# CS 255 System Design Document Template

James Stoldt (SNHU ID: 2528505)

CS-255 Project Two

Instructor: Matt McCann

## UML Diagrams

### UML Use Case Diagram

*A diagram of a driver pass system

Description automatically generated*

### UML Activity Diagrams

*A diagram of a process

Description automatically generated*

Figure 1 - Customer Appointment Scheduling

A diagram of a test

Description automatically generated

Figure 2 - Driver Note Submission and Customer Notification

### UML Class Diagram

*A diagram of a computer program

Description automatically generated with medium confidence*

## Technical Requirements

### Nonfunctional Requirements

#### **Performance Requirements**

* The system should be a cloud system, should be accessible across all devices/platforms
* Real-time data processing
* As minimal latency as possible, to reserve/cancel requests

#### **Platform Constraints**

* Must be a cross platform application, accessible via a web client that works on desktop and mobile
* Backend support through a scalable cloud DB solution for data storage, management, etc.

#### **Accuracy and Precision**

* User roles/rights must be distinct to prevent unauthorized data access/modifications
* Data validation for all user inputs
* System alerts for administrators on unusual activities or data inconsistency

#### **Adaptability**

*Can you make changes to the user (add/remove/modify) without changing code? How will the system adapt to platform updates? What type of access does the IT admin need?*

* The ability to update user roles and permissions easily by DriverPass employees that have permission
* System updates and maintenance should not disrupt operations (to the extent that is realistically possible)

#### **Security**

*What is required for the user to log in? How can you secure the connection or the data exchange between the client and the server? What should happen to the account if there is a “brute force” hacking attempt? What happens if the user forgets their password?*

* MFA for users and admins
* End-to-end encrypted data transfer
* Secure storage for customer information

### Functional Requirements

* The system shall allow users to schedule/modify/cancel their lessons online
* The system shall provide different access rights and functions for admins, instructors, and students
* The system shall offer customizable driving lesson packages and let DriverPass update/disable these packages as needed
* The system shall automatically reset user passwords upon request to comply with security requirements
* The system shall maintain a detailed record of user activities, including reservations/cancellations/modifications, to comply with auditing requirements

### User Interface

* Intuitive user-friendly interface for different user roles (admin, instructors, users)
* Responsive design for accessibility on both desktop and mobile devices
* Secure and quick processing of payment information

### Assumptions

* Users will need to have basic technical ability to get online and use the client
* Users will need to have a reliable and consistent internet connection in order to access the client reliably

### Limitations

* Dependency on third-party services for hosting, cloud services, payment processing
* Users are always the most difficult part of a system to work with, they may be resistant to learning a new tool or environment (they usually are)