# CS 255 Business Requirements Document

## System Components and Design

### Purpose

*What is the purpose of this project? Who is the client and what do they want their system to be able to do?*

* DriverPass is seeking development for a web application that manages their schedule and driving students
* The goal of the application is to have an all-encompassing system for DriverPass’s online classes, practice tests, and on-the-road training

### System Background

*What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?*

* The application should be able to schedule students’ appointments, store their information, and record the results of their driving tests
* DriverPass wants this system to improve the rate of passing students
* Users will utilize a login system that has account creation with usernames and passwords
* Accounts will be given roles that restrict what actions they can perform
* Driving appointments can be made through the application and allows for 1 of 3 different packages
* Appointment details and action history are recorded and able to be printed
* Cloud computing will be utilized to host the web-based application

### Objectives and Goals

*What should this system be able to do when it is completed? What measurable tasks need to be included in the system design to achieve this?*

* Users can create and login to their accounts and reset their password
* Accounts store and display online test progress, personal information, special needs, driver and student photos and any driver notes
* Administrators can delete or block accounts
* DriverPass packages should be available to purchase
* Packages offered must be available, if they are not available that will be displayed to users
* Accounts can change or cancel their appointments
* The history of purchases, modifications to reservations, and who performed each action should be tracked and able to be printed
* Employees of DriverPass can manage their customers’ accounts for them to schedule, cancel, or modify their appointments
* Only employees or higher level roles should be able to see what the assigned driver, vehicle, and time is assigned to an appointment
* The drivers can add notes on the lesson time, start hour, end hour, and their comments

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

#### Performance Requirements

*What environments (web-based, application, etc.) does this system need to run in? How fast should the system run? How often should the system be updated?*

* The system will be run in a web-based environment hosted in the cloud
* The system should function with minimal latency
* The IT officer has control over update deployment
* Rules from the DMV should be automatically updated in the application

#### Platform Constraints

*What platforms (Windows, Unix, etc.) should the system run on? Does the back end require any tools, such as a database, to support this application?*

* All operating systems, including mobile ones like IOS and Android should be supported
* The DMV database should be connected to the backend to ensure that the application has the most up to date information

#### Accuracy and Precision

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

* The system requires a username and password, both being case-sensitive which will be set upon account creation
* When an account has failed to login a large number of times, the account will be locked and an admin will be contacted so that they can investigate

#### 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?*

* Customers and employees can change personal account information
* The IT officer will have access to all non-admin accounts with the ability to change an account’s role and information
* System updates will wait to be performed until DriverPass administrators decide it is needed
* Updates to information from the DMV will be performed automatically as soon as 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?*

* To log in an account needs to supply their username and password
* Customers can reset their password using their username which sends them an email with a code for verification
* After 3-5 attempts the system should block continued guesses at the password and require contact with an administrator to get access to the account again
* To secure the flow of information, HTTPS protocol will be used to encrypt information sent between the client and server

### Functional Requirements

*Using the information from the scenario, think about the different functions the system needs to provide. Each of your bullets should start with “The system shall . . .” For example, one functional requirement might be, “The system shall validate user credentials when logging in.”*

* The system shall have a home page with navigation to other pages
* The system shall have account creation, login, and password reset pages
* The system shall accept input and store user information including name, address, email, phone number, and payment information
* The system shall store information about a user’s completed courses, grades, and comments from instructors
* The system shall have a page dedicated to each user that displays relevant personal information
* The system shall track reservation information including when the reservation is modified which can be printed
* The system shall allow customers to conduct online practice tests
* The system shall be connected to the DMV to have the most up to date rules and requirements
* The system shall allow customers or employees to purchase course packages

### User Interface

*What are the needs of the interface? Who are the different users for this interface? What will each user need to be able to do through the interface? How will the user interact with the interface (mobile, browser, etc.)?*

* The user interface should display and allow for modification of personal account information
* The user interface should be simple and easy to understand
* Each account will have a role which will be one of the following: customer, employee, administrator, owner
* All users can sign in and register an account
* Customers can add their personal information and create reservations and modify their existing ones
* Employees can modify a customer’s account for them
* Administrators can oversee issues with a customer or employee’s account and potentially close the account or unlock it
* The owner has ultimate control and can remove any account’s functionality and do anything the other accounts can
* The user interface should adapt and look similar on different devices and have the same functions despite the different resolutions and input

### Assumptions

*What things were not specifically addressed in your design above? What assumptions are you making in your design about the users or the technology they have?*

* Users have a computer or mobile device
* Users have access to a stable internet connection
* Users have an email address to create an account
* The DMV has a system in place to allow for automated acquisition of their rules updates

### Limitations

*Any system you build will naturally have limitations. What limitations do you see in your system design? What limitations do you have as far as resources, time, budget, or technology?*

* The budget was not specified so that is unknown
* Short development time of 5 months
* Application must be web-based and be able to be hosted in a cloud environment

### Gantt Chart

