

★ **Domain Name :**

***“ Vehicle Parking System “***

★ **Entities:**

- **Vehicle**
- **Parking Spot**
- **Owner**
- **Parking Ticket**
- **Parking Lot**
- **Manager**
- **Payment**
- **Security Guard**
- **Supervisor**
- **Maintenance Request**

★ **Attributes and Data Types:**

- **Vehicle**
  - VehicleID (Integer): Unique identifier for each vehicle.
  - LicensePlate (String): Vehicle's license plate number.
  - Make (String): Vehicle's make (e.g., Toyota, Ford).
  - Model (String): Vehicle's model.
  - Color (String): Vehicle's color.
  - VehicleType (String): Type of vehicle (e.g., car, motorcycle, truck).
  - OwnerID (Integer): Unique identifier for the owner.
  - RegistrationDate (Date): Date the vehicle was registered.
  - InsuranceNumber (String): Insurance number of the vehicle.
  - ParkingSpotID (Integer): ID of the assigned parking spot.
- **Parking Spot**
  - ParkingSpotID (Integer): Unique identifier for each parking spot.
  - SpotNumber (String): Number assigned to the parking spot.
  - Floor (Integer): Floor on which the parking spot is located.
  - Section (String): Section of the parking spot (e.g., A, B).
  - Size (String): Size of the parking spot (e.g., compact, standard, large).

- Availability (Boolean): Whether the spot is available or not.
  - Reserved (Boolean): Whether the spot is reserved or not.
  - VehicleType (String): Type of vehicle the spot is suited for.
  - EntryTime (Time): Time of vehicle entry.
  - ExitTime (Time): Time of vehicle exit.
- **Owner**
    - OwnerID (Integer): Unique identifier for each owner.
    - FirstName (String): Owner's first name.
    - LastName (String): Owner's last name.
    - Phone (String): Owner's phone number.
    - Email (String): Owner's email address.
    - Address (String): Owner's residential address.
    - LicenseNumber (String): Driver's license number.
    - VehicleID (Integer): ID of the vehicle owned.
    - MembershipStatus (String): Membership status (e.g., regular, VIP).
    - RegistrationDate (Date): Date the owner was registered.
- **Parking Ticket**
    - TicketID (Integer): Unique identifier for each parking ticket.
    - VehicleID (Integer): ID of the vehicle.
    - ParkingSpotID (Integer): ID of the parking spot.
    - EntryTime (DateTime): Date and time of entry.
    - ExitTime (DateTime): Date and time of exit.
    - Fee (Decimal): Parking fee.
    - PaymentStatus (String): Payment status (e.g., paid, unpaid).
    - IssuedBy (String): Person who issued the ticket.
    - TicketType (String): Type of ticket (e.g., hourly, daily).
    - Penalty (Decimal): Penalty fee if any.
- **Parking Lot**
    - ParkingLotID (Integer): Unique identifier for each parking lot.
    - Name (String): Name of the parking lot.
    - Location (String): Location of the parking lot.
    - Capacity (Integer): Total capacity of the parking lot.
    - Floors (Integer): Number of floors in the parking lot.

- OpenTime (Time): Opening time of the parking lot.
  - CloseTime (Time): Closing time of the parking lot.
  - SecurityLevel (String): Security level of the parking lot.
  - ContactNumber (String): Contact number for the parking lot.
  - ManagerID (Integer): ID of the parking lot manager.
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- **Manager**
    - ManagerID (Integer): Unique identifier for each manager.
    - FirstName (String): Manager's first name.
    - LastName (String): Manager's last name.
    - Phone (String): Manager's phone number.
    - Email (String): Manager's email address.
    - Address (String): Manager's residential address.
    - HireDate (Date): Date the manager was hired.
    - ParkingLotID (Integer): ID of the parking lot managed.
    - Salary (Decimal): Manager's salary.
    - Schedule (String): Work schedule of the manager.
    - Department (String): Department the manager belongs to.
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- **Payment**
    - PaymentID (Integer): Unique identifier for each payment.
    - TicketID (Integer): ID of the parking ticket.
    - Amount (Decimal): Amount paid.
    - PaymentMethod (String): Method of payment (e.g., cash, card).
    - PaymentDate (Date): Date of payment.
    - Status (String): Status of payment (e.g., completed, pending).
    - TransactionID (String): Unique identifier for the transaction.
    - PayerName (String): Name of the person making the payment.
    - ReceiptNumber (String): Receipt number.
    - PaymentReference (String): Reference for the payment.
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- **Security Guard**
    - GuardID (Integer): Unique identifier for each security guard.
    - FirstName (String): Guard's first name.
    - LastName (String): Guard's last name.
    - Phone (String): Guard's phone number.

- Email (String): Guard's email address.
  - Address (String): Guard's residential address.
  - HireDate (Date): Date the guard was hired.
  - Shift (String): Shift the guard works (e.g., day, night).
  - ParkingLotID (Integer): ID of the parking lot assigned.
  - Salary (Decimal): Guard's salary.
  - SupervisorID (Integer): ID of the guard's supervisor.
- **Supervisor**
    - SupervisorID (Integer): Unique identifier for each supervisor.
    - FirstName (String): Supervisor's first name.
    - LastName (String): Supervisor's last name.
    - Phone (String): Supervisor's phone number.
    - Email (String): Supervisor's email address.
    - Address (String): Supervisor's residential address.
    - HireDate (Date): Date the supervisor was hired.
    - Department (String): Department the supervisor belongs to.
    - Salary (Decimal): Supervisor's salary.
    - Schedule (String): Work schedule of the supervisor.
    - ParkingLotID (Integer): ID of the parking lot supervised.
- **Maintenance Request**
    - RequestID (Integer): Unique identifier for each maintenance request.
    - ParkingLotID (Integer): ID of the parking lot.
    - SpotNumber (String): Number of the parking spot needing maintenance.
    - IssueDescription (String): Description of the issue.
    - ReportedBy (String): Name of the person reporting the issue.
    - ReportedDate (Date): Date the issue was reported.
    - Status (String): Status of the request (e.g., pending, resolved).
    - Priority (String): Priority of the request (e.g., high, medium, low).
    - AssignedTo (String): Name of the person assigned to the request.
    - ResolutionDate (Date): Date the issue was resolved.

★ **E-R Diagram :**

