To develop a parking management system, you need to define the requirements and functionalities of the system. Here are some essential requirements to consider for a basic parking management system:

1. **User Roles:**
   * Admin: Manage parking slots, view reports, and control system settings.
   * Attendant: Issue parking tickets, handle check-ins and check-outs.
   * Customer: Park vehicles and pay for parking.
2. **Parking Slots Management:**
   * Allocate different types of parking slots (e.g., regular, handicapped, reserved, etc.).
   * Track the availability of parking slots and display the status to customers.
3. **Vehicle Entry and Exit:**
   * Allow vehicle check-in at entry gates.
   * Record the entry timestamp and issue a parking ticket.
   * Allow vehicle check-out at exit gates.
   * Calculate the parking duration and charges based on the parking ticket details.
4. **Parking Fees and Payment:**
   * Define parking rates based on vehicle type, duration, and any special offers.
   * Support various payment methods (cash, credit card, mobile payments, etc.).
   * Generate and issue receipts for successful payments.
5. **Parking Reservations (Optional):**
   * Allow customers to reserve parking slots in advance.
   * Provide a booking system with a time-based reservation.
6. **Security and Monitoring:**
   * Implement CCTV surveillance for security and monitoring purposes.
   * Generate alerts for suspicious or unauthorized activities.
7. **Reporting and Analytics:**
   * Generate reports on daily/weekly/monthly parking revenues.
   * Analyze data to optimize parking capacity and operations.
8. **User Authentication and Access Control:**
   * Implement secure authentication for admin, attendant, and customer login.
   * Control access to different system functionalities based on user roles.
9. **Notifications and Alerts:**
   * Send notifications to customers for parking ticket expiration or reserved slots.
   * Send alerts to admins or attendants for system events (e.g., full parking lot).
10. **System Settings and Configuration:**

* Allow the admin to configure parking rates, system parameters, and rules.

1. **User-Friendly Interface:**

* Develop a user-friendly interface for customers, attendants, and admins.
* Provide clear instructions and help sections.

1. **Database Management:**

* Store and manage parking ticket data, user information, and transaction records.
* Implement a robust database design for efficient data retrieval.

These are just some fundamental requirements for a parking management system. Depending on your specific use case and the scale of the project, additional features and complexities may be required.

Before you start the development process, it is crucial to conduct a thorough analysis and gather detailed requirements from stakeholders to ensure that the system meets their needs and expectations.

1. **User Table:**
   * id (Primary Key)
   * username
   * password (hashed and salted)
   * role (admin, attendant, customer)
2. **Vehicle Table:**
   * id (Primary Key)
   * license\_plate (or registration\_number)
   * vehicle\_type (e.g., car, motorcycle)
   * user\_id (Foreign Key to User Table)
3. **ParkingSlot Table:**
   * id (Primary Key)
   * slot\_number (e.g., A1, B2, etc.)
   * slot\_type (e.g., regular, handicapped, reserved)
4. **ParkingTicket Table:**
   * id (Primary Key)
   * vehicle\_id (Foreign Key to Vehicle Table)
   * entry\_time
   * exit\_time
   * status (active, expired, paid)
   * payment\_amount