# CS 255 Business Requirements Document Template

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 purpose of this project is to build a web client for a driving school.
* Client is DriverPass
* The owner’s name is Liam, and his IT officer is Ian.
* They want a system that will help their customers improve their driving skills by using their website to receive training and through in person lessons that were scheduled on the site.
* They also want the system to be able to be used by employees no matter where they are, or if they have internet or not.

### 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?*

* System will be divided into Customer accounts and employee accounts.
* Customer accounts are created by an employee after receiving a new customer’s information from over the phone.
* System will store account information like first name, last name, address, phone number, state, credit card, pin, expiration date, and purchased bundles.
* Employee accounts should have the ability to modify appointments, reset passwords, and block access to customers that no longer need access.
* When appointments are modified either by customer or employee those changes must be tracked.
* System interface will display test name, test date, score, and status (pending, passed, failed)
* System interface will also display instructor notes as well as lesson start time, and endtime.
* Appointments should have the customer name, date and time of the appointments, 2 hour intervals, the instructor for that time slot, and where the lesson will take place.
* Appointments can be made online or in the office.
* System will be alerted when the DMV makes changes to policy

### 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 following tasks should be done by a customer account: account login, appointment creation, bundle purchase, view dashboard, view past and future appointments.
* The following tasks should be done by an employee account: account login, appointment creation, appointment adjustments, class bundle adjustment, password reset, revoke account access, and remote system access.
* System is able to detect policy changes on the DMV website.

## 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?*

* This is a web-based application that should work on a wide array of devices to include mobile devices.
* A cloud provider should be used to allow 24/7 access and maintenance to the application server.
* The system should run as fast as resources allow, this could be achieved by keeping data on the client side device.
* When connecting to the internet the client will check with the server for updates.
* System should be updated when there are sufficient updates needed that the system requires more than current normal functions.

#### 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?*

* System will be constrained to only devices that are able to access a web browser.
* Should work on all major platforms: Mac, windows, Unix, smart phones, tablets, etc.
* A cloud server and database will be needed for cost effective upkeep of the back end.

#### 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 should with 100% accuracy distinguish between different users.
* The system will distinguish between users via a user id, aka the driver license number.
* Input will not be case sensitive, everything should be unique to that user.
* Exceptions to being totally unique are with the address and credit card information since there could be cases of family members using the same information. Each id should be enough to separate out the different customer users.
* Employee ids will be in a different format than the drivers license so as to allow quick identification of what kind of account it is.
* Employee ids will be job title and number. I.e. CEO-001.
* When duplicate ids are being used admin should be alerted to potential errors.
* If information for each category does not match standard formats, also alert admin to verify the validity of the 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?*

* The account should be 100% modifiable with the exception of the account id.
* The code should be as such that minor changes in screen size or layout by a device will not affect the web application’s performance.
* Code should be checked regularly to make sure device updates have not made the code incompatible.
* IT admin needs to be able to access the bundles that are for sale, the appointment schedule system, a password reset function, and account revocation functions.
* If possible add functionality to allow IT admin to make minor adjustments to the webpage to allow for seasonal updates like holiday themes.

#### 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.
* We will use industry best practices for secure data sharing with TLS protocols, Certificate Authorities, and SHA-256 encryption.
* Passwords should be permanently encrypted, and never sent in the clear.
* Usernames will be encrypted while in transit
* Since passwords will be permanently encrypted a forgotten password means a password reset.
* If we use the SHA-256 cipher, a brute force attack should not be able to break the encryption, but an attempt will still lead to us notifying the customer that they should change account names and passwords.

### 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 authenticate user login credentials when logging in.
* The system shall notify admin of any excessive unauthorized attempts at login.
* The system shall be accessible from anywhere and at any time.
* The system shall update appointments immediately at the time of creation or when modified.
* The system shall process user purchase only after verifying the credit card information is valid.
* The system will allow or block access immediately upon account creation or revocation.

### 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 will be used by both customers and employees.
* The interface should display the most important information at all times
* Allow the user to easily navigate to their desired activity
* The interface needs to respond to both mouse click and touch
* The interface needs to adjust graphics to size of the screen displayed on

### 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?*

* I am assuming that the user knows how to use mobile applications on their web browser without needing guidance from the company.
* I am assuming that financial transactions are going to be taken care of by a third party.

### 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 by its capacity.
* Capacity refers to both being able to handle a large volume of users logging in as well as the capacity to store all the information pertaining to each of those accounts.
* The capacity and maintenance of the system are bound by the budget. If you can not afford more cloud storage then that is where the storage capacity limit is.
* The system is limited to web browsers. Some users would prefer an app over a web based application.
* Development time is limited to budget. We must be done at some point. Budget tells us that we can no longer spend time debugging and we must hit our definition of done within a specific time frame.
* We are bound by the technology of today. We do not have quantum computing yet. Our system can only process as fast as the device's hardware is able.

### 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.*

