# 1CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The client for this project is a company called DriverPass, owned by Liam.
* The purpose of this project is to create a system that offers driver training in the form of online classes, practice tests, and on-the-road training.
* The client requests a system that is easily accessible both online and offline and can be managed by different employees with different roles and rights.
* The client wants the system to be able to handle training reservations, keep track of what drivers are assigned to which customers, and report the activities during each session in the event that something must be reviewed retrospectively.

### System Background

* DriverPass wishes to utilize this system in order to target a significant problem they have identified: a high failure rate among those taking DMV driving tests.
* The client’s goal is to fill the void in the market for driving test training by offering tailored test preparation, such as online classes, practice tests, and on-the-road training.
* The necessary components for this system include a clean user interface, role-based access control, a reservation tracking module, an activity reporting module, and a cloud-based infrastructure.

### Objectives and Goals

* The system will provide the user with the following functions:
* Select from three different packages for driving training, including both hands-on training and in-person and online classes
* Schedule, modify, or cancel reservations for driving training or classes
* Take online practice tests
* Receive feedback about their performance on tests

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* **Environments:** This system needs to operate via a web-based platform and must be accessible from desktop and mobile web browsers.
* **Speed:** The system should run fast enough that there is little to no latency in its responsiveness, particularly when creating a new account, logging in, or reserving a class.
* **Updates:** System updates should take place during off-peak hours and should occur at least once a week to ensure its functionalities are kept up-to-date without impeding the user.

#### Platform Constraints

* **Platforms:** The system should be platform-independent due to being web-based but optimized to run on the most popular computer and mobile operating systems, including Windows, MacOS, Linux, iOS, and Android, to ensure the highest level of compatibility with the greatest number of users.
* **Backend Tools:** The system requires both a database and server solution to manage user data, reservations, and driving package details on the server-side end. Microsoft SQL Server, a popular relational database management system, could be a good choice.

#### Accuracy and Precision

* **Distinguishing Users:** Individual users will be distinguished based on a unique username and associated email address that are entered when a new user is registered.
* **Case-Sensitivity:** Usernames and passwords for user accounts will both be case-sensitive for enhanced security.
* **Admin Notifications:** The system will alert administrators in the event of a security breach, a system error, or if a reservation conflict somehow occurs.

#### Adaptability

* **User Management:** Changes to the user, such as add, remove, and modify, will be able to be made without changing code through the use of instanced classes unique to individual users.
* **Platform Updates:** The system will be developed with modularity in mind so that updating one feature or functionality does not require reworking the entire system.
* **IT Admin Access:** Administrator accounts will be “superusers”, allowing them to manage content within the system, help users with technical issues, and monitor user activity.

#### Security

* **Login Requirements:** Users will have a unique username and case-sensitive password associated with their account.
* **Secure Data Exchange:** The connection between the client and server will be secured through the utilization of communication security protocols such as TLS (Transport Layer Security) or SSL (Secure Sockets Layer).
* **“Brute Force” Prevention:** The system will temporarily lock out users after three consecutive unsuccessful login attempts. Further unsuccessful attempts will result in a longer lockout.
* **Forgotten Password:** Users will be able to reset their password via a “Forgot Password” link. This link will send a secure email to the address associated with the account, which will allow the user to create a new password.

### Functional Requirements

* The system shall allow users to register an account with a unique username, case-sensitive password, and associated email address.
* The system shall display driving training packages that users can choose from.
* The system shall facilitate the online reservation of packages.
* The system shall allow users to change or cancel previously made reservations.
* The system shall provide updates to users on any DMV rule or law changes that may occur.

### User Interface

* **User Interface Needs:** The system’s user interface must be consistent, user-friendly, and intuitive. Any icons, buttons, or possible progress indicators must be clear and easy to understand.
* **User Types:** The different users for the interface include driving students, driving instructors, and system administrators.
* **Interaction:** The system’s user interface will be accessible via a web browser on computers and mobile devices.

### Assumptions

* All users will have an internet connection.
* All users will have access to either a computer or mobile device.
* All users will have basic tech knowledge to the extent that they can navigate a web-based interface.
* The DMV will provide an API for our system to access to ensure any rule or law changes are relayed to users.

### Limitations

* The system may not support older or legacy versions of browsers or operating systems.
* Updates to rules or laws are dependent on the responsiveness of the DMV’s system and API.
* The system will be limited to regions where the DMV has jurisdiction (i.e., the associated DMV's state).

### Gantt Chart

A screenshot of a project

Description automatically generated