# 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?*

* Our client, DriverPass, would like our consulting company to design a system that will provide education for student drivers and better prepare them for DMV driving exams. The system we will develop for DriverPass will help students by giving them a platform to take online classes and practice exams that are in sync with the current DMV regulations as well as schedule on-the-road training sessions with an instructor and a vehicle. The purpose of this system is to decrease the number of failed driving tests occurring at the DMV; effectively prepare student drivers with an online, and up-to-date educational application; and fill the void in the market for student driver 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?*

* DriverPass wants to help educate student drivers as they are learning to drive and prepare them for their upcoming driving test. The system will aid student drivers by providing them with a platform to schedule and manage training appointments with driving instructors. Student drivers will be given access to online tools to help them study and monitor their progress as they become better drivers. There have been several student drivers that have failed their driving exam and had to retake the exam at the DMV. DriverPass hopes to target this market space, mutually benefiting both DriverPass and the student driver, who will be better prepared to pass their driving test on the first try.

**System components**

* Online Registration
* DMV Integration
* Online Driving Scheduler
* Online Student Driver Dashboard
* Contact Information Resource
* Security / User Authorization / User Authentication
* User Action Tracking

### 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?*

* General
  + Allow users access from anywhere that has an internet connection via computer or mobile device
* Online Registration
  + Users can establish student driver / driving instructor user profile
  + User can purchase student driver packages
  + User can manage payment method
* DMV Integration
  + Any new rules, policies or sample questions should be current with DMV requirements.
  + Tests and Practice Questions should be current with DMV requirements
  + Any time there is an update to the DMV requirements, the system should notify the DriverPass
* Online Driving Scheduler
  + Student driver may choose pick-up / drop-off location
  + Student driver user can establish appointment(s), book a car and driving instructor for a two-hour training
  + Student driver user can edit appointment(s)
  + Student driver user can cancel appointment(s)
* Online Student Driver Dashboard
  + Student driver user can see their history of completed tests
  + Student driver user can see in progress tests
  + Student driver user can document/recall driving notes, with reference to driving start time and end time
* Contact Information Resource
  + Student driver user may access information to contact DriverPass
  + DriverPass user may access information to contact the student driver
* Security / User Authorization / User Authentication
  + DriverPass user may reset user passwords, if necessary
  + DriverPass user may disable user accounts, if necessary
* User Action Tracking
  + System should track when a user makes a change to a record in the system

## Requirements

### Nonfunctional Requirements

#### 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 shall be able to work in any Web browser
* The system shall be able to integrate with the DMV API and receive notifications whenever there is an update in rules, policies, or sample questions

#### 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?*

* The system shall run on two servers, a database server and a web server, both of which will be Linux servers.
* The database server shall include a MySQL database

#### 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 input shall be case-sensitive
* The system shall distinguish between users, identifying them by their unique email addresses

#### 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?*

* The system shall notify admin users when the DMV has updated its requirements, rules, practice questions, etc.
* The system shall have the ability to add to, modify, or delete driver packages.
* The system shall allow a secretary user to add, modify, or cancel appointments
* The system servers and database shall be accessible to Ian, DriverPass IT officer

#### 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?*

* The system shall require users to authenticate using a unique username and strong password
* The system shall encrypt passwords before storing them in the database to protect against nefarious users
* The system data shall be transmitted using https protocol to ensure encrypted data transmissions
* The system shall allow privileged users to disable another user’s account
* The system shall allow privileged users to reset another user’s password
* The system shall allow users to reset their own password

### 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 validate user credentials when logging in
* The system shall include functionality to download reports into csv format
* The system shall log all additions and modifications to system records, including the user who created/updated the record and the timestamp in which the record was created/modified
* The system shall include functionality to download a report of the system log in csv format
* The system shall track driving appointments, including the vehicle, driving instructor, and registered user who will be in attendance
* The system shall include functionality for an admin user to disable a package

### 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 system shall include functionality that allows an authenticated user to make reservations for driving lessons, including the day and time they would like to take the lesson.
* The system shall include functionality that allows an authenticated secretary user to make reservations for driving lessons on behalf of a customer, including the day and time the customer would like to take the lesson.
* The system shall include functionality to allow authenticated users the ability to select a driving package and schedule appointments.
* The system shall include a form for registering a customer, which includes the customer's first name, last name, address, phone number, credit card number, credit card expiration date, credit card security code, and requested pick-up/drop-off location.
* The system shall include dashboard page that includes the following information:
  + Online test progress / testing history
    - Time
    - Score
    - Status (not taken, in progress, failed, or passed)
  + Profile information (first name, last name, address, city, state, zip, phone, email, etc.)
  + Special needs
  + Driver notes
    - Lesson Time
    - Start Hour
    - End Hour
    - Driver Comments
  + Driver photo
  + Student photo
* The system shall include a contact page, providing DriverPass’ contact information to the customer
* The system shall include a customer profile page, providing student driver contact information to authenticated privileged users.

### 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?*

* It is assumed that students have access to an internet ready device
* It is assumed that student drivers are legally permitted to drive

### 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 system is limited in that it cannot accommodate every customer request for an appointment
* The system is limited in that it cannot ensure driving instructors are available for hire
* The system is limited in that it cannot ensure all vehicles are in good working condition

### Gantt Chart

