



MANIPAL UNIVERSITY JAIPUR

B.Tech Program First Year
Course: Experiential Learning
Course Code: DA1001

PARKING MANAGEMENT SYSTEM

by

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Under the guidance

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CERTIFICATE

This is to certify that the project titled “**Parking Management System**” is a record of the bona fide work done by **Snehal Sinha (219301414)** submitted for the partial fulfilment of the requirements for the completion of the Experiential Learning (DA1001) course in the Department of **CSE** of Manipal University Jaipur, during the academic session October to February 2022.

Signature of the mentor _____

Name of the Mentor

Designation of the mentor

Department of _____

Signature of the HoD _____

Name of the HoD

Head of the Department

Department of _____

ABSTRACT

Parking management system is a label used for many products in the parking industry. It can sometimes be hard to figure out what it actually means.

Managing a car park isn't as easy as you think and there are lots of moving parts. This is where parking management solutions come into play. It's a system which helps people to manage their car parking.

In the current scenario of parking management system, optimal usage of parking space, time, bill management and the abruptness to park vehicles are critical factors.

Technology based Parking Management System is an automated and advanced solution that provides management of vehicles right from an entry in the parking area to the exit.

Optimizing the parking space for vehicles is still a problematic area in various places.

INTRODUCTION

The project entitled Parking Management System is to manage the car parking bay.

This software helps the company to track all the cars, car location, car in and car out details, apart from this it also helps in accounting. Using this software, we can track entry and exit time of each car and its bill tariff.

Parking Management System is efficient as it is structured, systematic, user- friendly, and secured.

Our Parking Management System will ease people's task of finding safe parking slots. The system helps an individual to find free slots available in real time

Our parking management solution can significantly offer benefit to both the user and the parking lot owner as it helps in reducing traffic by enhancing user experience.

This system supports various parking applications that can easily handle and organize the data of vehicles.

To rectify the complications of parking security, our parking management system allows to recognize and validate the automobiles at both entry and exit points.

Since we believe that every parking management system is unique, one may require customized parking management systems in order to achieve optimal operation and we provide a custom parking management solution as per your requirements in designing entries and exits, traffic flow, payment systems, and access management.

OBJECTIVES (OSCAR)

To make the project with the following features:

➤ Organized Customer Details

Parking management stores customer details in an organized manner, asking the customer to enter the details and updates the table.

➤ Secure Nature

It ensures security and privacy of each customer, such that the records of any user are not accessible to others.

➤ Calculates Bill

Parking management uses a particular bill tariff to calculate individual bills for customers.

➤ Assigns Slots

Slots are assigned to each user to park their cars; thus, saving their time.

➤ Robust (Status Oriented)

Parking management is a robust software designed intricately, and updates status regularly.

METHODOLOGY

PAMS is structured, systematic and user friendly. It aims to cater to the user. The software asks the customer to input user details such as Name, Password and Car Number.

These details are stored into the SQL table and the entry time of the customer is noted and updated. The customer is asked to enter a unique password for security purposes.

Slot assignment is done according to the first slot that is vacant at the time of the customer's visit; an available slot is assigned to them.

The code then reverts back to giving a choice to the customer, either to enter the parking lot or to exit it. In case there aren't any vacant slots available, a message is displayed that lets the customer know that the parking is full.

At the time of exit, the software asks the user to input the password they previously entered, and their car details. This is to check for which customer is exiting the parking lot from the given record table in SQL. The current time (exit time) is once again recorded.

The software then generates a Customer Bill according to a given bill tariff which calculates the bill according to the time spent by the customer.

The full Customer Bill including all details given by the user, the slot number, entry & exit time with the duration is then displayed on the screen.

In the event of a customer exceeding the limit for parking which is 24 hours, the user is notified about a tow truck being called.

RESULTS & DISCUSSION

The current parking system is not so efficient in a way that it is very time consuming.

It does not provide the directions and locations of the empty parking slots. In the future, it can be extended to show the maps and direction signs for parking space detection.

It can be made more appealing & user-friendly by advance and attractive Graphic User Interface.

HARDWARE/SOFTWARE REQUIREMNET

➤ HARDWARE:

- X86 64-bit CPU (Intel(R) Core (TM) i3-7th Gen)
- 8 GB RAM

➤ SOFTWARE:

- Frontend: Python

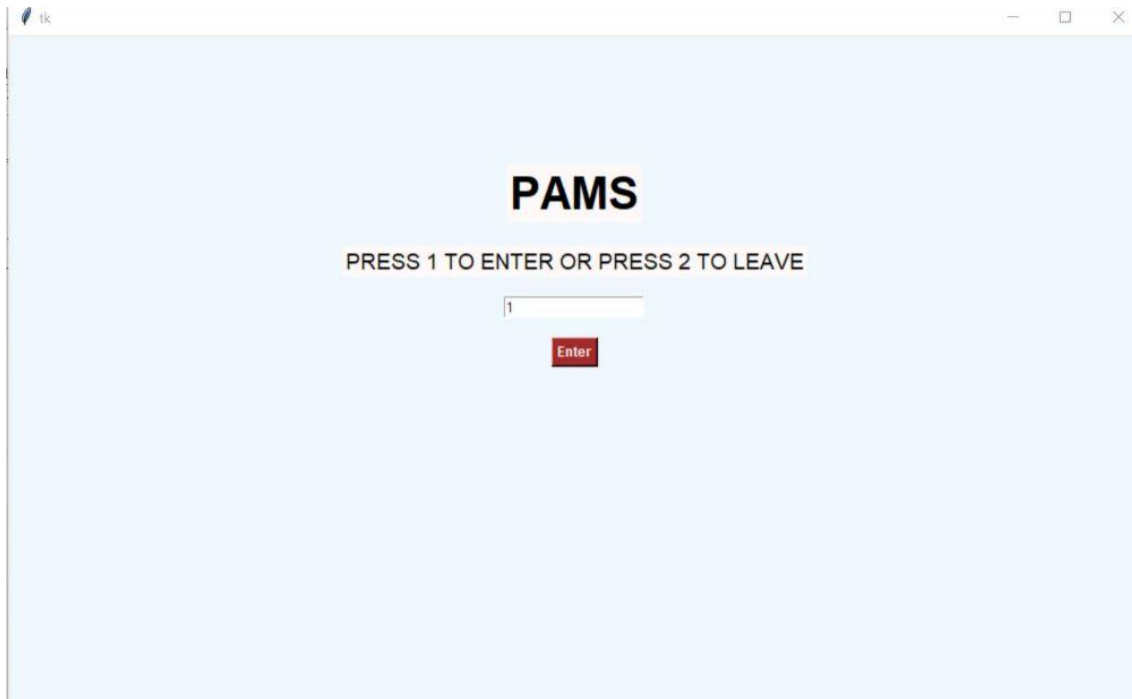


- Backend: MySQL



- GUI: Tkinter (Canvas)

OUTPUT SCREENS



A screenshot of a Tkinter window titled 'tk' with a light blue background. The window displays the text 'PAMS' in a large, bold, black font. Below it, the instruction 'PRESS 1 TO ENTER OR PRESS 2 TO LEAVE' is shown in a smaller black font. A text input field contains the number '1'. Below the input field is a red button with the text 'Enter' in white.

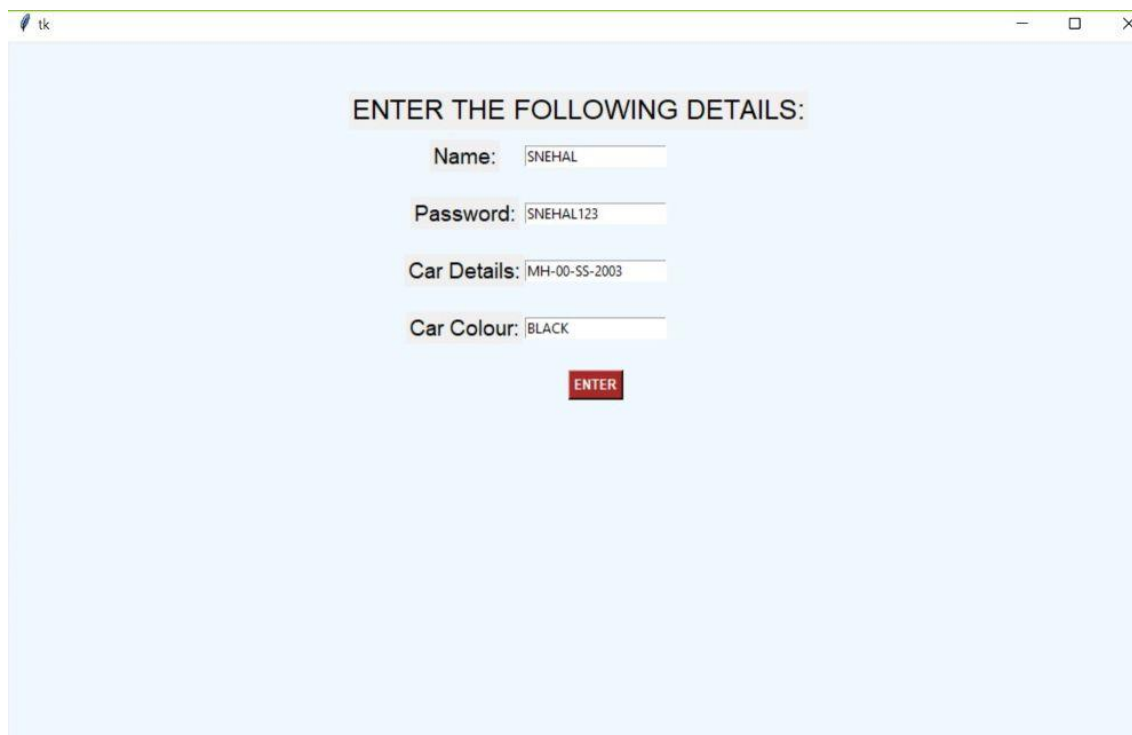
tk

PAMS

PRESS 1 TO ENTER OR PRESS 2 TO LEAVE

1

Enter



A screenshot of a Tkinter window titled 'tk' with a light blue background. The window displays the text 'ENTER THE FOLLOWING DETAILS:' in a bold black font. Below this text are four labels with corresponding text input fields: 'Name:' with 'SNEHAL', 'Password:' with 'SNEHAL123', 'Car Details:' with 'MH-00-SS-2003', and 'Car Colour:' with 'BLACK'. At the bottom center is a red button with the text 'ENTER' in white.

tk

ENTER THE FOLLOWING DETAILS:

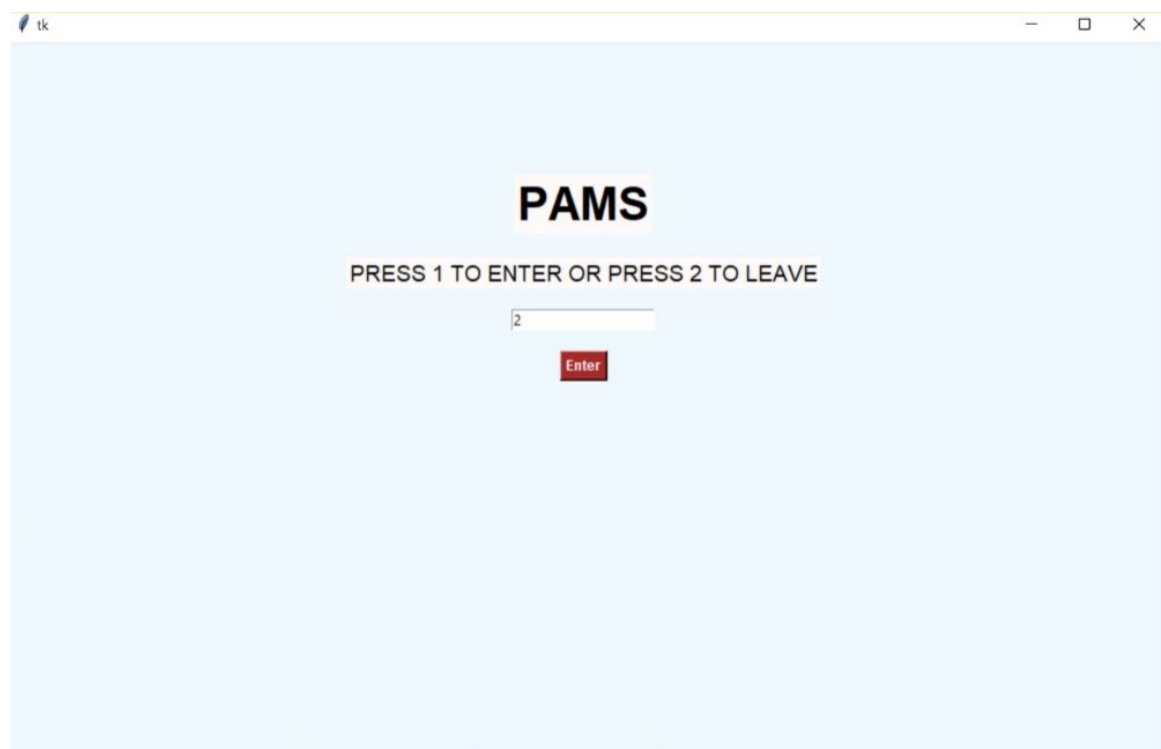
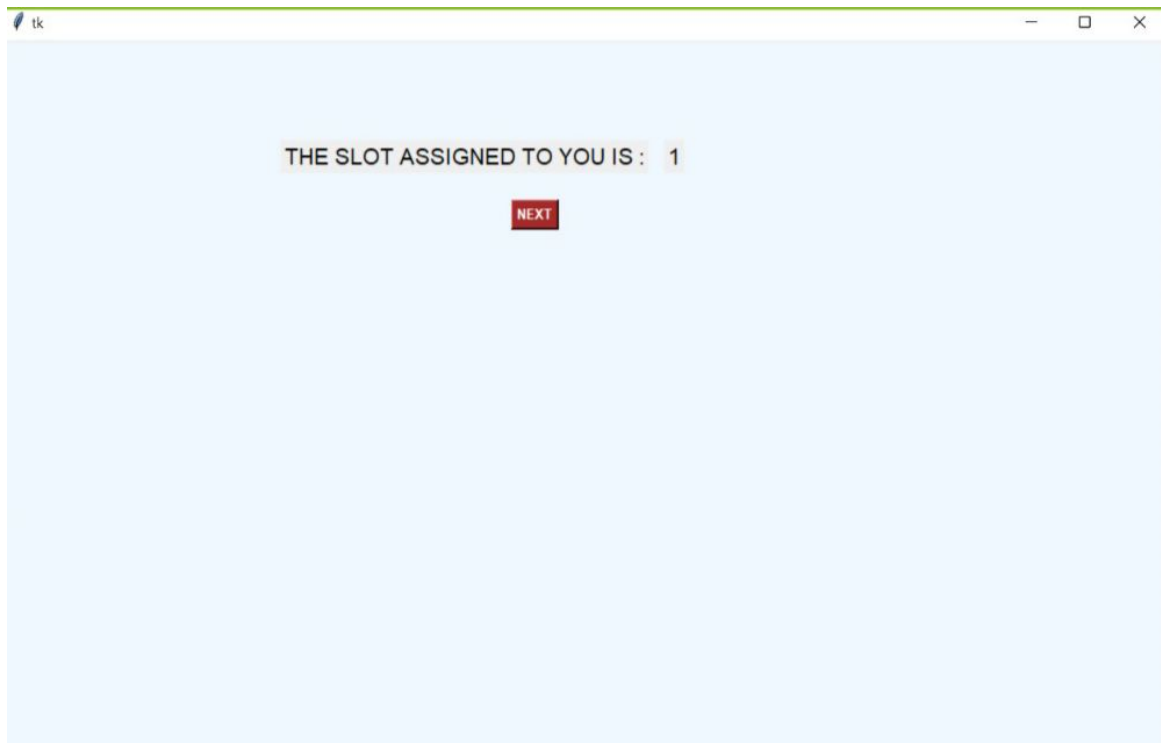
Name: SNEHAL

Password: SNEHAL123

Car Details: MH-00-SS-2003

Car Colour: BLACK

ENTER



tk

— □ ×

PLEASE ENTER YOUR PASSWORD: SNEHAL123

PLEASE ENTER YOUR CAR DETAILS: MH-00-SS-2003

NEXT

tk

— □ ×

CUSTOMER DETAILS

NAME: SNEHAL

CAR DETAILS: MH-00-SS-2003

CAR COLOUR: BLACK

SLOT NUMBER: 1

ENTRY TIME: 2022-02-24 11:31:22

EXIT TIME: 2022-02-24 11:32:37.051028

DURATION: 0:01:15.051028

TOTAL:(₹) 15

THANK YOU!

DRIVE SAFE.

NEXT

CONCLUSIONS

The purpose of our parking management system will overcome all the challenges and difficulties that are there in the conventional car parking system.

It saves us the time as slots are already provided at the beginning and effort that we put into this task to find the slots.

It efficiently calculates the tariff and displays the bill to the user.

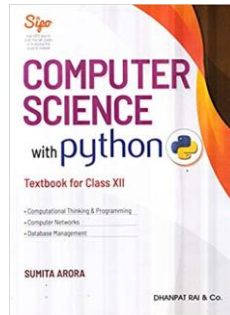
It could help bring order out of chaos that exists at present in the car parking issue and makes it really simple and easy.

LIMITATIONS & FUTURE SCOPE

1. All the Slots status (vacant or full) to be projected/shown to the user. Thus, giving them a choice to book the slot.
2. Slots kept fixed for staffs.
3. Maps & direction signs can be shown for parking space detection.
4. In the future it can be extended which is not only specific to mall but also to companies, societies and public parking.
5. Pre-booking of the slots can be done online, making it time efficient.
6. Can be made more appealing & user-friendly by advance and attractive Graphic User Interface.

REFERENCES

- Computer Science with Python (2020-2021),
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Co.



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