# CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The project is for DriverPass, a company that offers driving lessons, classes, and practice tests. The project’s purpose is to provide better driving training to customers who are preparing for their driving tests. It should include online classes and practice tests, and it should enable customers to purchase lesson packages and schedule their on-the-road lessons. The system should also be flexible, allowing the owner to access data from anywhere, and it must be secure, implementing both software security measures and compliance with DMV standards.

### System Background

* The client requested a system that allows customers to take online classes and practice tests, purchase lesson packages, and schedule on-road lessons.
* They requested that the system allow company employees to access and modify customer data and scheduled lessons according to their authorization level within the company.
* It should manage reservations, track user activity, and provide access to relevant information.
* Different components needed for the system include user registration, online scheduling, driving package management, driver matching, data storage, and reporting functionalities.
* The system will consist of a website accessible by customers and company members, with some pages only authorized for company access, and a database storing data about customers and the services they purchase from DriverPass.
* It will be cloud-based, with built-in security and backup to minimize technical problems.

### Objectives and Goals

* Customers will be provided with the following functions:
  + Create accounts, providing first and last name, address, phone number, state of residence, credit card information, and pickup and drop-off location(s).
  + Purchase lesson packages.
  + Schedule, modify, and cancel lessons online.
  + Take online classes and practice tests.
  + View their test progress and feedback from their driving instructor(s).
* Company users will be provided with the following functions:
  + Create, review, modify, and cancel customers’ driving lessons (including the scheduled time, instructor, and car).
  + Receive DMV compliance updates with new rules, policies, and sample questions.
  + The secretary can schedule, modify, or cancel lessons on behalf of customers who call in by phone.
  + The owner (Liam) can print activity reports showing when scheduled lessons were created, modified, or canceled, and who made the changes.
  + The owner can disable and reenable purchases of specific driving lesson packages.
  + The owner can access and modify site data while online and download it for offline review.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system will run as a web-based application accessible from various devices.
* Response times should be up to par for any modern website (in other words, fast).
* The system should be updated regularly to remove any bugs found after deployment, to ensure security, and to retain compliance with DMV standards.

#### Platform Constraints

* The client application should be accessible through any modern internet browser, making it available on Windows, UNIX, and mobile platforms.
* The server should run from a serverless cloud platform (e.g. AWS).
* The back end, which must store and serve customer and schedule data, should be served by a reliable and scalable database.

#### Accuracy and Precision

* Different users will be distinguished by email address, which will be used as their login handle. Email addresses will be validated through a confirmation email sent at the time of account creation.
* Case sensitivity will be used in taking users’ passwords, names, and addresses. Addresses will be checked against an autofill database to ensure validity.
* Good error handling practices will be implemented so that error notifications provide the system admin with rich information about the nature of the problem.

#### Adaptability

* An admin interface will allow authorized company users to add, remove, or modify users without coding ability.
* The system should adapt to platform updates seamlessly since it will be largely platform-independent; it will be tested against platform updates to look for bugs and updated as needed.
* The IT Admin will have full authorization to manage user accounts.

#### Security

* A secure password will be required for account creation, and logging in will require user authentication and authorization.
* The client-server connection will be encrypted with SSL to ensure secure data exchange.
* Multiple failed attempts to log in to a single user account (which sometimes represent brute force hacking attempts) will result in temporary account suspension, with identity verification needed to reenable the account.
* The option for a user to reset their password will require identity verification.

### Functional Requirements

* The system shall enable user registration with personal details and payment information.
* The system shall serve an online storefront selling various lesson packages.
* The system shall allow customers to create, modify, and cancel driving lessons with selected instructors.
* The system shall serve online classes and practice tests for customers.
* The system shall display logged-in users’ online test progress and feedback notes from their driving instructor(s).
* The system shall enable customers to reset their password to retain account access.
* The system shall track user activity, including lesson reservations, modifications, and cancellations.
* The system shall enable the Owner to generate activity reports showing who has modified it, alongside the nature and date/time of the modifications.
* The system shall enable the Owner, IT Administrator, and Secretary to look up customer driving lessons by customer name or email, and to create, modify, and cancel customer driving lessons.
* The system shall enable the Owner to modify both customer and employee user accounts.
* The system shall enable the Owner to disable and reenable lesson packages in the online store.

### User Interface

* The users fall into three broad categories, with respect to UI functionality: customers, DriverPass Secretary, and Owner/IT Admin.
* The customer UI should follow Liam’s basic design, provided in the interview: a dashboard showing their personal information, test progress, and instructor notes.
* Customers must also be able to shop in the online lesson package store.
* The customers’ UI must give them the ability to see how many lessons remain in the package they’ve purchased, and to schedule/modify/cancel lessons. This should be displayed in a date-ordered list, with a drop-down calendar for selecting scheduling or rescheduling dates.
* The Owner and IT Admin must have a UI giving them the ability to modify all users’ accounts. This should list accounts in alphabetical order by name and provide the user radio button selection with a drop-down menu containing actions.
* The Owner, IT Admin, and Secretary must have the ability to view, create, and modify customers’ scheduled lessons through their UI. They should be able to navigate to this through the customer list, and this interface should be similar to customers’ lesson scheduling interface. (Note: this is the only UI requirement for the Secretary.)
* The Owner’s interface must give him the ability to disable or reenable select lesson packages in the online store. This may be implemented as an additional option on the store page when logged in as the Owner.
* The Owner’s UI must also include an option to create and save activity reports and to download system data.
* Finally, the Owner’s UI must provide updates from the DMV which he can implement to stay in compliance with their requirements and guidelines. This and the previous point may be implemented in a “dashboard” landing page for the owner’s user account.
* Being platform-independent, the application will be designed to accommodate both mouse-and-keyboard and touchscreen I/O. Customer and company UIs will need to take this platform independence into account in their design.

### Assumptions

* We assume that all users have access to modern internet browsers and devices that can run them.
* We assume that users are familiar with computer and internet interfaces and will not need basic instructions on how to operate, e.g., buttons or text fields.

### Limitations

* Our development team is limited in size, so we will need to work strategically to stay on schedule and within budget.
* DriverPass does not have an infinite budget, but budgetary limitation on the project has not come up in conversation. Nevertheless, we should remain aware that it may become a constraint along the way.

### Gantt Chart

