicle can offer an unmatched combination of speed, autonomy, and privacy. But the fact is that there is no private vehicle is perpetually in motion; most private vehicles spend most of their time at rest, either during working hours or over the night. This means that there should be two places for every car in the city to be parked in.

The two places should be at the both ends of every trip. Parking problems in cities and urban areas are becoming increasingly important and have been one of the most discussed topics by both the general public and professionals. The imbalance between parking supply and parking demand has been considered as the main reason for metropolis parking problems. Moreover, the parking system plays a key role in the metropolitan traffic system, and lacking of it shows closed relation with traffic congestion, traffic accident, and environmental pollution.

Although efficient parking system can improve urban transportation and city environment besides raising the quality of life for citizens, parking problem is an often-overlooked aspect of urban planning and transportation. Urban planners should seek more efficient and innovative solutions for parking problem on the level of management, planning, and designs.

Chapter 3

3.Proposed System:

As a response to the aforementioned concerns the researchers proposed the development of the vehicle parking management system using python.The project will eliminate the challenges and errors encountered in the preexisting method used in managing vehicle parking space.

The system will allow the parking lot administrator to electronically encode and store the records of parking slots availability,parking fees,parking duration and customers and vehicles information.

3.1 Features and Functionality:

At the entry and exit gates,parking tickets can be easily verified against the vehicle captured with the help of ANPR feature.
The parking system is quite helpful in detecting lost/stolen vehicle.
In case of network failure,individual computers placed at all the exits and enteries will store the data,and also transfers the stored data to the server once the network will establish again.
The system is easy to configure and is relatively maintainance free,even in long term operation.

Chapter 4

4. Project Outcomes:

1] Login Form

2] Home Page

3] Add Vehicle

4] Manage Vehicle

5] History

Chapter 5

5. Software Requirements:

1) Project language - Python
2) Database – MYSQL
3) Frontend – VSCode
4) Backend – SQLite3

Chapter 6

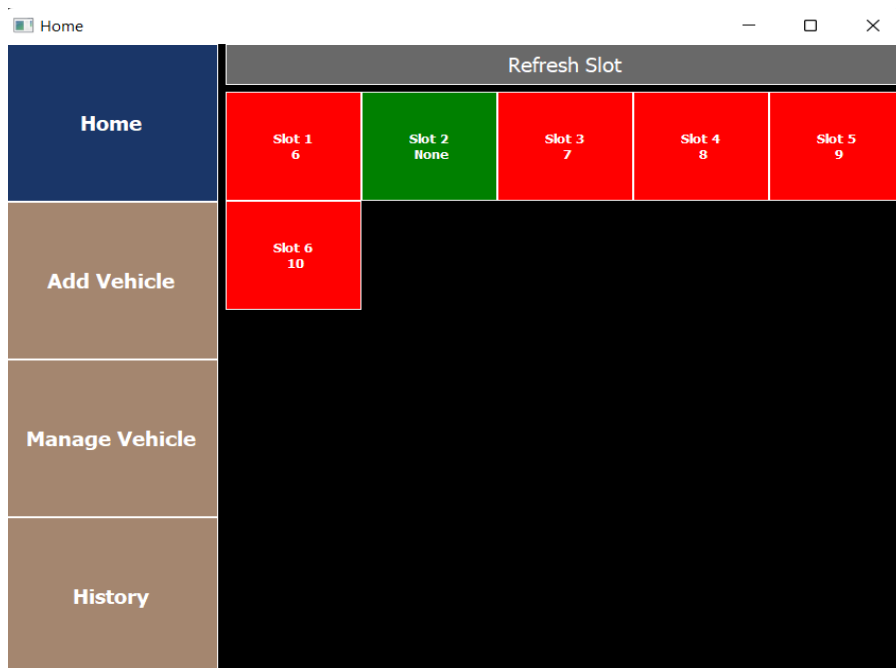## 6. Project Design:

- Admin login

Refresh Slot				
Slot 1 6	Slot 2 None	Slot 3 7	Slot 4 8	Slot 5 9
Slot 6 10				

Home

Add Vehicle

Manage Vehicle

History

Home

Add Vehicle

Manage Vehicle

History

Name :

avantika more

Mobile :

8097874164

Vehicle No :

mh09hu8970

Vehicle Type :

2 Wheeler

Add Vehicle

Added Successfully

Home

	ID	Name	VEHICLE No	MOBILE	VEHICLE TYPE	ENTRY TIME	EX
1	1	Pallavi More	mh09ii9876	8689888100	2	2023-04-19 18:04:18	2023-04
2	2	Pallavi More	mh09ii9876	8689888100	4	2023-04-19 18:05:00	2023-04
3	3	Pallavi More	mh09ii9876	8689888100	4	2023-04-19 18:05:00	2023-04
4	4	Pallavi More	mh09ii9876	8689888100	4	2023-04-19 18:05:00	2023-04
5	5	Pallavi More	mh09ii9876	8689888100	4	2023-04-19 18:05:01	2023-04

Home
Add Vehicle
Manage Vehicle
History

Refresh

Home

	ID	Name	VEHICLE No	MOBILE	VEHICLE TYPE	ENTRY TIME	AC
1	6	sahil mohite	mh04ks5494	8433592282	2	2023-04-20 10:42:28	
2	7	avantika more	mh04hg6789	8433592282	4	2023-04-20 10:43:02	
3	8	avantika more	mh04hg6789	8433592282	4	2023-04-20 10:43:03	
4	9	sanika yadkikar	mh04hj6789	8097874164	4	2023-04-20 10:57:37	
5	10	sahil sawant	mh04fe2117	9372913452	4	2023-04-20 11:11:30	
6	11	avantika more	mh09hu8970	8097874164	2	2023-04-20 11:26:11	

Home
Add Vehicle
Manage Vehicle
History

Refresh

Chapter 7

7.Project Scheduling:

Sr.No	Group Member	Time Duration	Work To Be Done
1.	Avantika More Sahil Mohite	In month of january	Creating frontend [login page,home page]
2.		In month of february	Adding more features like manage vehicle,history
3.		In month of march,april	Adding slots and backend and completion of the project.

Chapter 8

8.Conclusion:

The sole purpose of this work was to take the conventional parking system to another level by adding automated parking ans security for vehicles. By automation,whole manual process of noting the vehicle numbers and showing the free parking slot was replaced by a system which captures images and extract vehicles number frem that image and sends it to the database.We also included security for registered users by sending a notifications to the respective user.

The implementation of the right parking management system is a great investment. It will save costs, time and energy. In addition, our parking management system guarantees that your parking facility will work far more efficiently.

We, from a parking telecom, offer complete on-street and off street parking management systems and solutions. They all can be customized for the needs of your parking area. Learn more about the advantages of parking management system and check our solutions here. You can also follow us on Facebook, Instagram, LinkInd and Youtube to be the first to know about innovations in the smart parking industry.
The services provided by smart parking have become the essence of building smart cities. This paper focused on implementing an integrated solution for smart parking. The proposed system has several advantages, including detecting parking   spaces using the Internet of Things and calculating the time of entry and exit and calculating the expected cost. An attractive and effective application was designed for Android mobile phones.
The system benefits from avoiding wasting time and reducing pollution and fuel consumption. Users can book a car park
for 24 hours.

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