# CS 255 System Design

## UML Diagrams

### UML Use Case Diagram

*A diagram of a company

Description automatically generated*

### UML Activity Diagrams

A diagram of a flowchart

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### UML Sequence Diagram

*A diagram of a diagram

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### UML Class Diagram

A screenshot of a computer

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## Technical Requirements

**Hardware Requirements**

* Cloud-based server infrastructure for hosting the system.
* User devices including smartphones, tablets, and desktop computers.

**Software Requirements**

* Web-based platform using modern frameworks (e.g., React for frontend, Node.js for backend).
* Secure database system (e.g., MySQL) for managing user and lesson data.

**Tools**

* CASE tools like Lucidchart for creating and managing UML diagrams.
* Development IDEs such as Visual Studio Code for coding the system.

**Infrastructure**

* Cloud hosting provider, offering scalable storage and processing capabilities.
* SSL encryption for secure data transmission.

**Security**

* Role-based access control to ensure users only access functionalities relevant to their roles.
* Passwords stored with salted hashes for enhanced security.
* Lock accounts after three failed login attempts to prevent brute force attacks.
* Multi-factor authentication for password recovery and sensitive actions.
* Activity logging for tracking user actions such as scheduling and canceling lessons.

**System Limitations**

* Requires stable internet connectivity for full functionality.
* Limited ability for non-technical staff to customize driving packages.
* Dependency on cloud hosting may introduce downtime during service outages.