**Internet Of Things**

**IBM Naan Mudhalvan Phase - 4**

**Project Title : SMART PARKING**

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**Smart Parking System Overview**

The Smart Parking System aims to address the challenges of parking congestion and inefficient parking management by utilizing advanced technologies to optimize parking availability and improve the overall parking experience. The system will encompass various components, including:

**Real-time Parking Availability:** Sensors embedded in parking spaces will provide real-time data on occupancy status, allowing drivers to locate available spots easily.

**Smart Parking Guidance:** Dynamic signage and mobile applications will guide drivers to available parking spaces, reducing time spent searching and minimizing traffic congestion.

**Seamless Payment Integration:** Drivers can conveniently pay for parking using various payment methods, including mobile applications, credit cards, and contactless payment systems.

**Data-driven Parking Management:** Comprehensive data analytics will provide insights into parking patterns, occupancy trends, and revenue generation, enabling informed decisions for parking optimization.

**Platform Development**

The Smart Parking System will be built on a robust and scalable platform that can handle the real-time data processing, user interactions, and payment transactions. The platform will utilize cloud computing infrastructure to ensure high availability, performance, and security.

**Web Development Technologies**

The system’s user interface will be developed using modern web development technologies, including:

**HTML5 and CSS3:** For creating responsive and visually appealing web pages.

**JavaScript:** For handling dynamic interactions and user input.

**JavaScript Frameworks:** Such as React or Angular, to provide a structured and maintainable codebase.

**APIs:** For integrating with third-party services, such as payment gateways and mapping services.

Source Code Examples

Here’s an example of how to detect parking space occupancy using JavaScript and HTML:

HTML

<div id=”parking-space”></div>

<script>

Const parkingSpace = document.getElementById(‘parking-space’);

Function updateParkingStatus(occupied) {

If (occupied) {

parkingSpace.classList.add(‘occupied’);

parkingSpace.textContent = ‘Occupied’;

} else {

parkingSpace.classList.remove(‘occupied’);

parkingSpace.textContent = ‘Available’;

}

}

// Simulate parking space occupancy change

updateParkingStatus(true); // Occupied

setTimeout(() => updateParkingStatus(false), 5000); // Available after 5 seconds

</script>

This example demonstrates a basic concept of updating the parking space status based on real-time data from sensors or other sources.

**Conclusion**

The Smart Parking System represents a significant step towards enhancing parking efficiency and improving the overall parking experience for drivers. By leveraging advanced technologies and web development expertise, the system will optimize parking availability, reduce congestion, and provide a seamless and convenient parking experience for users.

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