BASAVARAJESWARI GROUP OF INSTITUTIONS

Ballari Institute of Technology & Management

AUTONOMOUS INSTITUTE UNDER VISVESVARAYA TECHNOLOGICAL UNIVERSITYJNANA SANGAMA, BELAGAVI 590018

INTERNSHIP

Report On

PARKING MANAGEMENT SYSTEM FOR THEATERS IN POC

Submitted in partial fulfilment of the requirements for the award of degree of

Bachelor of Engineering

In

ELECTRICAL AND ELECTRONICS ENGINEERING

Submitted by

K.A MUSKAN

3BR23EE036

Internship Carried Out
By
EZ TRAININGS & TECHNOLOGIES PVT.LTD
HYDERABAD

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DEPARTMENT OF ELECTRICAL ELECTRONICS ENGINEERING

CERTIFICATE

This is to certify that the Internship entitled " PARKING MANAGEMENT SYSTEM FOR THEATRES IN POC " has been successfully completed by K A MUSKAN, bearing USN 3BR23EE036, a bonafide student of Ballari Institute of Technology and Management, Ballari. For the partial fulfilment of the requirements for the Bachelor's Degree in Electrical and Electronics Engineering of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, Belagavi during the academic year 2023-2024.

Signature of Internship Co-ordinator

RANJITH KUMAR
Technical Trainer

Signature of HOD

SHARAN REDDY
Prof. and HOD(EEE)

DECLARATION

I, **K A MUSKAN,** second year student of Electrical and Electronics Engineering, Ballari Institute of Technology, Ballari, declare that Internship entitled **PARKING MANAGEMENT SYSTEM FOR THEATRES IN POC** is a part of Internship Training successfully carried out by **EZ TECHNOLOGIES & TRAININGS PVT.LTD ,Hyderabad** at "**BITM,BALLARI".** This report is submitted in partial fulfilment of the requirements for the award of the degree, Bachelor of Engineering in Electrical and Electronics Engineering of the Visvesvaraya Technological University, Belagavi.

Date : 28-09-2024
Place : Ballari

Signature of the Student

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Summary:

A parking management system is any technology designed to address challenges within the parking industry. Over time, the task park management has shifted from a hardware-centric approach to a more digital focus.

Key features of an effective Parking Management System include payment digitization, parking enforcement, access controls, and comprehensive reporting.

The cost of implementing a parking management System is relatively low, offering significant benefits over traditional options. In short, It's a system that helps people, companies, and organizations to manage their parking spaces.

What is a Parking Management System?

A parking management system refers to a suite of digital and automated technologies that simplify the management of parking spaces. These systems assist individuals, companies, and organizations in managing their parking facilities. Given the challenges involved in managing car parks—such as controlling traffic flow and optimizing space availability—traditional methods often fall short. A well-implemented Parking Management System can reduce administrative overhead, enhance operational efficiency, and minimize the negative impact of parking on the surrounding community.

Components of a Car Park Management System

A robust Parking Management System typically includes the following key components:

1. Payment Method

The system should support multiple payment methods tailored to different use cases. For instance, payments in staff parking may be processed digitally for convenience, while commercial parking might offer both manual and digital options. By facilitating various payment methods, a Parking Management System ensures smooth and efficient operations.

2. Parking Enforcement Options

Effective enforcement is crucial for maintaining order and maximizing the use of parking spaces. A Parking Management System may include ticket issuance, space allocation, and real-time availability notifications. These features not only improve traffic flow but also encourage the use of alternative transport methods when parking spots are limited.

3. Access Controls

Access controls, or car park entry systems, are essential for managing entry based on pre-booked spots. By integrating access control with booking confirmations, a Parking Management System minimizes unauthorized access and reduces congestion at entry points.

4. Reporting

Comprehensive reporting features allow parking managers to monitor parking facility usage in real-time, track vehicle entries, and manage parking availability. A centralized dashboard within the Parking Management System provides insights that drive better decision-making and operational efficiency.

1. Objectives

- Efficiently manage parking space.
- Provide real-time information to users.
- Streamline ticketing and payment processes.
- Enhance user experience for theatre-goers.

2. Key Features

- **Real-Time Availability**: Display current parking space availability.
- **Reservation System**: Allow users to reserve spots in advance.
- **Payment Integration**: Facilitate online payments through various methods (credit card, mobile wallets).
- **User Notifications**: Send alerts for booking confirmations, reminders, and parking expiration.
- **Admin Dashboard**: Provide theatre management with insights on usage patterns, peak times, and revenue.
- **User Interface**: Develop a mobile-friendly website or app for easy access.

3. Technology Stack

- **Frontend**: React or Angular for web application, Flutter for mobile app.
- **Backend**: Node.js or Python (Django/Flask) for server-side logic.
- **Database**: PostgreSQL or MongoDB for storing user data and bookings.
- **APIs**: Payment gateway API (like Stripe or PayPal), mapping API (like Google Maps).
- **Hosting**: AWS, Heroku, or Digital Ocean.

4. Implementation Steps

- **Requirement Gathering**: Consult with stakeholders (theatre managers, users) to finalize features.
- **Design Prototyping**: Create wireframes for the user interface.
- **Development**:
    - Build the frontend and backend systems.

    - Integrate APIs for payment and mapping.
- **Testing**: Conduct user testing to identify any usability issues.
- **Feedback Loop**: Gather feedback and iterate on the design and functionality.

5. Testing & Evaluation

- **Pilot Program**: Run a pilot at a selected theatre to evaluate performance.
- **Metrics**: Track user satisfaction, occupancy rates, and payment processing times.
- **Adjustments**: Make necessary adjustments based on feedback and performance data.

6. Future Enhancements

- **Dynamic Pricing**: Implement pricing models based on demand.
- **Loyalty Programs**: Introduce rewards for frequent users.
- **Integration with Theatre Events**: Sync parking availability with show schedules.

7. Deployment

- Launch the system for broader use after successful pilot testing.
- Promote the system through theatre marketing channels.

By following these steps, you can develop a robust parking management system tailored to the needs of theatres, enhancing the overall experience for visitors. Would you like to dive deeper into any specific section?