

**PASSPARK.COM**  
**ONLINE PARKING RESERVATION SYSTEM**  
  
**A PROJECT REPORT SUBMITTED IN PARTIAL**  
**FULFILMENT OF REQUIREMENT**  
**FOR THE AWARD OF THE DEGREE**  
**MASTER OF COMPUTER APPLICATION (MCA)**  
  
**OF**  
  
**MAHATMA GANDHI UNIVERSITY, KOTTAYAM**  
  
**BY**  
  
**Alfin varghese**  
**Reg No : 22PMC108**



**MARIAN COLLEGE**  
**KUTTIKKANAM**

(AUTONOMOUS)

MAKING COMPLETE

**Marian College Kuttikkanam Autonomous**

**Peermade, Kerala – 685 531**

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A Project Report on

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**Reg No : 22PMC108**

**Under the guidance of**

**Mr. Satheesh Kumar S**

**Assistant Professor**

PG Department of Computer Applications

Marian College Kuttikkanam Autonomous



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**Marian College Kuttikkanam Autonomous**

**MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**KUTTIKKANAM – 685 531, KERALA.**

**CERTIFICATE**

This is to certify that the project work entitled

**PASSPARK .COM**

is a bonafide record of work done by

**Alfin varghese**

**Reg No : 22PMC108**

In partial fulfillment of the requirements for the award of Degree of

**MASTER OF COMPUTER APPLICATIONS [MCA]**

During the academic year 2022-2023

  
**Mr. Satheesh Kumar S**

Assistant Professor

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PG Department of Computer Applications

Marian College Kuttikkanam Autonomous

  
Examiner



  
Examiner

## **ACKNOWLEDGEMENT**

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Finally, I express my deep appreciation to all my friends and family members for the moral support and encouragement they have given to complete this project work successfully.

**ALFIN VARGHESE**

## **ABSTRACT**

The Parking Reservation System is a parking guidance and reservation system in towns. The project contains the admin sides and the user side. The admin can view and manage the users, and manage the parking area. The users are the clients who want to park their vehicles in the parking area. A user has to login first to make the parking pass. If he/she has not registered, they can register first and then login. Then users can book parking slots . Looking for spaces to park can be really hectic in a busy town in regard to walking distance to your destination from your vehicle, safety of the vehicle...etc. If one happens to be a stranger in town it gets more difficult to operate around the town. This project is a very simple project that solves all these parking cycle issues.

## **OBJECTIVE AND SCOPE**

- The objective of a parking reservation system is to provide a convenient and efficient way for individuals or organizations to reserve parking spaces in advance
- Reservation Management: The system allows users to search for available parking spaces, view their details (such as location, availability, and pricing), and make reservations based on their preferences.
- User Registration and Authentication: Users need to create accounts and authenticate themselves to access the reservation system. This enables personalized experiences, such as storing payment information, maintaining reservation history, and receiving notifications.
- Availability Management: The system must keep track of parking space availability in real-time, updating the status as spaces are reserved or become vacant. This information should be reflected accurately to users during their search and reservation process.

## **PROBLEM STATEMENT**

The current parking system faces several challenges, including inefficiencies, lack of convenience, and difficulty in finding available parking spaces. These problems lead to frustrated users, wasted time, and suboptimal utilization of parking resources. Therefore, the objective is to develop a parking reservation system to address these issues and provide a seamless parking experience for users.

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# **1.INTRODUCTION**

## **1.1 PROBLEM STATEMENTS**

The current parking system faces several challenges, including inefficiencies, lack of convenience, and difficulty in finding available parking spaces. These problems lead to frustrated users, wasted time, and suboptimal utilization of parking resources. Therefore, the objective is to develop a parking reservation system to address these issues and provide a seamless parking experience for users.

## **1.2 PROPOSED SYSTEM**

The proposed parking reservation system aims to overcome the challenges of the current parking system by providing a comprehensive and user-friendly platform for reserving parking spaces. The system will leverage technology to streamline the process, enhance convenience, and optimize parking space utilization. Key features of the proposed system include:

## **1.3 FEATURES OF THE PROPOSED SYSTEM**

The features of this website are:

- Responsive website design.
- User-Friendly navigation.
- Online Reservation Portal.
- Real-time Parking Space Availability.
- Administrative Dashboard.

## **2.FUNCTIONAL REQUIREMENTS**

## FUNCTIONAL REQUIREMENTS

1. **User Registration:** Users should be able to register and create an account in the system.
2. **User Login:** Registered users should be able to log in to their accounts using their credentials.
3. **Parking Search:** Users should be able to search for available parking spaces based on location, date, and time.
4. **Slot Availability:** The system should track and display the availability of parking slots in real-time.
5. **Booking Confirmation:** Users should receive a confirmation of their parking reservation, including details such as date, time, location, and slot number.
6. **User Profile Management:** Users should be able to manage their profiles, including updating personal information and viewing past parking reservations.
7. **Admin Dashboard:** An administrative dashboard should be available for system administrators to manage parking locations, slots, user accounts, and bookings.

## **3. NON FUNCTIONAL REQUIREMENTS**

## **ON-FUNCTIONAL REQUIREMENTS**

The non-functional requirements for this website are:

- Usability: The proposed website is simple, provides enough insight about features and packages, interactive, lets user select packages and schedule pick-ups and all this data is stored in the database.
- Reliability: The system must perform without failure in 95 percent of use cases during a month.
- Maintainability: The mean time to restore the system (MTTRS) following a system failure must not be greater than 10 minutes. MTTRS includes all corrective maintenance time and delay time.
- Availability: Describes how likely the system is accessible to a user at a given point in time. A user-friendly system with global accessibility should be available around-the clock. In the event that the database is corrupted or the hardware fails, a replacement page will appear. Additionally, a database backup should be kept in case of hardware failure or database corruption.
- Security: Database should be backed up every hour. Under failure, system should be able to come back at normal operation under an hour. All data must be stored, protected, or protectively marked.

## **4. THIRD-PARTY LIBRARIES**

## THIRD-PARTY LIBRARIES

Third-party applications and libraries in Django are pre-built components or packages developed by the community or other companies that you can use to extend the functionality of your Django projects. These libraries provide pre-built solutions for common tasks, saving developers time and effort in implementing certain features from scratch. They are designed to seamlessly integrate with Django and follow its best practices.

Third-party libraries can be installed using package managers like pip, and they usually come with their own documentation and examples to guide developers in their usage. These libraries can cover a wide range of functionalities

The third-party libraries used in this project are:

- **Django jazzmin:** Django Jazzmin is a third-party library for Django that provides an improved admin interface. It is a modern, responsive, and customizable replacement for Django's default admin interface, a drop-in app to jazz up your Django admin site, with plenty of things you can easily customize, including a built-in UI customizer.



# **5.FEATURES AND HIGHLIGHTS**

## FEATURES AND HIGHLIGHTS

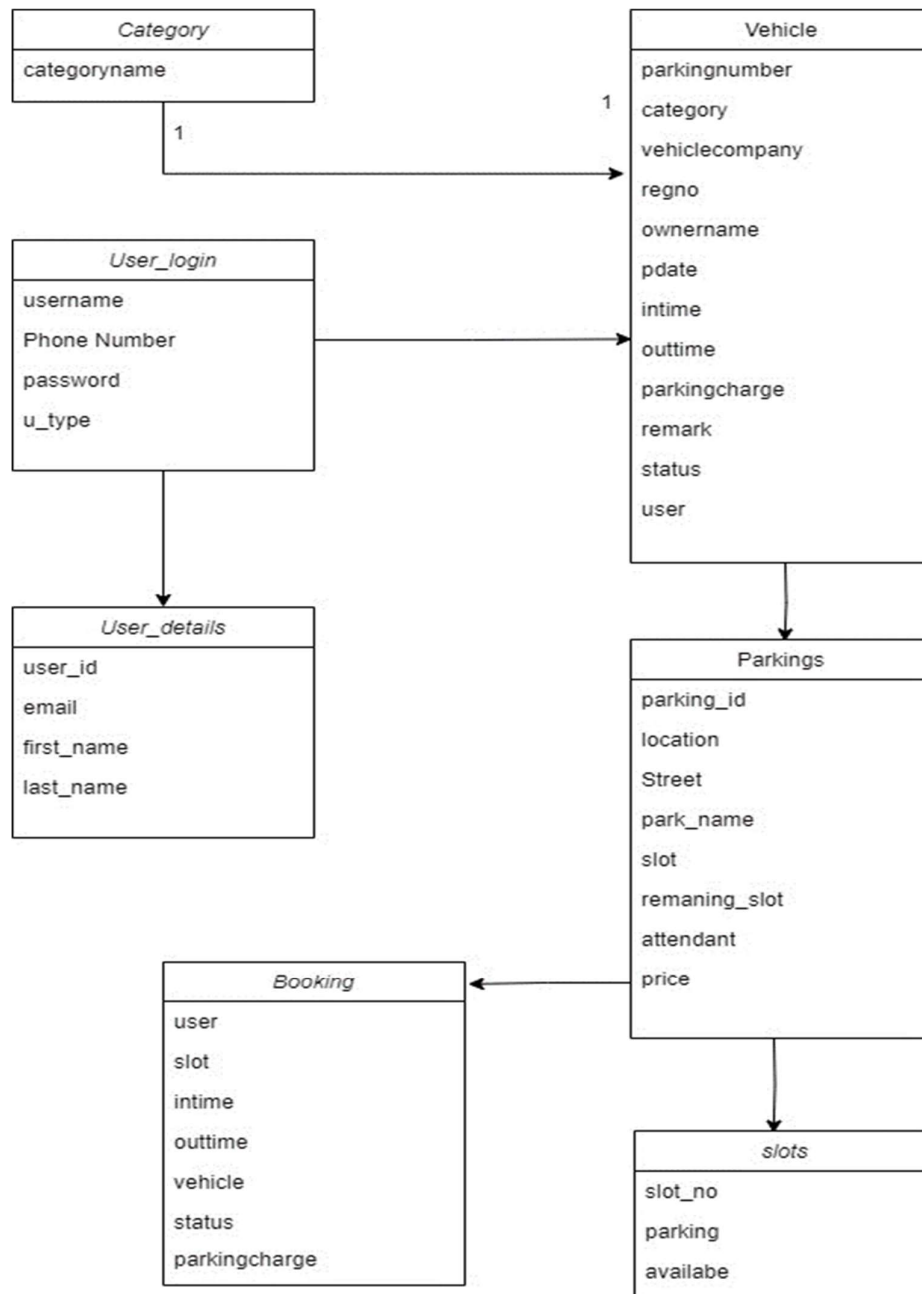
- 1.Users can register and login into the system.
- 2.Users can search parking places.
- 3.Users can view different parking locations.
- 4.Users can add vehicles.
- 5.In user home page user can edit and view vehicles details.
- 6.User can take print of booking details.
- 7.User can book parking slots for their vehicle.
- 8.If we click book now in slot, book now will changes to booked state.
- 9.The available slots number will reduce when booking slots.
- 10.The Admin can view
  - 1.Todays vehicle entries
  - 2.Yesterdays vehicle entries
  - 3.Last 7 days vehicle entries
  - 4.Total vehicle entries
- 11.Admin can add Vehicle Category.
- 12.Admin can edit Vehicle category.
- 13.Admin can Manage IN and OUT Vehicles.
- 14.Admin will get between dates report.

## TECHNICAL ASPECTS

- **Presentation Layer:**
  - **User Interface (UI):** This layer includes the components that interact with users, such as web pages or mobile app screens.
  - **Django Templates:** Django's built-in template engine allows you to define HTML templates that render dynamic content and interact with the back-end.
- **Application Layer:**
  - **Django:** Django serves as the back-end framework, handling HTTP requests, routing, and managing the application's business logic.
  - **Django Views:** Views receive requests from the user interface, process data, and generate appropriate responses. They interact with models, services, and external APIs as needed.
  - **Django Forms:** Forms handle user input validation and data submission, allowing users to input and update travel-related information.

# **6.DATABASE CLASS DIAGRAM**

## CLASS DIAGRAM



## **7. CHALLENGES FACED DURING THE DEVELOPMENT**

- **User Authentication and Authorization:** Implementing a secure and reliable user authentication and authorization system can be challenging. You need to ensure that only authenticated and authorized users can access and perform actions within the reservation system.
- **Database Design and Management:** Designing an efficient and scalable database structure for storing parking-related information can be complex. Plan the database schema carefully, considering factors such as user data, parking lot information, reservations, and availability. Use appropriate indexing and caching techniques to optimize database performance.
- **Reservation Conflict Resolution:** Managing conflicts when multiple users try to reserve the same parking spot simultaneously can be tricky. Implement a mechanism to handle conflicts and ensure that only one user can reserve a spot at a given time. Techniques like optimistic locking or using timestamps can help in resolving conflicts.
- **Payment Integration:** Integrating payment gateways or implementing a secure and reliable payment system can be challenging. Ensuring secure transactions, handling different payment methods, and managing refunds and cancellations require careful implementation and adherence to security standards.
- **User Experience and User Interface:** Designing an intuitive and user-friendly interface for making reservations can be a challenge. Conduct user research, gather feedback, and iterate on the user interface to provide a smooth and hassle-free experience for users. Focus on usability, responsiveness, and accessibility considerations.
- **Testing and Quality Assurance:** Thoroughly testing the parking reservation system to identify and fix bugs, as well as ensuring its reliability, can be a significant challenge. Implementing unit tests, integration tests, and conducting usability testing can help ensure the system functions as expected and meets user requirements.

## **8. FUTURE ENHANCEMENTS**



## **FUTURE ENHANCEMENTS**

- **Mobile Application:** Develop a mobile application for the parking reservation system to allow users to easily book parking spaces, receive notifications, and manage their reservations on their mobile devices.
- **Real-Time Availability:** Implement real-time availability updates to provide users with up-to-date information on parking space availability.
- **Advanced Booking Options:** Add advanced booking options such as hourly, daily, weekly, or monthly bookings to accommodate different user needs and preferences.
- **Loyalty and Rewards Program:** Implement a loyalty program to reward frequent users with points, discounts, or exclusive benefits. This can encourage customer retention and increase user engagement.
- **Pre-Booking and Pre-Payment:** Allow users to pre-book and pre-pay for parking spaces in advance, reducing waiting times and providing a seamless parking experience.
- **Integration with Cashless Payment Systems:** Integrate the parking reservation system with cashless payment systems, such as mobile wallets or contactless payment methods, to offer convenient and secure payment options for users.
- **Analytics and Reporting:** Implement analytics and reporting features to provide insights into parking space utilization, popular time slots, revenue generation, and other key metrics.

## **9.CONCLUSION**

## CONCLUSION

The project was successfully completed within the time span allotted. All the modules are tested separately and put together to form the main system. Finally, the modules are tested with real data and it worked successfully. Thus the system has fulfilled the entire objective defined. Our goal of developing this project Parking Reservation System has come to a good result without many defects. Online vehicle parking reservation system improves the existing system since we are in computerized world. With this new system is mandatory, it enables the user of the system (client, employee, System administrator) to reserve a parking lot online and this reduces the wasting of time of the clients looking for where to park, increase the safety of the property since the parking lot is numbering. So this system provides all the available best services to all the customers

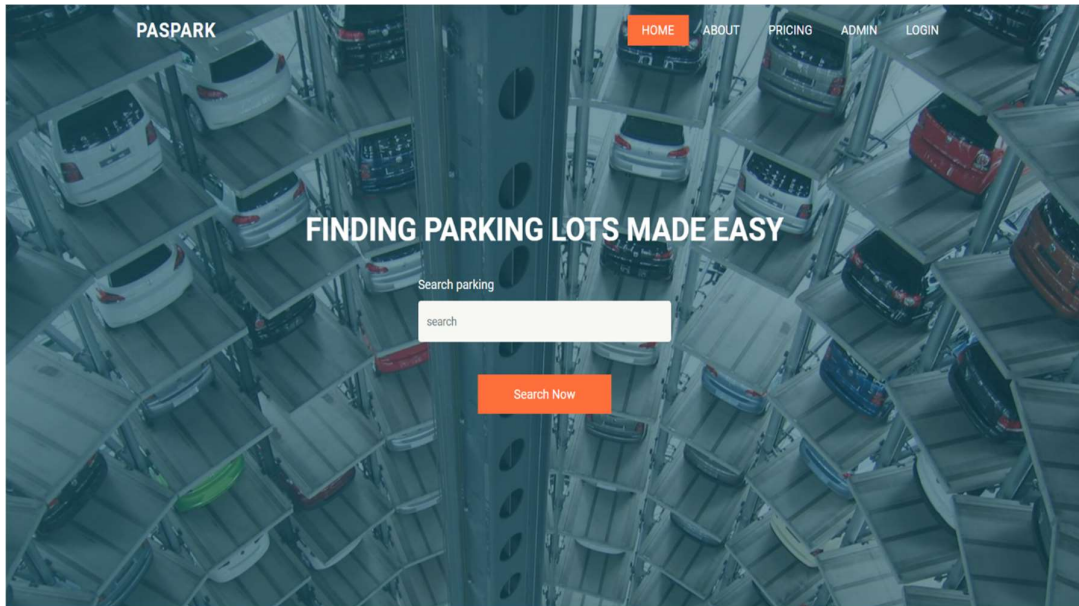
## **10.REFERENCES**

## REFERENCES

- <https://parclick.com/>
- <https://planyo-extras.s3.amazonaws.com/website/parking/parking.html>
- <https://github.com/alfinvargheseonline/parkingreservationsystem/tree/master>
- <https://django-jazzmin.readthedocs.io/installation/>

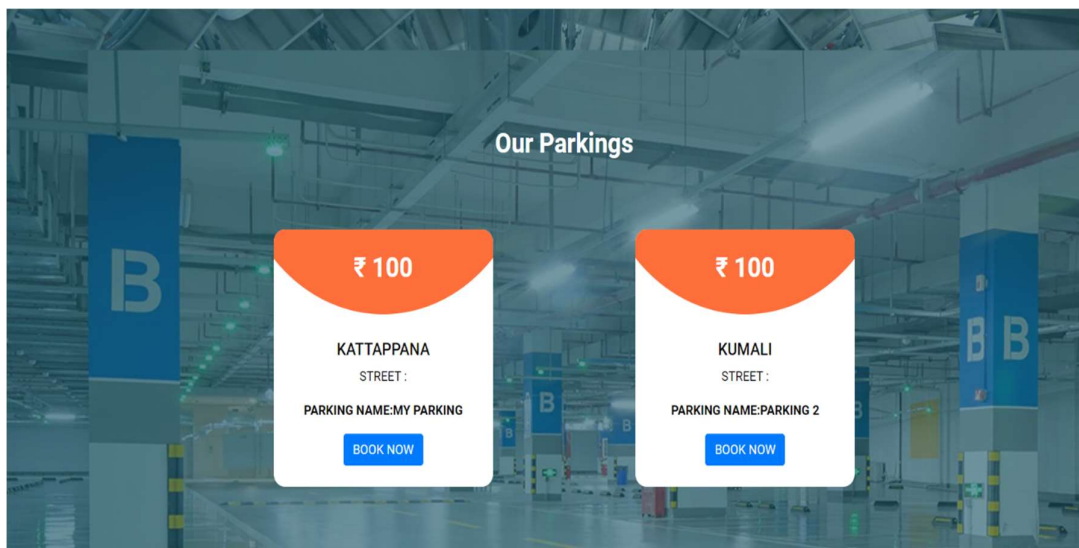
# **11.SCREENSHOTS**

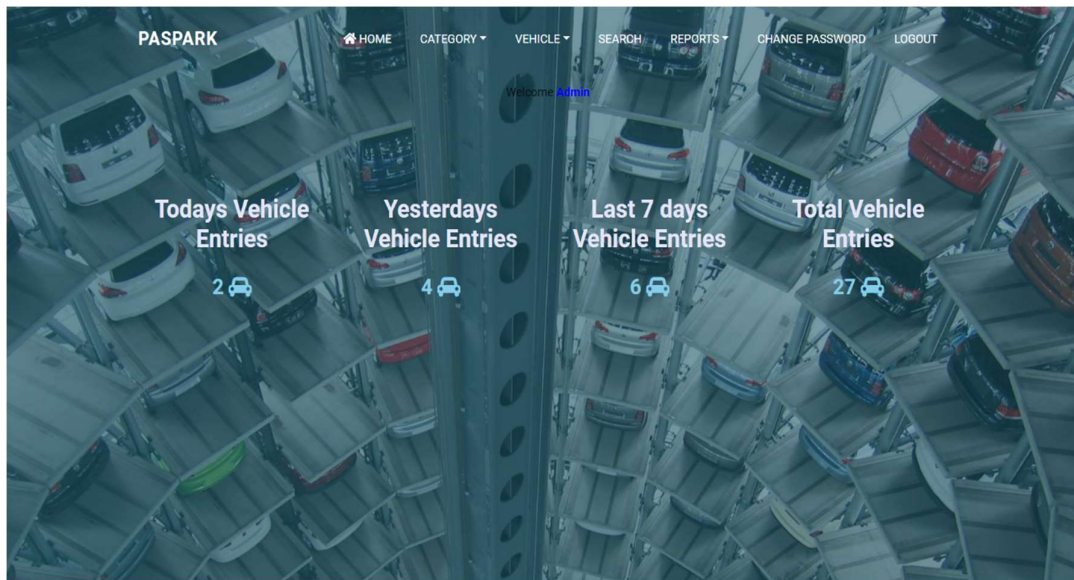
## SCREENSHOTS



## INDEX PAGE

- User can search and view parking locations.
- User login and registration can be done in index page
- Admin login portal also see in index page





### ADMIN HOME PAGE

- Admin can view number of vehicles Entered today, Yesterday, last 7 days and Total entries information's.
- Admin can add category
- Admin can see the vehicle in details and vehicle out details.
- Admin can search vehicles using parking id.
- Admin can get the detailed reports between the dates.
- Admin can change password



PASSPARK

HOME CATEGORY VEHICLE SEARCH REPORTS CHANGE PASSWORD LOGOUT

Welcome Admin

Manage Outgoing Vehicle

Copy Excel CSV PDF

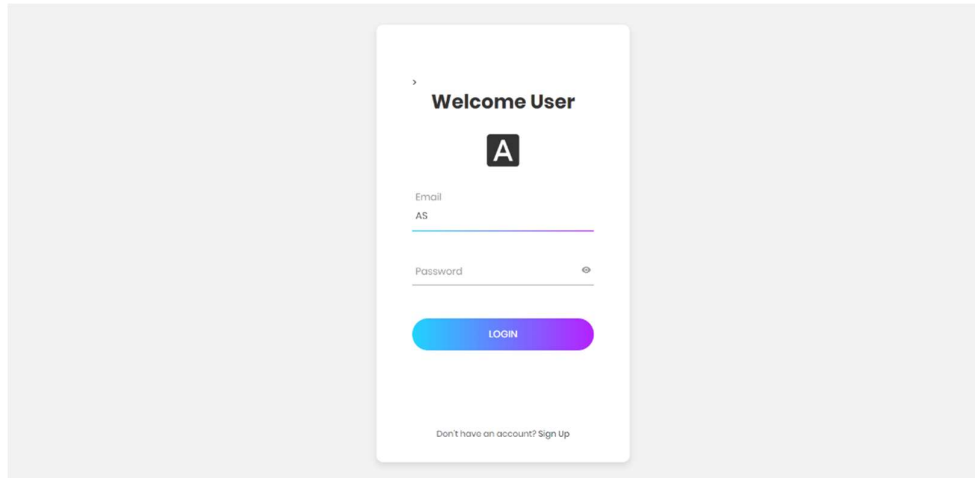
S.No.	Parking Number	Owner Name	Vehicle Reg No.	Action
1	88498579	Hari	MP04A2300	<a href="#">View</a> <a href="#">Edit</a>
2	77628675	adv	a22	<a href="#">View</a> <a href="#">Edit</a>
3	22920304	dim	KL 12 1234	<a href="#">View</a> <a href="#">Edit</a>
4	87894692	manu	12345	<a href="#">View</a> <a href="#">Edit</a>
5	89193802	alb	jskd	<a href="#">View</a> <a href="#">Edit</a>
6	75795228	niff	jskd44	<a href="#">View</a> <a href="#">Edit</a>
7	19814472	ALBIN	KL 01 1234	<a href="#">View</a> <a href="#">Edit</a>
8	45154285	albin	KL 09 1234	<a href="#">View</a> <a href="#">Edit</a>
9	33106077	Alfin	KL 09 1234	<a href="#">View</a> <a href="#">Edit</a>
10	74845136	alfin	kl 09 2345	<a href="#">View</a> <a href="#">Edit</a>

Showing 1 to 10 of 14 entries

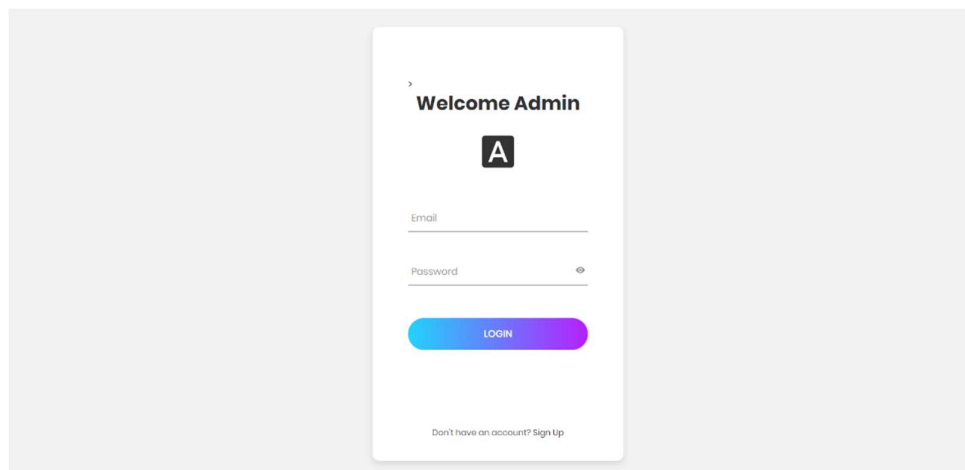
1 2 Next

### MANAGE OUT GOING VEHICLE

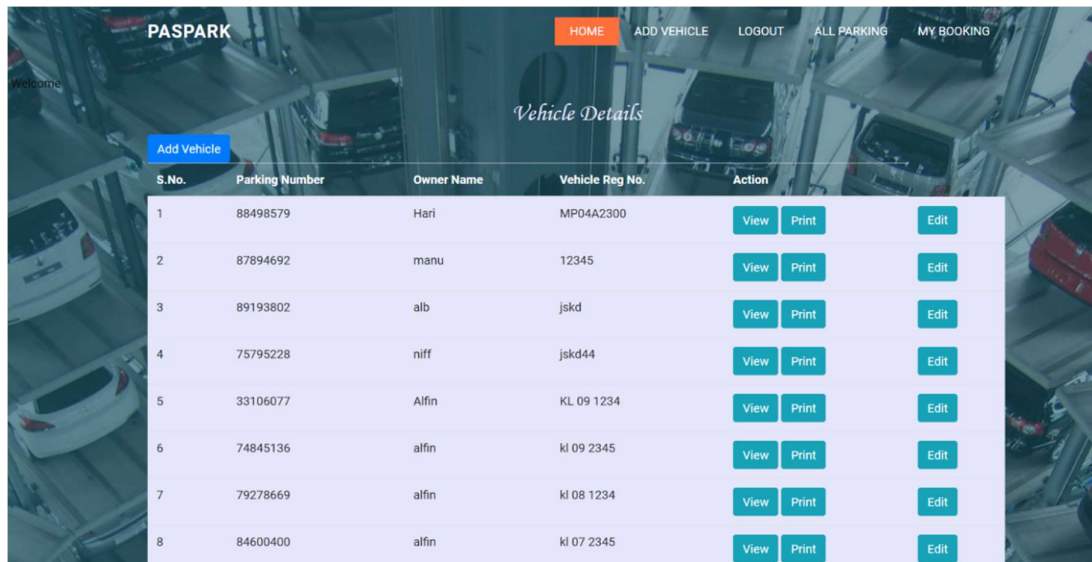
- Admin can view the details of outgoing vehicles and incoming vehicles.
- Admin can download details in the formats of excel, csv and pdf



## USER LOGIN



## ADMIN LOGIN



The screenshot displays the PASSPARK user interface. At the top, there is a navigation bar with links: HOME (highlighted in orange), ADD VEHICLE, LOGOUT, ALL PARKING, and MY BOOKING. Below the navigation bar, the page title "Vehicle Details" is centered. On the left, there is a button labeled "Add Vehicle". The main content area features a table with the following columns: S.No., Parking Number, Owner Name, Vehicle Reg No., and Action. The table contains 8 rows of data. Each row has three buttons in the Action column: View, Print, and Edit.

S.No.	Parking Number	Owner Name	Vehicle Reg No.	Action
1	88498579	Hari	MP04A2300	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
2	87894692	manu	12345	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
3	89193802	alb	jskd	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
4	75795228	niff	jskd44	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
5	33106077	Alfin	KL 09 1234	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
6	74845136	alfin	kl 09 2345	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
7	79278669	alfin	kl 08 1234	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>
8	84600400	alfin	kl 07 2345	<a href="#">View</a> <a href="#">Print</a> <a href="#">Edit</a>

### USER HOME PAGE

- The user can see vehicle details in home page .
- They can view, print and edit the vehicle details.
- In user home page there is an option add vehicle, we can add vehicle and book parking slots for our vehicle.

**PASPARK** HOME

### Add Vehicle Detail

Vehicle Category  
--Select Vehicle Category--

Vehicle Company

Registration Number

Owner Name

Owner Contact Number

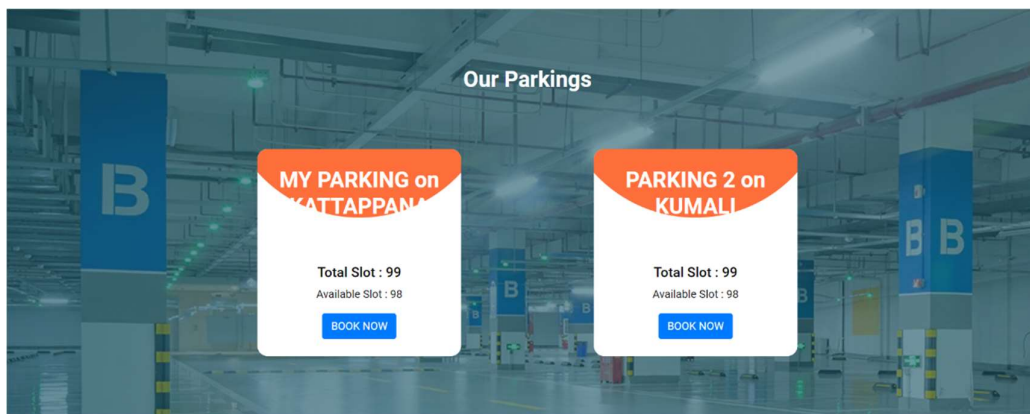
Contact Number

Parking Date  
dd/mm/yyyy

**Submit**

## VEHICLE ADD

We can add vehicle details.



## PARKING LOCATIONS

We can view available parking locations.

