# CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The client is DriverPass, a company that provides services for training students to pass their driving test at the DMV. They want their system to be able to allow themselves and their customers to create and modify training reservations. They also want the system to provide online classes and practice tests.

### System Background

* The client wants to solve the problem of students not having good enough training for their driving test.
* The system will need to support training packages that include on-the-road training, in-person lessons, online classes, and practice tests. The client should be able to disable packages they no longer want to offer.
* A reservation system needs to be implemented for students to book in-person or on-the-road training with an instructor.
* The system should log user actions such as users making or modifying a record.
* The client should be able to download information from the system in a form that can be viewed offline, such as in Excel.
* Different roles with different privileges need to be created so that company employees such as the IT admin or secretary can view user logs, reset passwords, and make or modify reservations, while students can only make and modify their own reservations.
* The client needs to receive notifications from the DMV when there are new rules or policies.
* The system needs to run off the web over the cloud. Backup and security should be taken care of automatically.

### Objectives and Goals

* The system will be able to offer students 3 different kinds of training packages that include online classes, practice tests, in-person lessons, and on-the-road training. The client will be able to disable packages they no longer want to offer.
* Students and staff can book or modify training reservations.
* System logs tracking user actions exist and can be downloaded and viewed offline.
* Company staff can download and view user logs, make or modify reservations, and reset passwords.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system is web-based and runs over the cloud. It can be accessed from any computer or mobile device.
* It should be able to fetch and update user information and instructor availability instantly. The system should be updated whenever a user or employee creates or edits a reservation.

#### Platform Constraints

* The system’s backend can run on any operating system that can host a database and serve the application to the web, which could be a Linux or Windows operating system.
* The back end will require a database to store user information and reservations.

#### Accuracy and Precision

* The system should distinguish between users based on what package they purchased. Package One users can only reserve six hours of training. Package Two can reserve eight hours and an in-person lesson. Package Three can reserve twelve hours, receive an in-person lesson, and receive access to an online class and practice test.
* The system should distinguish student users from staff members. Staff members have elevated privileges and also have different roles depending on their position. The IT admin can edit reservations for other users, view user logs, update passwords, and disable packages. A secretary can edit reservations for other users.
* Passwords and usernames should be case-sensitive. The user type is identified with their login credentials and roles are assigned to certain users. Basic security protections should be put in place like optional two-factor authentication, password recovery, and accounts being locked due to inactivity or having too many incorrect password attempts.
* The system should inform admin of a problem if a user runs into problems with their account. For example, an account getting locked, or a payment method repeatedly not going through.

#### Adaptability

* System admins like the IT admin should be able to make changes to users, like adding, removing, or modifying their privileges and roles, without changing code.
* Platform updates like changing packages and changing online class material due to new DMV policies are more complicated and would require a software developer. For now IT admins have the option to disable a package if they no longer wish to offer it.

#### Security

* Users are required to create a username and password to log in, with basic password rules such as passwords being at least 12 characters long, having at least 1 special character, 1 uppercase character, etc.
* Accounts should have basic protections like two-factor authentication, password recovery options, and accounts being locked due to too many incorrect login attempts or inactivity. If a user forgets their password they can reset the password with an emailed password reset link or by answering security questions. Accounts will be locked after 5 incorrect login attempts to prevent brute force hacking attempts and can be reactivated by the user requesting to reset their password using the password recovery options.
* The connection between the client and server is secured by using standard security protocols like HTTPS.

### Functional Requirements

* The system shall validate user credentials when logging in and provide the user access to the correct resources according to their role.
* The system shall provide the user access to online classes, practice tests, and a reservation system to book on-the-road training depending on the package purchased by the user.
* The system shall provide administrators and staff access to higher privileges like modifying reservations for other users, downloading user logs, disabling packages, and resetting passwords.
* The system shall show users feedback on their training such as online test progress and driver notes.
* The system shall show and allow users to edit account information such as their name, login credentials, address, payment information, and photo.

### User Interface

* The interface consists of a website that can be accessed from any computer or mobile device.
* The interface consists of a page containing a user’s account and personal information, online test progres, and driver notes. There is also an input form for a student or the secretary to fill in student information, a page to contact the company, and a way to contact the student.
* For an IT admin, the interface will need a page for account management, like changing account roles, disabling accounts, and updating passwords. They will also need options for managing the website, such as disabling packages that they no longer wish to offer, and a message box for receiving and responding to messages from users.
* For a secretary, the interface will allow them to create accounts and manage reservations for users.

### Assumptions

* The user has access to a functioning computer or mobile device to use the website.
* The user has access to electricity and internet.
* The server has access to the web and the cloud to be able to keep the database up to date with user accounts and reservations.

### Limitations

* The system will not work if wherever the server is hosted suffers an internet or power outage.
* More complicated updates to the system like updating class material or changing the packages that are offered require a software developer to be on staff.

### Gantt Chart

