# 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 help train students for their driving test by providing driving sessions with a trainer, providing in-person lessons to explain DMV rules and policies, and providing an online class with access to a ton of content and materials to better prepare the students. Liam is the client, and he wants to be able to create a system that allows both his team and the users to schedule their own driving sessions with a trainer. He also wants to develop and online class where users can access practice tests and other content to better prepare them to take their driving test at the DMV.

### 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?*

* Liam feels that there is a need for better driving because a lot of people fail their driving test at the DMV. Liam wants customers to be able to take online classes and practice tests as well as provide on-the-road training if they wish.

### 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?*

* Liam wants tracking of when reservations are created, changed, or cancelled. He would like a log of any changes. He wants customers to be able to book two-hour appointments. As the appointments are being booked, drivers should be assigned to the slots. He has a total of 10 drivers to schedule. Liam wants to sell three separate packages and can deactivate the packages if he decides he doesn’t want to offer specific packages anymore. Package one consists of three two-hour sessions with a driving trainer. Package two consists of four two-hour sessions with a driving trainer as well as one in-person class where the instructor explains DMV rules and policies. Package three consists of six two-hour sessions with a driving trainer as well as one in-person class where the instructor explains DMV rules and policies plus access to the online class with all the content and material The online class also includes practice tests. Some measurables that must be included in the system design are the 2-hour time blocks for each instructor corresponding to the reservations made online. They also want to be able to control all aspects of the system including students, drivers, and cars. Students need to be able to schedule appointments and take practice tests. Drivers need to be able to view and set their availability for appointments. Cars must be reserved when drivers set appointments.

## 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?*

* Since the training platform will take place online, we need this to be developed as a web-based application. This will allow the user flexibility to use the operating system and hardware of their choice for accessing the site. The system should have a sufficient response time (less than 3 seconds) on all devices. That is the time in which users feel mobile sites should load efficiently. The system should be updated regularly to make sure it is staying up to date with all security changes made throughout the different browsers.

#### 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?*

* There are no specific platform constraints as it is a web-based application. Since 80% of servers run on Linux, that could support the functionality of the back end for this tool. A web-based application will allow us support from all devices that run a capable internet browser. Testing will require that all browsers are used to determine that the web-based application runs as intended on all devices. A database will be needed to keep all customer records as well as their achievements from the online training program.

#### 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?*

* To differentiate the different users of the system, permissions and roles will need to be created. We will use the principle of least privilege which states that users, programs, etc. should only be given the rights and responsibilities to areas that help them complete their job. By segregating the system, you are preventing unauthorized access from admin-only areas. A good system for making sure there are no problems would be to implement a system which requires two administrators to create new accounts. This way the admins can make sure that any privileges being granted are done so without compromising the rest of the system. The system should inform the admin immediately when unrestricted access is attempted. Having a system that locks passwords after a certain number of attempts can mitigate any issues.

#### 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?*

* Modifying user accounts will have to be restricted down to an IT administrator or company administrator role. An IT administrator role needs to have the ability to grant and revoke all access to the system. It must be able to restrict access to accounts as needed and create new company administrators as needed. Company administrators such as Liam would have access to make changes to packages being offered, users with varying levels of access, and the ability to modify the accounts. Deleting of user accounts will not happen as it will cause issues with the database. We will make accounts that need to be removed inactive to keep the integrity of the database.

#### 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?*

* To incorporate the user access system, a username and password will be required for users to gain access to the online training. Secure Socket Layer is a way to help secure the connection between the client and server. This helps to verify everything using digital certificates to ensure unauthorized use is not granted. A brute force hacking attempt would result from someone attempting to try multiple passwords for the account. A common way around this is to implement both a forgot your password feature to reset the password using the email address provided at sign up, as well as a locking mechanism where a user account is locked after 5 unsuccessful attempts to guess a password. 2-factor authentication is another method that we could implement which could allow someone to unlock a locked account and reset the password. A company admin or IT admin would be able to unlock the locked account as well.

### 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 allow users to access from any web browser on any device
* The system shall allow users to create new appointments
* The system shall allow users to modify existing appointments including cancel them
* The system shall allow users access to the calendar which shows availability for instructors
* The system shall allow users to take practice tests
* The system shall allow company admins to add or remove new packages
* The system shall allow company admins to add or remove users
* The system shall allow company admins to grant or revoke user privileges
* The system shall allow users to reset their password if they forget it
* The system shall lock after 5 unsuccessful login attempts to prevent attacks

### 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 be web-based and allow for access on multiple browsers. The different users will be customers interested in signing up for the program as well as customers who have already signed up for the program. If a customer pays for online training, they should be granted access to that on their account. Customers need to be able to view training material as well as take practice tests. They should be able to view their progress on a progress page and view the current schedule for on-the-road practice. Availability of instructors will need to be visible to the users signing up for classes. Users will be able to interact through both desktop browsers as well as mobile browsers.

### 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 has internet access.
* I am assuming that the multiple users will access this simultaneously.
* I am assuming that users have access to the latest browsers whether that be via smartphone or desktop.
* I am assuming that the user has an email address and a cell phone for 2-factor authentication.
* I am assuming that the company admin will need to be able to modify packages and users easily.
* I am assuming that this will use a client-server setup.

### 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?*

* Administrative costs and setup time will be a factor to consider. How much will to cost for hosting the server? How much time before the website needs to be up and running? Budget will need to be considered to determine how quickly this will be live. Will need system admin to help maintain system after contract is up.

### 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.*

Chart, timeline

Description automatically generated