# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

The purpose of this system design is to provide a learning environment for prospective students ahead of taking their driving tests, DriverPass wants to fill this void in the market and help assist these students.

* Driver Pass wants to create a system that allows for better training of students before they take their driving test at the DMV.

### System Background

The background of the proposed system is provided to create an integrated online learning environment for the DMV driver’s test, this is to fix the current void for this type of a service and help assist with customers being able to pass the test.

* The system needs to be able to be accessed from anywhere, computer or mobile device, with some additional offline reports through Excel.
* Online classes with included practice tests that can be changed as the DMV provides updates to their exams will be available.
* There will be varying driving packages available, with differing time allotments and some additional in-person learning opportunities. The driving practice will identify the driver the customer is scheduled to go with, as well as the specific car they are to go with.
* There should be security for multiple types of users, including current user, new user, administrator, and instructor.
* The customer should be able to create, modify, and cancel reservations online or through calling our phone number and having their secretary perform the same actions.
* The ability to adjust packages currently being offered should be available, or at least the ability to disable a package if more customers should not be registering for it.
* The system should preferably run over the cloud, with backup and security being handled outside of DriverPass.

### Objectives and Goals

The objectives in a system analysis will provide a clear direction for what the system needs to be able to do for each user and the goals provide a distinct measurable goal to be able to declare that the objective is completed.

* Creation/adjustment of an account
  + Customer name, address, phone number, and payment details
* Ability to create/modify/cancel reservations.
  + Users should be able to do all of this on their own through the web application or by calling in and having the secretary do the same.
* Tracking of the changes in reservations.
  + Every change should be recorded and visible to the system.
* Differing packages that can be enabled/disabled as appropriate.
  + Students should be able to sign up for a package, and admin users should be able to disable or enable packages.
* Users should have the ability to recover/reset password on their own.
  + Users have the access to do so.
* Online learning system, providing information/teaching as well as practice tests and other materials.
  + Students should be able to access this material, and instructors should be able to include announcements, feedback, and additional materials as appropriate.
  + Should be able to be accessed through multiple operating systems and platforms (computer or mobile devices).
  + Students being able to take each available test and get instant feedback on answers, including right and wrong answers as well as detailed feedback for why their answers were wrong.
* System should provide a notification whenever the DMV provides an update to their material.
* Tracking reservations and completed lessons.
  + Show previous and future reservations the customer has, previous including any notes the instructor included.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* Web-based environment in the cloud.
* Load times should be responsive, within a few seconds.
* There should be an indication if load times are longer than 4 seconds.
* The system should be updated as needed or at a minimum of monthly.

#### Platform Constraints

* The system should be universally ran on computer and mobile browsers.
  + Support for Windows and Apple.
    - Google Chrome.
    - Internet Explorer/Edge.
    - Safari.
    - Firefox.
* Backend needs to include a database to store information.
  + Done outside of DriverPass.
* Backend will need to include a web server to handle responses.
  + Done outside of DriverPass.

#### Accuracy and Precision

* System will need to differentiate between each different user, through individual login information.
  + Individual unique usernames.
  + Case sensitive user passwords.
    - At least 8 characters.
    - Mixture of upper and lower case, numerals, and special characters.
  + System should inform admin of issues as they arise in addition to a daily report containing all active issues.

#### Adaptability

* User changes should be done through the back end.
* Users should be able to adjust personal information and passwords on their own.
* System should adjust to updates without issues.
  + Error handling should be present to avoid corruption.
  + Extensive quality assurance testing should be done before updates being rolled out.
  + Backups should be maintained through one or two versions.
* IT admin needs to be able to maintain and modify the system as well as any back-end management.

#### Security

* Users need a username and password to log in.
* Two factor authentication could be considered or some encryption.
* User should be timed out of trying after several incorrect attempts, 3-5.
* The user should be able to reset their password on their own.
  + Through email link or form with security questions.

### Functional Requirements

* The system shall validate the user’s username and password upon logging in.
* The system shall have specific permissions identifying if the user is a customer or admin.
* The system shall be accessible from any computer or mobile device.
* The system shall allow for removing and adding users as well as adjusting permissions.
* The system shall track changes to reservations.
* The system shall allow for the creation of a user with user information.
* The system shall allow for the user to pick specific driving packages.
* The system shall allow for an admin to add or remove packages.
* The system shall track the specifics of a reservation: Driver, start time, length, car being used, and pickup location.
* The system shall send a notification when the DMV provides updates.
* The system shall have accessible online classes.
* The system shall have tests that students can take and view progress on each individual test.
* The system shall allow for users to create, modify, or cancel their reservations on their own online or by calling in.
* The system shall be run over the cloud.
* The system shall allow for users to change their password on their own.
* The system shall allow for a set number of failed login attempts before locking them out.
* The system shall display a drivers notes for the student to view.

### User Interface

* Each user will interact with the user interface through mobile browsers or with internet explorers on a computer.
* The interface will need to accommodate different age ranges and backgrounds and thus should be intuitive to use.
* Different users include customers, teachers, and admins.
* Customers should be able to interact with and have access to:
  + Login/registration page.
  + Password reset button/link.
  + Home launch page.
  + Package information/purchase.
  + User profile with information with the ability to adjust/update.
  + Company contact information page.
  + Test progress and scores.
  + Driving registration page
    - Create, modify, cancel reservation.
    - Current reservation status with dates, times, and instructor.
  + Access to online learning information and tools.
* Admins should be able to interact with and have access to:
  + Ability to add or remove packages.
  + Access to students who have registered to what.
  + Access to current reservations.
  + Access to view report containing reservation changes.
  + View current schedule of appointments and adjust where necessary.
  + Ability to help customers change/recover their password.
  + Ability to make changes/additions to classes and tests.
  + Receive a notification when the DMV makes changes to their information.
* The user will interact with the interface on mobile devices through touch controls with a keyboard interface popping up after selecting a field allowing for text responses.
* The user will interact with the interface on computer devices through a mouse/touchpad and keyboard, allowing for point and click actions and entering of text after clicking in a text box. When in use, touch screen devices should also be supported within the computer devices, though should function similarly as a traditional mouse and keyboard.

### Assumptions

* All users understand how to navigate a webpage.
* All users have a consistent stable internet connection.
* There will always be drivers available.
* Driving tests will continue being how a person attains a driver’s license.
* Customers will have valid payment types and show up for reservations they make.
* Customers/drivers will be located close enough to each other to access/provide each service.
* Vehicles will work without issue for each driving practice.
* The number of customers will not out-scale that of the web application or server.
* Code will be maintained separate from the company or will not need to be maintained.

### Limitations

* There are only so many reservations that can occur near the same time with only having 10 vehicles available.
* Each vehicle will need to be maintained consistently.
* Reservations will need to be location locked as there is only a certain distance that instructors are able to travel.
* Customers may not have a stable internet connection.
* Customers may not have a reliable device to access content they purchase or want to access.
* Meeting each of the requirements presented by DriverPass while keeping in their budget and time frame.
* We do not have an in-house dedicated quality assurance testing, potentially leading to an increased time to properly test the application.

### Gantt Chart

*A screenshot of a computer screen

Description automatically generated*