A Mini Project Synopsis on

Online Parking Slot System

S.E. - I.T Engineering

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CERTIFICATE

This to certify that the Mini Project report on "**ONLINE PARKING SLOT SYSTEM"** has been submitted by Bhavika Band (21204002), Divyal Chheda (21204005) and Pratik Pandit (21204009) who are a Bonafide 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 **2021-2022** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

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Chapter 1

Introduction

Parking Lot Management System is a software for the parking admins where the users/customers can manage their cars to be parked. Today, convenient parking spaces drive people to decide where to go and spend the day. Vehicle parking spaces are occupied by numerous vehicles every day that complicates the management processes. There is a need for development in the methods and systems used in managing vehicle parking areas. The system will allow the parking lot administrator to electronically encode and store the records of parking slots availability, parking duration, and customers and vehicles information.

The development of the project will eliminate the challenges and errors encountered in the pre-existing method used in managing vehicle parking space. The system will ease up the management process and increase operational efficiency and services of vehicle parking areas rendered to its customers. The development of the system will directly benefit businesses like malls which parking space services are an integral part of operating their business.

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. The records are essential to efficiently manage vehicle parking areas to avoid errors and problems for both, the parking administrator and customers.

Vehicle parking spaces are essential for vehicle owners whenever they visit places to spend their time with. However, shortage of parking spaces and congestion in-vehicle parking areas are still eminent nowadays due to a large number of visitors in search of a parking place. Vehicle parking spaces are occupied by numerous vehicles every day that complicates the management processes. There is a need for development in the methods and systems used in managing vehicle parking areas.

1.1.**Purpose:**

The purpose of Parking Lot Management System is in computer system of the parking slot service computation of the rate is easily & quickly done. It focuses mainly on dealing with customer's parking details with their number, and slot. Also, the system allows inserting details of vehicle owners including their contact number, vehicle number, and vehicle category. But here, the system automatically sets a slot for reservation after inserting vehicle details until the vehicle gets out. Talking about parking slots, the system indicates empty and occupied slots with green and red color respectively. In an overview of this system, it displays all the parked vehicles under the manage vehicles section where the user can cancel the parking once it's done.

1.2 **Objectives:**

The objectives of our project are as follows:

- To develop an automated system to electronically manage Vehicle Parking areas.
- To reduce manual workloads and paper works of the vehicle parking management staff.
- To increase the operational efficiency of vehicle parking areas.
- To improve overall customer satisfaction by improving vehicle parking services.
- To assess the system's acceptability, efficacy, quality, timeliness, and productivity from the perspective of vehicle parking management.

1.3 **Scope:**

The proposed system is being developed keeping in mind the requirements/need of the client to automate its existing system for record keeping, report generation and management level information system. Keeping in mind the needs, the system has been developed as per guidelines laid by the client's center. The system is capable enough to handle vehicle records, parking slots records, etc. It manages all the information about Vehicles, Slots, Customer. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The proposed project on Parking Slot Management system tries to bridge the gap by tracking the vehicle and customer details along with Parking slots availability. Hence, the aim of project entails the design and implementation of a platform that will assist clients in gaining access of parked vehicles through this system.

Chapter 2

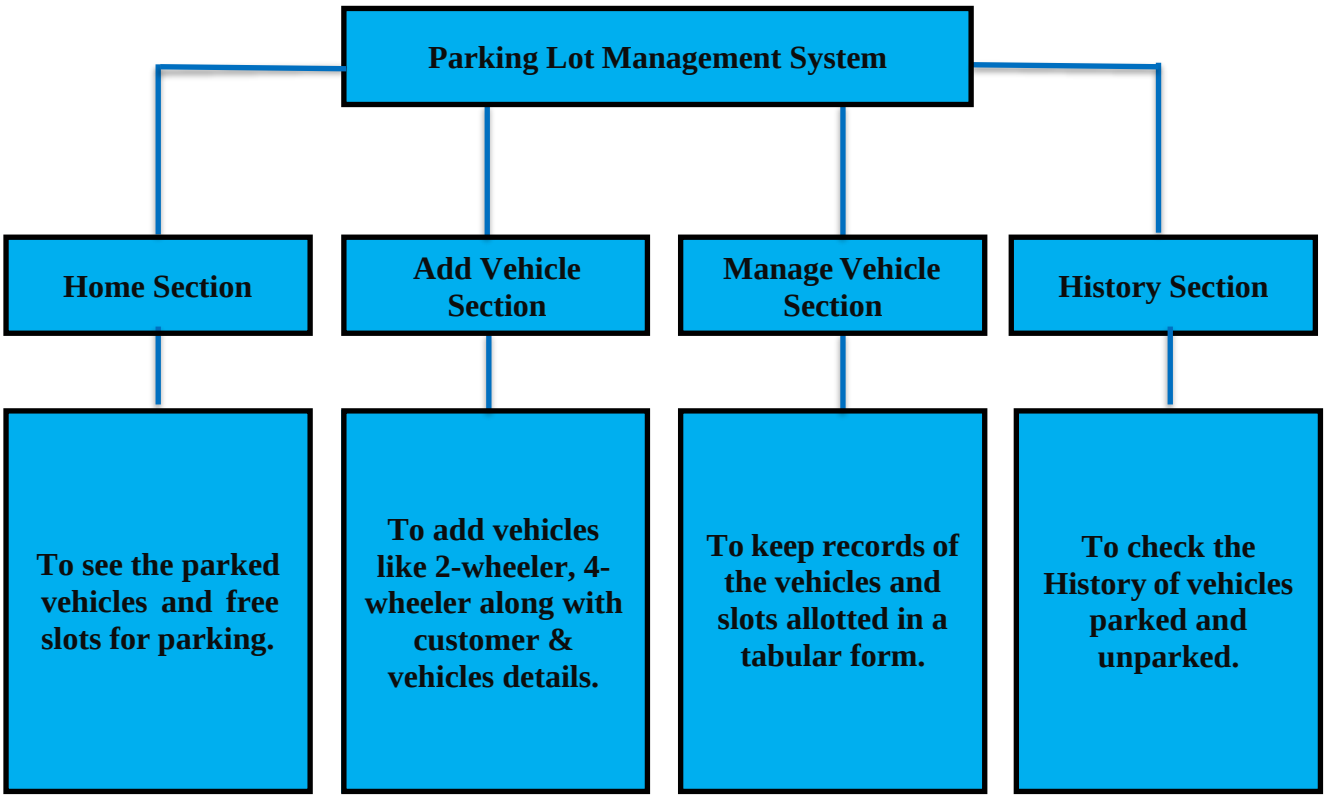
Problem Definition

Now-a-days, there are very few parking slots available and users/customers don’t know where it is available. Taking all this information manually is very difficult and time taking process. To handle all these activities, include various processes and paper work from the management side also. The Parking slot management system is supposed to be effective and utilize the resources in an optimum manner to ensure timely service with least cost. Every aspect of the operation from vehicles details, customer details, along with start and end time of vehicle parked are been designated here. So, Parking lot is an open area designated for parking cars. We will design a parking lot where a certain number of cars can be parked for a certain amount of time. The parking lot can have multiple floors where each floor carries multiple slots. Each slot can have a single vehicle parked in it. The design and implementation of this system will be the goal of this project

Chapter 3

Proposed System:

- In computer system of the Parking slot management computation of the rate is easily & quickly done.
- Computer system of the parking slot provide fast access.
- It contains better storage capacity.
- Accuracy in work.
- Easy & fast retrieval of information.
- Well-designed details.
- Decrease the load of the person involve in existing manual system.
- Access of any information individually.
- Work becomes very speedy.
- Efficient to Track vehicle details.
- Easy to update information.



3.1 **Features and Functionality:**

1. **User-friendly interface:**

   - Interface is bound to simple and very friendly as per the user is concerned. That is, we can say that the project is user friendly which is one of the primary concerns of any good project.

2. **Easy Booking /Tracking System:**

   - The user can easily book a parking slot and can track the vehicles. They don't have to wait for many days without any update. They will receive every update about vehicles after parked.

3. **Add/Delete Vehicle Details:**

   - The admin can add vehicles and its details and If the time slot provided for parking, it can be easily unparked.

4. **Add/Delete Customer details:**

   - The new client can be easily created with some details or the client can be deleted or we can update client details if any

5. **Less paper work:**

   - Before, there was so much of paper work when courier was to be booked. Now, they can easily book the courier and can track courier.

Chapter 4

Project Outcomes:

- "Parking Slot Management System" simplifies the management process in vehicles andcustomer details.
- Users can decide about places they want to visit and make bookings online for parking andclient details.
- Any parking slot management can make use of this project for saving customer details indatabase.
- We can add new features as and

  when we require. Navigation

  through the project is easy.
- This application can be easily implemented under various situations. Reusability of thisapplication is also possible.
- Fast processing and immediate result

  with high security.Minimizing human

  effort and cost efficiency databases.
- Our project invokes all base tasks that are now carried out manually, such as the formstransactions and reports which is added advantage.
- The proposed System is completely computer-based application.
- Thousands of records can search and displayed without taking any significant time.
- Gives accurate information.
  - Simplifies the manual work.
  - It minimizes the documentation related work.
  - Provides up to date information.
  - Clients' details can be provided

Chapter 5

Software Requirements:

FRONTEND:

Python 3.10

Tkinter

BACKEND:

db - MySQL

xampp, phpMyAdmin

EDITOR**:**

Visual Studio Code (VS Code)

OPERATING SYSTEM:

Windows 10

Chapter 6

Project Design:

In this phase, a logical system is built which fulfils the given requirements. Design phase of software development deals with transforming the client's requirements into a logically working system. Normally, design is performed in the following in the following two steps:

1. Primary Design Phase:

In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimizing the information flow between blocks. Thus, all activities which require more interaction are kept in one block.

2. Secondary Design Phase:

In the secondary phase the detailed design of every block is performed.

The general tasks involved in the design process are the following:

- Design various blocks for overall system processes.
- Design smaller, compact and workable modules in each block.
- Design various database structures.
- Specify details of programs to achieve desired functionality.
- Design the form of inputs, and outputs of the system.
- Perform documentation of the design.
- System reviews.

3. User Interface Design:

User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

The following steps are various guidelines for User Interface Design:

1. The system user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appear in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.
7. The system user should never get an operating system message or fatal error.

Chapter 7

Project Scheduling:

Sr. No	Group Member	Time duration	Work to be done
1	Divyal Chheda	1st week of January	Implementing 1st module/ functionality: Login form with database and Home tab
		2nd week of January	Testing 1st module: Is user able to login and Home tab is working properly or not
2	Bhavika Band	3rd week of January	Implementing 2nd module/ functionality: Add Vehicles Module and History module.
3	Pratik Pandit	By the end of March month	Implementing 3rd module/ functionality: Manage Vehicles module

Chapter 8

Conclusion:

This project has solved the problems caused due to centralization and inefficient updating of a parking slot management system and has additionally used the help of Cloud Computing to enable scaling and load balancing to enable High Availability and Fault Tolerance. Proper checks and balances have been incorporated into this and have reduced the scope of errors to near zero. Deploying it in the cloud can be done through two services and the company can chose one which suits their purpose. This study was conducted to implement a Parking Slot Management System using Python. The developed system was presented to the target users and respondents for assessment. The result of the assessment showed that the developed system is an effective tool to increase the efficiency and services offered in vehicle parking areas. The developed system can indeed provide efficient and convenient parking services to the customers. The use of data visualization by taking data from the application can be used to measure performances and plan better approaches to achieving the target. Finally, we can say that our project “Parking Slot Management System” has developed an easy way to add/update/delete client’s details and to book courier and track accordingly. Further enhancements can be made to the project, so that the website functions in a very attractive and useful manner than the present one. It is concluded that the application works well and satisfy the needs. The application is tested very well and errors are properly debugged. It also acts as the sharing of files to the valuable resources.

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