



Vehicle Parking Management System

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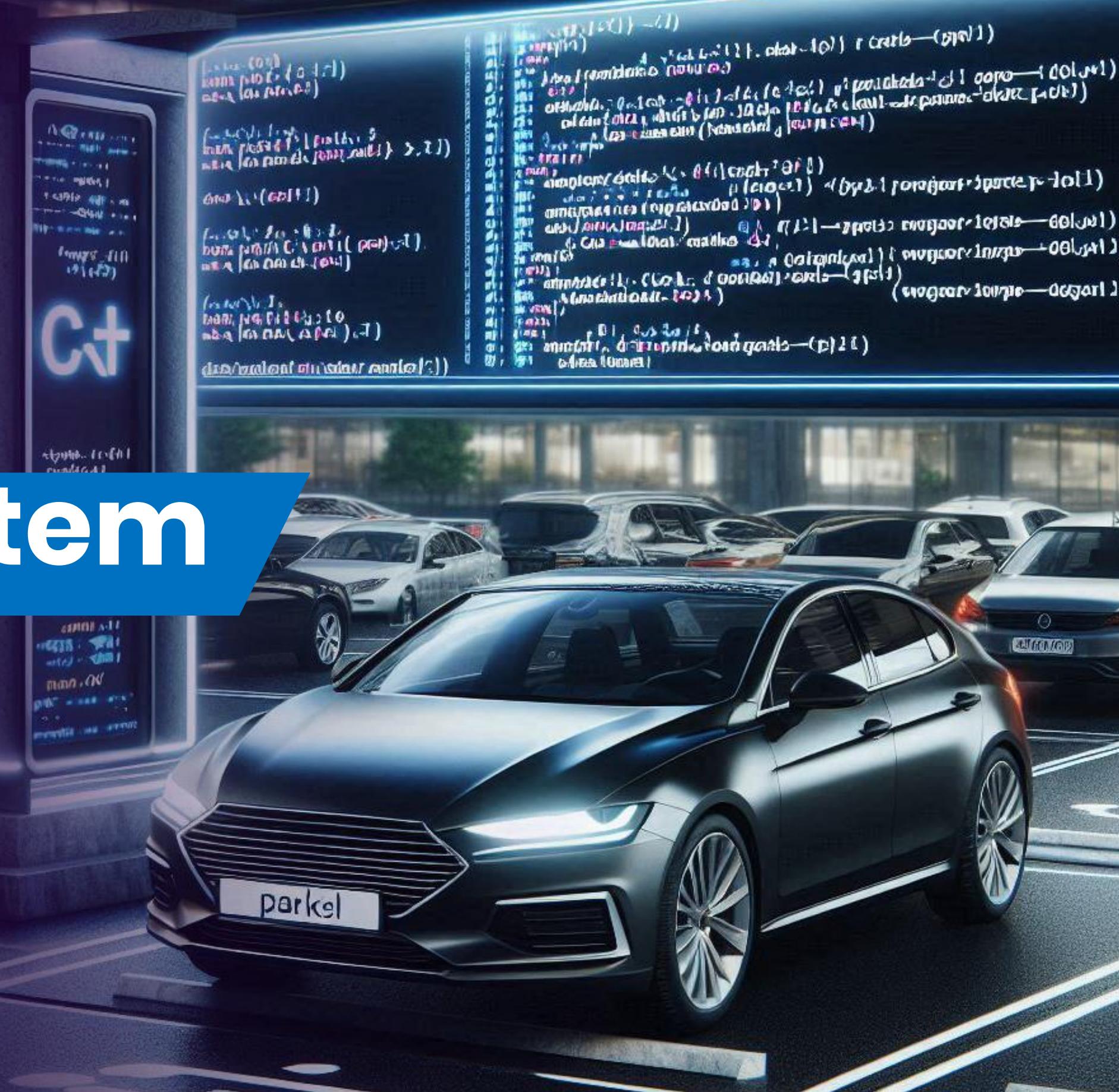




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Introduction

The proposed **Vehicle Parking Management System** aims to enhance efficiency by using technologies like Visual Studio, C#, and SQL to provide real-time parking availability

```
public void VehiclePark(ZoneCode zoneCode, string vehicleType, string licensePlate, string entryTime, string exitTime, string paymentMethod, decimal amountPaid, decimal amountRefunded, string remarks)
{
    var vehicle = new Vehicle()
    {
        ZoneCode = zoneCode,
        VehicleType = vehicleType,
        LicensePlate = licensePlate,
        EntryTime = entryTime,
        ExitTime = exitTime,
        PaymentMethod = paymentMethod,
        AmountPaid = amountPaid,
        AmountRefunded = amountRefunded,
        Remarks = remarks
    };
    _context.Vehicles.Add(vehicle);
    _context.SaveChanges();
}
```





Problem in Brief

Managing parking spaces for staff vehicles has become an increasing challenge due to the limited number of slots and a large number of employees. Without an efficient system in place, confusion and delays are common, as staff often struggle to locate available parking spots. The lack of real-time information at the entrance further complicates the issue, leading to congestion and frustration. To address these problems, an automated Vehicle Parking Management System is being developed. This system will enable staff members to view available parking spaces upon arrival, ensuring smoother access and more efficient use of parking resources.



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Project Objectives

AIM

To design and develop a Vehicle Parking Management System for company headquarters using Visual Studio, C#, and an SQL database, enabling staff members to efficiently identify available parking spaces in real-time.

OBJECTIVES

- Develop a User-Friendly Interface.
- Real-time monitoring of parking space availability, updating the status as vehicles enter or leave the parking area.
- Design a database to store and manage parking spot information, staff vehicle data, and parking availability, ensuring quick access and reliable data storage.
- Conduct thorough testing to ensure the system operates smoothly under various conditions, followed by a structured deployment.
- Reducing the time spent searching for parking.





Requirements

Non Functional Requirements

Scalability

Security

Performance

Reliability

Usability

Maintainability

Efficiency

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Functional Requirements

Parking Spot Registration and Allocation

Real-time Parking Availability

Vehicle Registration

Profile Registration

Entries Management

Exit Management

System Reset

Reporting and Analytics





Solutions

Challenges

Inefficiency in Parking Management

Lack of Real-Time Information

Limited Data Management and Reporting

Security Risks

Increased Environmental Impact



Proposed Solutions

Real-Time Parking Availability Monitoring

Automated Parking Spot Allocation

Vehicle Registration and Access Control

Centralized Database Management

Notifications and Alerts

User-Friendly Interface

Reporting and Analytics

Similar Systems



Automated Parking Management System for University Campuses

Shopping Mall Parking System

Corporate Office Parking System

Airport Parking Management System



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Future Developments



Mobile Application Development

Automated License Plate Recognition

QR Code Registered System

3D and VR Parking Maps

CCTV Monitoring



VPMS - VEHICLE PARKING MANAGEMENT SYSTEM

THANK
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