# 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?*

* Our client, DriverPass, wants to create a holistic system to administer their business operations, which includes provided both written and practical training for people wanting to take their driving test at the DMV for their state. The system will need to be able to handle sales of three distinct packages or learning paths, reservations of time from instructional drivers (to include car and human capital assets) and user management for both internal and external users in a cloud-based environment.

### 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 is trying to fill what they see as an underserved market segment of clientele that will need training in a structured way in order to successfully pass the DMV driving test and receive a license to drive on their own. They are seeking a fairly flexible, cloud-based program where they can conduct sales of their services and do a wide variety of administrative tasks such as enabling and disabling packages available to purchase, as well as handle booking of instructional drivers and cars they will need, as well as logistics of where to pick up and drop off student drivers, as well as user role administration and client account administration, among other flexibility needs.

### 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 able to assist our client in managing the day-to-day operations of their business. It should be cloud-based to allow for users to access data from the system anywhere they have an internet connection. This system will need to give users latitude to make some administrative changes based on user role, and reporting features should be integrated to give the administrators at the client site the ability to access data in a spreadsheet format to make future business decisions. The end product will be stable, as flexible as is practical and cloud-based.

## 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 should be a web-based application
* The system should be updating very frequently (up to the minute at least) to facilitate scheduling task
* The system should be efficient enough to update multiple data tables simultaneously and have enough compute units dedicated to support multiple user sessions

#### 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 OS I would recommend for this system would be WindowsOS
  + Windows has high compatibility with database applications, one of which will be needed
  + Windows has many threat detection and security compatibilities, one of which will be needed
  + Low learning curve for internal staff to use and administer system

#### 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?*

* Users will be authenticated and the session dict will store both their user id and role to facilitate visibility/access to certain regions of the application
* As far as input, anything that can be automated should be. For address fields, user could provide street address and zip code, and we can then use an API to populate city and state, for instance. Radio or check buttons for anything that realistically can be done that way. Any time we are searching a database column, we can use methodology such as full text searches to reduce issues with case sensitivity for what is free-fill submitted data.
* An error report should be generated and sent to system admins anytime the application detects an issue with a workflow. A feedback form should also be visible on all forms so customers can notify admins of issues that would otherwise go undetected.

#### 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?*

* Admin module of the website should give a moderate level of control over Users table. Examples would be to trigger a password reset, to disable or enable a user. I think modifying details like email address or role is not a good idea for security purposes. Therefore, whatever role a user is assigned should be viewed as permanent. If a customer becomes an internal user, make them a new account with a new user role. Email address change should be done by the user themselves and should require 2FA to a mobile device or MFA application, as should completing password resets.

#### 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?*

* All login attempts should be handled via 2FA for external users and either 2FA or SSO for internal users. No database transactions should be completed in the client code. They should interact with a webserver through calls to it that either return data or update data in a way that is not visible in the client code. All update transactions with the data tables should check that the data item being updated item exists in the table, or that a new item is consistent with the data meant to be stored there. Brute force hacking attempts should result in a disabled account that must be re-enabled by an internal staff member after verification of the user. Passwords can be reset using a secure link sent to the email address on file, or by contacting an internal staff member and undergoing a 2FA authentication to verify them.

### 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.”*

* System should validate user credentials during login
* System should add, update, or delete appointments from supporting data tables
* System should facilitate payments for services via credit/debit card
* System should provide reporting data regarding online payment totals, course completion by customers, and workload by instructors, etc.
* System should update data and display updated data up to the minute

### 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 internal and external users, and as such should provide the user with a simple, easy-to-use experience. The admin module for system administers should be accessed through a sidebar menu link with visibility that is conditional on user role, to avoid confusion or clutter.

### 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 the users are able to read well enough to understand visible link titles and their purpose as well as form field labels and prompts. I am also assuming all users are experienced using web browsers and web-applications, the general blueprint for which will closely mirror the UI of the DriverPass application.

### 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?*

* I foresee limitations such as the ability to add or customize products sold on the web application as well as the ability to communicate information via text message or email to the customer directly through the application.

### 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.*

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