# 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 create an online driver training and testing course to help people practice their driving skills without taking to the road, but with the option to get behind the wheel if they so choose. The client is DriverPass, and they are seeking a system that provides students with online practice exams and on-the-road training courses to help them pass their driving tests.

### 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 their system to be a functional database that has the capability to provide information both online and offline through downloads. They want their system to have user security and permissions based on the level of employment, as well as a tracking system to track user input and output data. A reservation system with a schedule will be implemented to track users and their driving tests, as well as a monitor system for their driving trainers. The client wants their system to be maintained in a cloud environment and compute with the latest DMV specifications and requirements.

### 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 accurately monitor and track student driving training and experience on the road with driving instructors. The cloud-based database should allow students to schedule driving tutors through various packages and enable students to continue their training and information offline. In order to facilitate these requirements, the system design needs to include user input and output tracking, user authentication and authorization, time logging, schedule tracking, secure storage on a cloud-based storage interface, and be up-to-date on current DMV guidelines, regulations and specifications.

## 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 DriverPass system wants to be able to function using web-based avenues, such as computers or laptops through a web browser, and additionally mobile devices over application. The system should be able to function both online and offline, and run at a reasonable pace, which should allow the system to be updated by one user and the updated information can be accessed by another within the minute. For the necessities of the DriverPass system, their updates pull from the DMV’s compliance requirements, therefore the system administrators should be notified whenever an update is available for the system.

#### 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 should run on the Windows 11 operating system for computer-based platforms and function on iOS and Android operating systems on mobile devices. Windows 11 has a built-in windows defender for an extra layer of security and automatic updates to help keep the system running safely. Android and iOS devices are the two major mobile devices available to the public market and would both benefit the system for mobile users. The system requires a back-end cloud-based server to act as a database for storage and retrieval purposes.

#### 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?*

* In accuracy and precision, the system will need to know how to distinguish between public users and administrators. To accomplish this, unique logon information and a user-specific pin are required to distinguish between different users. The input for the user logon information should be case sensitive, and only allow one unique username to be created for the web application. The pin should be unique to the individual, but other users may have the same pin with different logon credentials. The system should inform the admin of a problem when there has been several attempts to log into an account unsuccessfully by a user, and should lock the account for reverification purposes.

#### 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 system should allow administrators to add, remove, or modify users without changing code. This is done by specifying these changes in the code with a user interface accessible to administrative users to make updates to user accounts. Additionally, the system will have the ability to adapt to platform updates by maintaining code that can allow easy integration to updates in the DMV system. When working on the system, the IT admin would need administrative access to allow them the ability to make changes to the system when presented.

#### 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?*

* In terms of user security, a user requires a unique username, and a specified password to log into the system. The username will be unique to the user and only allow one instance of itself. The user will also require a password for logon that follows password best practices such as being 8 or more characters in length, include numbers and letters, and one special character. To protect the data exchange between client and server, the server should have a refresh function that tests for credential verification on certain intervals. This will ensure that the user is verified and can continue their current session, while other users who aren’t verified will time out and need to restart their session. This function may also apply if a user attempts to stay logged in for too long. If there is a “brute force” hacking attempt, a user’s account will be locked in security purposes after several failed attempts. The account will then require a verification of authenticity, which would involve email verification to the provided email address attached to the account. The user will also be prompted to change their password for security purposes. If a user forgets their password, there will be a function that allows the user to set a new password and verify it through an email address provided upon account setup.

### 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 allow users the option to choose to create an account or log in to an existing account.
* The system shall prompt the user for a unique username and password at initial login.
* The system shall validate user credentials when logging in.
* The system shall allow data modification or updates while a user is online.
* The system shall allow data exporting to an excel spreadsheet for offline modification.
* The system shall have separate roles for different users to separate between a client and an administrator.
* The system shall allow users to make reservations for driving lessons.
* The system shall allow users to make, modify, and cancel appointments while online.
* The system shall allow users to automatically reset their password.
* The system shall provide a user with their information and session status updates.

### 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 user interface shall differentiate between a client account and an administrator account. The needs of the interface include options to schedule appointments, update and modify appointments, schedule reservations, make updates to the system, and modify options available in the system. The different users for this interface include the clients, the IT admins, the administrators, and the system schedulers. The administrators will be able to make modifications to the options available in the system, as well as update specific user accounts based on reports. The administrators will be able to interact with the interface using browser and mobile. The IT admins will be able to make updates to the system as well as modify the options available in the system. The IT admins will primarily access the interface using a web browser. The system schedulers will be able to schedule reservations and appointments and modify existing appointments already in the system for all the clients. The system schedulers will primarily access the interface via web browser. The user clients will be able to access the system to schedule appointments and reservations as well as make updates and modify existing appointments for themselves. The user clients will be able to access the interface using mobile and web 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?*

* For the system access, it is assumed that the clients will have access to the technology necessary to make appointments and schedule reservations by themselves. If they don’t have access to any of these facilities, they can call into the office and a system secretary, or system scheduler will make the changes on behalf of the customer’s request. It is assumed that the system will maintain functionality throughout the lifecycle of the system, however there may be moments in time that the system will go down due to a situation or issue to the host server or building. It is assumed that all the user clients will have access to a mobile device to connect via mobile application. It is assumed that the IT admins will only be able to access the system via a web browser to make changes through a computer and not a mobile device. It is assumed that the host server and system will have a constant and consistent supply of power to keep the server running on a permanent basis. It is also assumed that DriverPass will have a constant, consistent, and powerful enough internet connection to host a server allowing a high number of users to interact with their applications and web browsers at any given time without detriment to the system.

### 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?*

* A limitation of the system design could include the internet technology available for the host server. The host server will require a strong, constant, and consistent internet connection to function adequately.
* The system design requires a constant and consistent power source to always maintain functionality. If the host server loses power, the application and web browser will go down, reducing company capability and damaging the company revenue and progress, impacting schedule and budget to recover.
* The system design will require an experienced IT development team to successfully integrate the user interface properly. The requirement for the system wants advanced coding expertise incorporated into the framework to make it extremely difficult for people to make unauthorized changes without the proper experience. This could get expensive to host for DriverPass since high experience will cost more.
* DriverPass requires enough manpower resources to function adequately. Without the proper number of normal maintenance employees and schedulers, the success of the system may struggle.

### 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.*

A graph of progress on a project

Description automatically generated with medium confidence