# SMART PARKING SYSTEM PHASE 4

IoT Smart Parking project, it can enhance the functionality and user experience by incorporating web development technologies. Here's how can integrate web technologies into various aspects of the project:

**WEB BASED DASHBOARD ADMINISTRATOR:**

Create a web-based dashboard for administrators to monitor and manage the parking system. This dashboard should provide real-time information about parking spot occupancy, reservations, and transaction history. Use web development technologies like HTML, CSS, and JavaScript, and consider using a web framework for efficiency

**MOBILE APP :**

Develop a mobile app to reserve parking spots, make payments, and receive notifications. Use cross-platform mobile app development frameworks like React Native or Flutter to streamline app development for both Android and iOS.

**ONLINE RESERVATION SYSTEM:**

Implement a web-based reservation system for students to check parking spot availability and make reservations. This system can be integrated with the mobile app and can be developed using standard web technologies.

**PAYMENT GATEWAY INTEGRATION:**

If you include a payment system, you'll need to integrate a payment gateway into your web app for processing payments. Popular payment gateways often provide API s for this purpose. Here's a simplified example using Python and Flask

**REAL TIME UPDATES:**

Use web development technologies to ensure real-time updates on parking spot availability, reservation confirmation, and payment status. You can achieve this with technologies like Web Socket for real-time communication between the server and clients.

**USER AUTHENTICATION AND MANAGEMENT:**

For user authentication and management, you can create user registration and login systems within the mobile app and web interface. Use web development technologies for user interfaces and back end logic.

**DATA ANALYTING AND REPORTING:**

Utilize web technologies to create data analytic and reporting features for administrators. You can use JavaScript libraries for data visualization and reporting tools.

**MOBILE APP DEVOLOPEMENT:**

To connect your IOT Smart Parking System with a mobile app, need to create API s that allow the mobile app to interact with the back end system. Here's a stepby-step guide on how to achieve this.

**1.DEVOLOPE BACKEND APIS:**

➢ Create a set of API endpoints on your server to handle various

Functionalists of the Smart Parking System, such as user

authentication, parking spot availability, reservations, and

payments. You can use a web framework like Express.

**2.USER AUTHENTICATION:**

➢ Allow users to register and log in to the mobile app.

➢ Create API endpoints for user registration and login.

➢ Implement token-based authentication for secure access to the app.