# CS 255 Business Requirements Document

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## 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 Client is DriverPass, a company that wishes to meet the demand for better education for passing the driving test for driver’s licenses by the DMV. The Client hopes to have a system that allows users to take online practice tests, classes, and schedule in-person driving lessons.

### 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 the system to be able to allow different user roles, such as IT officers and normal users. The system must be able to be flexible in data display and modification. The problem the Client wants to fix with this system is the demand for better education for Driver’s Licenses. The main page needs to display many sections including Driver notes, pictures, and test status. There needs to be a page for user input such as name, address, phone, location, and credit information. Another page needs to have contact information for the Client and the users.

### 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?*

This system must be able to do these things once it is completed:

* Access data from anywhere online and be able to download reports and other information.
* Have user roles for IT officers and executives to modify and delete information and user profiles. Other roles and retired employees must not be able to have these privileges.
* Have a tracking system for who creates reservations, modifies them, and cancels them.
* Allow users to make reservations with drivers at a specific time, date, time, and location pick up and drop off.
* Have several purchasable packages, starting with just three, with more flexibility in the future.
* Register user information over phone and online with their name, address, phone number, and credit card information.
* Connect with the DMV rules to keep lessons up to date with regulations and compliance.
* Runs off cloud architecture, where Client can have security and backup taken care of for them.
* Allow users to take tests and online courses through the system.
* Class, test, notes, and other information on the main page is updated as new data is made.
* Separate page for Client inputting user information. The customer themselves as a user can enter this information themselves via registration.

## 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 in a web-based environment on a cloud infrastructure, where users with executive permission can update the system data without redundancies. The system should be able to update within minutes. Reservations and updates to the packages offered in the system should show up to users in seconds or minutes. These updates may occur every few seconds to minutes, depending on the number of users. Packages offered for sale in the system should appear in the system within just a few seconds to minutes.

#### 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 will be run on the cloud, with many of the details being handled by the cloud service. This includes backend databases, security, and operating platforms. The web-based version will be hosted on the cloud and thus can be run as a web-app on various browsers such as Chrome and Firefox. This means the front end of the system, facing the users, should be JavaScript, so that most platforms will have minimal issues when running the application on their browsers.

#### 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 can distinguish users by login tokens that denote their permissions. There will be a primary admin that can modify, update and delete all data in the system including accounts, reservations, and activity reports. The other user will be an IT admin that will do the same, except perhaps other permissions as desired by the primary admin. The other user will be a secretary that assists in setting up reservations by phone call and input into the system manually. The system needs to track user changes in the system in relation to reservation creation, cancellation, and modification. The system should be able to print these changes in an activity report.

#### 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?*

* Changes to user accounts must be made by users with executive permission without changing the code. The system should also be connected to the DMV regulations to provide updates and notifications of the need to update curriculum. The IT administration also needs access to reservation creation, cancellation, and revision in case of any problems that arise due to system failure or user mistakes. These reservations must have a record of which users were making changes.

#### 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 a username and password to access the various features. Secure connections should be made with common and well-known practices, such as encryption and hashed passwords. User accounts should also be locked by the system in case of “brute force” attacks, by locking after 5 or so arbitrary attempts to login. If a user forgets their password, the user with executive privileges should reset their password. Executive permissions should also include blocking/deleting accounts no longer in use by employees.

### 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 differentiate between different user credentials when logging in.
* The system shall provide input forms and input validation for sign up and reservations.
* The system shall provide activity reports of users who interact with reservations and their data.
* The system shall provide information to various users about reservations.
* The system shall record activity and provide reports to the correct permitted users.
* The system shall allow for update, modification, and deletion of accounts and reservations by the correct permitted users.

### 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 needs to display various information to various users. The different users include the admin, secretary, and customer of the system. The admin will need to have an interface that displays actions such as modifying accounts, reservations, and cancelling or activating offered services. The secretary will need to have an interface that allows for manual input for customers. The secretary will receive information by phone and needs to have an easy-to-navigate form to fill out on a web-based version of the system. The customers will have an online interface that will provide information on reservations, their driver, test progress, and their general information. Interactions with the system will be restricted to browsers and desktops for the time being according to the client’s future outlook.

### 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 are making assumptions based on the cloud infrastructure provided by a third-party company. We do not know which company we will use for this part of the project. This implies that there will be different choices for security and backend support. This choice will affect the user experience depending on how effective and distributed this cloud infrastructure is.

### 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?*

* Since the backend support will be outsourced, this part of the project will be limited to the intuition and effectiveness of the cloud infrastructure. The system is also currently limited to a desktop web-based application where users with mobile devices or other devices cannot access the system.

### 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.*

