# CS 255 System Design Document

## UML Diagrams

### UML Use Case Diagram

A diagram of a software system

AI-generated content may be incorrect.

### UML Activity Diagrams

A diagram of a computer program

AI-generated content may be incorrect.

### UML Sequence Diagram

A diagram of a diagram

AI-generated content may be incorrect.

### UML Class Diagram

A computer screen shot of a computer

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## Technical Requirements

The DriverPass system requires specific hardware, software, security, and infrastructure components to ensure reliability, efficiency, and security for both administrators and customers.

**Hardware Requirements**

The system should be accessible on modern devices, including desktops, laptops, tablets, and mobile phones. Users should have a minimum of Windows 10 or the latest iOS version to ensure compatibility with the web-based interface. Server infrastructure should include cloud-based hosting with scalable storage to support growing user demand. A high-speed internet connection is recommended for seamless operation.

**Software Requirements**

DriverPass will be a web-based application, requiring a modern browser such as Google Chrome, Mozilla Firefox, Safari, or Microsoft Edge. The backend will be built using a secure and scalable programming framework, such as Node.js or Python with Django, while the frontend will utilize React or Angular for an intuitive user experience. A relational database (MySQL or PostgreSQL) will store customer data, while API integrations will connect with external services like payment gateways.

**Security Requirements**

Since DriverPass handles sensitive customer data and payment information, robust security measures are essential:

* Two-factor authentication (2FA) for user login.
* End-to-end encryption (SSL/TLS) for secure transactions.
* Regular cloud backups to prevent data loss.
* Role-based access control (RBAC) to restrict administrative privileges.
* Automated monitoring to detect suspicious activities and prevent cyber threats.

**Infrastructure & Maintenance**

The system will require continuous updates and technical support. A dedicated backend team should manage server uptime, database integrity, and system security patches. Regular performance testing will ensure system stability as the user base grows. Cloud hosting solutions like AWS, Azure, or Google Cloud will provide scalable infrastructure to meet demand fluctuations. While the UML diagrams focus on functional system components, these technical requirements ensure that DriverPass remains secure, reliable, and scalable, allowing for smooth operations and a seamless user experience.