Checkpoint 1: Design and Specifications

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Synopsis:

Objective:
•Develop a web-based system for a car dealership.
•Enable users to input personal information and car details
(make, model, year, VIN, license plate).
•Securely store all data in a centralized database.

Features:
User Registration & Authentication:
•Secure sign-up and login processes.
•**Data Entry Forms:**
•Intuitive interfaces for entering personal and vehicle information.
•**Database Management:**
•Relational database design (e.g., MySQL) for efficient data storage and
retrieval.
•**Admin Dashboard:**
•Tools for staff to manage user and vehicle data.
•Reporting capabilities for analysis.
•**Security Measures:**
•Data encryption and secure authentication protocols.
•Compliance with data protection regulations (e.g., GDPR).

Benefits:
•**Operational Efficiency:**
•Streamlined data collection reduces errors and saves time.
•**Enhanced Customer Service:**
•Quick access to accurate information improves interactions.
•**Data Accessibility:**
•Centralized information aids in sales, service scheduling, and marketing.
•**Regulatory Compliance:**
•Protects sensitive information, building customer trust.

Technologies:
•**Frontend:** HTML5, CSS3, JavaScript for responsive design.
•**Backend:** PHP (e.g., Laravel framework) or ASP.NET.
•**Database:** MySQL or PostgreSQL for robust data management.
•**Security:** SSL encryption, input validation, secure user authentication.

Expected Outcomes:
•A functional system that enhances data management for the dealership.
•Improved customer satisfaction due to efficient service delivery.
•A foundation for future integrations (e.g., service reminders, marketing
campaigns).

Main Use Case
Use Case: Manage Vehicle and Customer Data
Actors:
- **Customer**: A user who can register, log in, and input their personal and vehicle information.
- **Admin**: A user with permissions to manage customer and vehicle data, generate reports, and perform administrative tasks.
Use Case Description:
The main use case, **Manage Vehicle and Customer Data**, involves two primary user roles: the customer and the admin.
- **Customer Actions**:
    - **Registration and Login**: Customers can create an account by providing their basic information, including name, contact details, and creating a password. After registration, they can log in securely.
    - **Add Vehicle Information**: Logged-in customers can enter details of their vehicles, including make, model, year, VIN, and license plate.
    - **Update Personal and Vehicle Details**: Customers can update their profile and vehicle information as needed.
- **Admin Actions**:
    - **User Management**: Admins have access to all customer profiles, with permissions to edit or delete profiles if necessary.
    - **Vehicle Management**: Admins can view, update, or delete vehicle records to keep the database accurate.
    - **Generate Reports**: Admins can create reports for sales, service schedules, or other metrics.
    - **Manage Security**: Admins ensure that all data storage and access comply with regulations like GDPR, ensuring sensitive data protection.
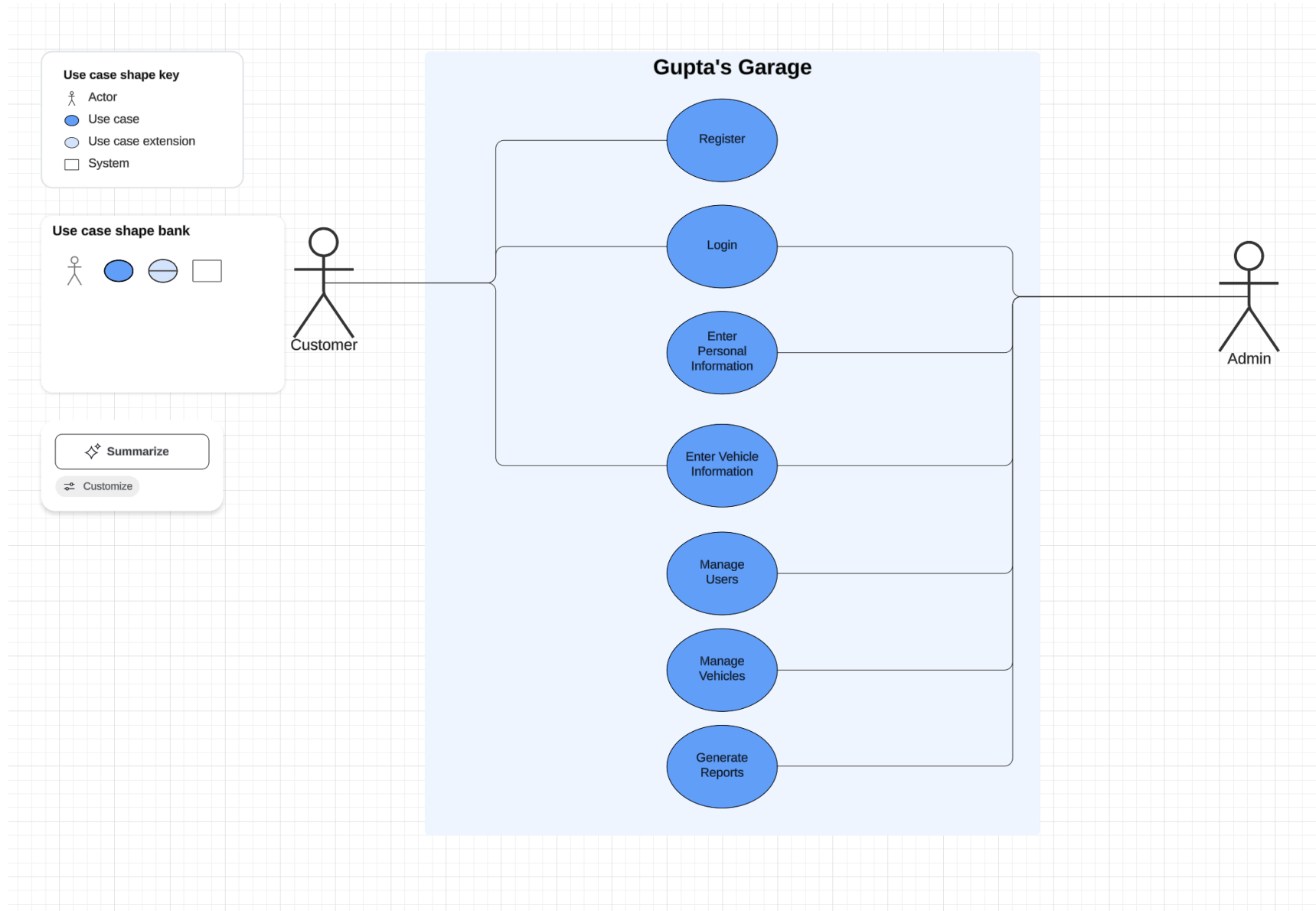   Main Success Scenario:
- A customer registers on the website and logs in.
- The customer inputs their vehicle details using the provided form.
- The data is stored securely in the database, accessible only to authorized users.
- An admin logs in, accesses the dashboard, and views a summary of all customer and vehicle data.
- The admin generates a report based on recent entries, providing insights for dealership operations.
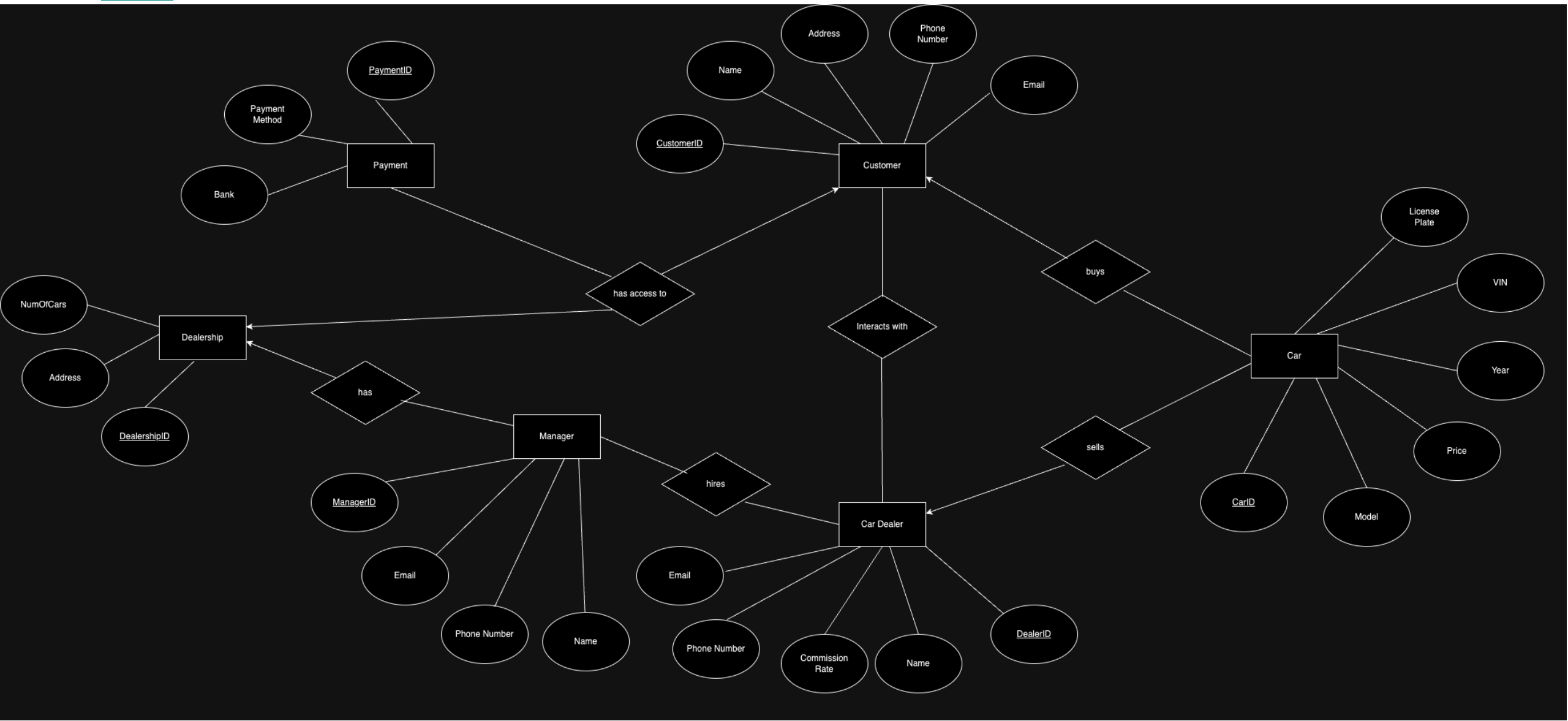Alternate Scenarios:
- **User Registration Fails**: If the user provides invalid input or a duplicate email, the registration fails, and an error message is shown.
- **Admin Report Failure**: If there is insufficient data or a database error during report generation, the system alerts the admin with troubleshooting options.

UML Use Case Diagram:

Use case shape key
- ☥ Actor
- 🔵 Use case
- 🔵 Use case extension
- ☐ System

Use case shape bank
☥ 🔵 🔵 ☐

✨ Summarize

⇄ Customize

Customer

Admin

Gupta's Garage

- Register
- Login
- Enter Personal Information
- Enter Vehicle Information
- Manage Users
- Manage Vehicles
- Generate Reports

ER DIAGRAM
Draw

Relational Schema

Customer(<u>CustomerID</u>, Name, Address, Phone, Email, <u>CarID</u>, <u>PaymentID</u>)
Interacts with(<u>CustomerID</u>, <u>DealerID</u>)
Car Dealer(<u>DealerID</u>, Email, Phone, Commission Rate, Name, <u>CarID</u>)
Car(<u>CarID</u>, Model, Price, Year, VIN, License Plate, <u>CustomerID</u>, <u>DealerID</u>)
Hires(<u>DealerID</u>, <u>ManagerID</u>)
Manager(ManagerID, Email, Name, Phone, <u>DealershipID</u>)
Dealership(<u>DealershipID</u>, NumofCars, Address, <u>PaymentID</u>, <u>ManagerID</u>)
Payment(<u>PaymentID</u>, Payment Method, Bank, <u>DealershipID</u>, <u>CustomerID</u>)