# 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?*

* The project described below was requested by a client called DriverPass. DriverPass believes that there’s a need for better driver training. This project is intended to build a system for DriverPass that can be used to keep track of their customers, enable the purchase of a service bundle of their customers choice and give them access to reserve driving classes, read driving materials and take practice tests online. They also want to provide a way to give people the chance for 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?*

* Many people fail their driving tests at the DMV. DriverPass wants to provide a driver training for their customers, so that they are successful at passing that test. DriverPass believes that a combination of on-the-road car training, online classes and practice tests will help their customers succeed.
* The system needs to hold DriverPass customer database.
* The system needs to support a reservation UI with different reservation options.
* The system needs to hold online learning materials and tests that are in sync with the latest DMV rules and policies.
* The system needs to provide different levels of access for various users.
* The problem that DriverPass wants to fix is the need for better driver training. The components are:
  + Computer Component:
    - - Front end user interface. This is where the user logs into the proposed system and enters in sign-up and other related information.
    - - Back end database. This is where the information that the user provides is stored and how and to what level security is implemented.
  + Human component:
    - - Face-to-face logistics. This is where the logistics of user pick up and drop off is planned and implemented.
    - - Face-to-face training. This is where the different levels of training packages are offered, planned, and implemented.

### 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?*

* The system should be accessible on multiple platforms (PC, Android, iOS, iPhone, etc)
* The system should run on cloud to remove the need for in-house backup and security.
* The system should provide different access rights for different roles:
  + Admin: has absolute access to all system data and accounts.
  + Internal User: broad permissions to make the reservations on behalf of customers and make modifications to existing reservations and accounts.
  + External User: regular system user access for customers to create an account, purchase a bundle, make, cancel and modify their appointments.
* System should allow Admin and Internal Users to extract reporting and export the data to Excel.
* System should retain a log of changes and events and have an event history viewer.
* System should have a reservation UI that takes day and time as an input and matches the reservation with the driver and the car.
* System should allow DriverPass customers to access online learning and training materials.
* System should have 3 packages that customers can purchase. Admin User should have permissions to enable and disable the packages.
* Connection and sync with the DMV rules, policies and sample questions should be supported. Whenever DMV updates them, this should trigger a notification.

## 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 needs to run as a web-based application
* The system needs to be hosted in the cloud because the client wants little technical or physical equipment responsibilities.
* The system should be fast and on-demand for the clients' customers.
* The system should be updated at least quarterly to match DMV changes.

#### 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 platform will be Windows based.
* There will be a database for customer data, as well as, user/admin account verification.
* There will also be a ticket-like system.
* The ticket system will need to be able to provide excel reports.

#### 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 input that will be case-sensitive will be the passwords of accounts.
* The input of dates for classes will be format specific.
* All other input will be sensitive based on its use (ie. credit card numbers or phone numbers).
* The way we will distinguish users is by having them input personal information that connects them to their account.
* The roles and permissions will also distinguish different users
  + External users will only be able to:
    - sign up for classes
    - reset own password
    - update own account information
  + Internal users will be able to:
    - sign up for classes
    - sign up others for classes
    - reset own and others passwords
    - update own and others account information

#### 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?*

* We will be able to make changes to the user without modifying the code.
* The system should perform well to updates but will need to be tested before being published into production.
* The IT admin will need manager rights and abilities to:
  + Be able to view the environment.
  + View tickets/the ticket system.
  + Make account changes for users.
  + Reset passwords

#### 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 user will need to fill out a sign-up form with basic information, as well as a username and password.
* Being it will be web-based, we will use secure protocols such as HTTPS.
* The account will be locked if the user or hacker fails the password attempt three times.
* If the user forgets their password, they will have the option to reset it themselves or call in, verify themselves, and have the IT team reset their 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 be connected to the DMV for all future DMV policy and information updates.
* The system shall have a ticket-like system.
* The system shall be available for online and offline use.
* The system shall be able to have and distinguish between user and admin accounts.
* The system shall be a web-application and hosted through a cloud provider.
* The system shall have multiple pages that perform different functions.

### 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 interface should have multiple pages.
* The users should be able to access all the training purchased, any drivers notes, and test and training progress.
* There should be a registration form.
* There should be a contact us for the users.
* There should be a contact customer for the admins.
* For the admins there should be a ticket or registration queue.
* The system will be accessible through a desktop/laptop browser.

### 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?*

* We will be responsible for all application security and updates post-launch.
* We will assist with cloud provider hosting.
* We will assist in exact hardware for server and database.
* We will build the ticket system.
* We will ensure that internal and external users do not conflict.

### 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?*

* Hosting the application in the cloud and designing it as a desktop web-application.
* Connecting it directly to the DMV.
* Timing will be an issue due to having to create a database and ticket system.
* Ensuring we create all models of the system so as to not leave out anything important or vital.

### Gantt Chart

*Please include a screenshot of the GANTT chart that you created with Lucidchart. Be sure to check that it meets the plan described by the characters in the interview.*

