# 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 the project is to create a system for the client, Driver Pass, that’s aims to provide better driving training for its users.
* The system should be able to practice tests and online classes for users that are preparing to take their driving exam through the DMV(Department of Motor Vehicles).
* The system should help users with their on-the-road driver training if they choose that option.
* The client is Liam, the owner, and his IT officer, Ian.

Requirements

* Access data from anywhere :online or offline.
* Be able to modify data anywhere if they are connected online.
* Have secure user access with different roles.
* Tracking ability to identify user activity on the system.
* Management of reservations for driving lessons.(Scheduling, cancellations, and appt modifications.)
* Different user types for Liam, Ian and secretary who can take appointments over the phone.
* Different package options for users with different training levels.
* Online class access
* Interface that runs on the web and client would like to use the cloud to keep technical issues to a minimum.
* Get regular updates from the DMV to keep up with the latest policies and/or rule changes.
* A user specific interface that includes online test progress, driver notes, user personal information, special needs, and both driving instructor and user photo.
* A form for users to input their personal information.
* A link for users to contact the company and a way for the company to contact the student.
* Adding other features may be considered in the future, client focus is on building the base of the system now.

### 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 offer better driving training for users that are getting ready to take their DMV tests.
* They want to offer online classes and practice tests as well as help with on-the-road training for customers who are interested.
* They want data on the system to be accessed both offline and online from anywhere, and modifications to the data can be made from anywhere if they are online.
* The system should track user activities for auditing purposes.
* Support different roles in the system for the different employees, each with their own set of rights.
* Have a connection with the DMV to get constant updates on policies, rule changes, and sample questions.
* The system should have a specific user interface with the features chosen by the client.
* There should be an input form for user personal information and links for the company to contact the user/user to contact the company.
* The DriverPass client would like to fix the existing void in the market for comprehensive driver training for tests taken at the DMV.
* The different components needed for the system are user authentication and control access to manage the different rights of the employee roles in the system.
* Online classes and tests for practice.
* The ability to manage appointments so that customers can make, modify, and cancel their driving lesson appointments.
* The ability to view data from anywhere online or offline, and modify, retrieve, and store data anywhere while online.
* A component to track user activity and provide a report.
* A feature to stay updated with the DMV for the latest changes.
* Interface design that creates a user-friendly interface that’s visually appealing.
* A communication module to allow communication between the users and the company.

### 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, when completed, should be able to provide the users with access to online classes and practice tests in preparation for their driving test.
* It should give the option for on-the-road training appointments.
* Allow users to make, modify, and cancel driving lesson appointments on the system.
* Give Liam and Ian access to the system’s data online or offline from anywhere and allow them to modify and retrieve data from anywhere while being online.
* The system should have a secure user authentication and control system to manage the different employees’ roles/rights.
* Keep track of user activities on the system for auditing purposes.
* Stay connected to the DMV to receive updates on rule changes/policies.
* Present a user-friendly interface that includes the features chosen by the client.(Online test progress, driver notes, user personal information, special needs, and both driving instructor and user photo).
* Allow the user and the company to be able to contact each other.
* The measurable tasks in the system design to achieve these goals would be to develop and implement an online learning module for classes and practice tests to ensure that customers can access and complete the classes and tests through their accounts and track their progress.
* Put into operation a booking system for the on-the-road driver training appointments to monitor the number of successful appointments that are made and completed through the system.
* Create an appointment management system for users to make, modify, and cancel their appointments to track all the appointments and modifications done using the system.
* Create a responsive user interface that is accessible from computers and mobile devices to access user feedback and satisfaction with interface.
* Add tracking to record user activity and changes in the system that can generate reports and audit logs.
* Establish a stable integration with the DMV for updates that will validate the system’s ability to receive and apply DMV updates in a timely manner.
* Test the communication module to make sure there is a smooth interaction between the users and the company by monitoring the effectiveness of the communication through the system.

## 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 environment needs to be web-based and accessible from various web browsers and mobile devices.
* The speed of the system should have quick loading times for the web pages and the retrieval of data.
* The system should be updated regularly to stay in sync with the latest DMV rule changes/policies.
* Updates should be scheduled around times when the system Is least used by users to minimize and disruptions.

#### 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 be able to run on all platforms including Windows, Linux, and MacOS.
* The system should also be compatible with the major web browsers including Google Chrome, Microsoft Edge, Firefox, and Safari.
* The back-end requirements for the system would be a strong database to support the storage and retrieval of data.
* The back end should be scalable and have the capability to handle increasing data volumes.

#### 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?*

* User identification will allow users to be differentiated based on unique usernames and passwords that will have their own criteria that will need to be met for security.
* The input case sensitivity will make sure the usernames and passwords should be case-sensitive to ensure accuracy during the user login process.
* The system should inform the administrator of any critical issues immediately that could potentially impact the functionality of the system.
* This should include issues related to the integrity of the data, user authentication or system stability.

#### 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 administrative employees to manage user accounts without the need to change the system’s code.
* This will be provided through a user management interface that allows administrative employees to add/remove or modify employee’s roles and permissions.
* The make sure that the system can adapt to platform it should be designed with flexibility in mind by well supported frameworks that will help minimize potential compatibility issues with platform updates.
* Regularly updating the system components and libraries to their latest stable versions will also improve compatibility with evolving platforms.
* IT admin will require full administrative access to manage and maintain the system.
* The IT admin access will include user management, adding/removing and modifying accounts and their roles.
* Adjusting system settings and configurations to ensure performance and security.
* Access to the database to perform maintenance and preventative maintenance tasks, backups, and data management.
* Installing updates and patches to keep the system up to date.
* Diagnosing and fixing technical issues that come up inside the system.
* Enforcing security measures to safeguard the system and all of its data.

#### 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?*

* User Authentication will be implemented so users are required to provide their unique username and a strong, complex password in order to log into the system.
* A password policy will enforce a minimum password length, combination of uppercase, lowercase, numbers and/or special characters and expiration to boost security.
* For secure connection and data exchange utilizing HTTPS to secure the connection between the user’s browser and the server.
* The HTTPS will encrypt the data exchange which will ensure that sensitive information remains confidential during transmission.
* To ensure brute force protection we can implement an account lockout policy to protect against this type of hacking attempt.
* The policy will include temporary locking out the user’s account after a certain number of failed logins and will prevent further login attempts for a specified amount of time.
* Implements CAPTCHA challenges after a certain number of failed login attempts will also prevent against automated brute force attacks.
* If the user forgets their password there will be a ‘forgot password’ function that allows users to reset their passwords if they have forgotten them.
* The ‘forgot password’ function will involve an email or SMS verification that coincides with the users contact information.
* Security questions can also be used if the user forgets their password, and these will be set up and answered during the user’s initial registration process.

### 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 provide online classes and practice tests for customers getting ready to take their DMV driving test.
* The system shall allow customers to make, modify, and cancel their driving lessons.
* The system shall enable users to access their test progress, test names, time taken, score and present status.
* The system shall allow instructors to leave comments and notes after each lesson so that the user can review them.
* The system shall manage and store the user’s personal information securely(name, address, phone, cc information).
* The system shall have a section for the users to address and special needs they may have.
* The system shall allow the users and the instructors to upload photos of themselves for verification purposes.
* The system shall offer different roles and access levels for employees.
* The system shallot connected with the DMV to receive constant updates.
* The system shall have a user-friendly interface that displays schedules, test progress and contact information.
* The system shall send notifications to users for upcoming appointments and updates.
* The system shall provide a ‘forgot password’ function for users to reset their password using email or SMS.
* The system shall create a secure connection between the client and server using HTTPS for exchanging data.
* The system shall have a strong password policy with minimum length, different complexities, and expiration.
* The system shall protect against brute force hacking attempts by locking out accounts after a certain number of failed entries.
* The system shall regularly update to adapt to evolving platforms and security patches.

### 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 needs a user-friendly and visually appealing design format.
* It needs clear navigation and sections that are organized.
* The interface should have a responsive design for different devices and screen sizes.
* Interface should have appropriate feedback and error messages to guide the user.
* The different users for the interface will be customers who are preparing for DMV driving tests.
* Driving instructors who conduct the on-the-road training.
* The owner(Liam) will have full administrative rights.
* The IT office(Ian) will be a user responsible for system maintenance and modifications.
* The secretary or assistant will be a user that handles phone appointments and basic tasks.
* The customers will interact with interface by accessing online classes, practice tests, and make, modify, or cancel driving appointments through web browsers on computers or mobile devices.
* The driving instructors will interact with the interface by reviewing driving lesson schedules, leaving comments after each lesson, and managing availability for appointments via web browsers on computers or mobile devices.
* Liam(Admin) will interact with the interface to perform tasks like managing user accounts, configuring the system settings, and accessing reports using web browsers on computers or mobile devices.
* The IT Officer will interact with the interface by managing system maintenance, updating functionalities, and handling technical issues with web browsers on computers or mobile devices.
* The secretary will interact with the interface through web browsers on computers or mobile devices to handle phone appointments, manage user information, and assist with basic tasks.

### 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?*

* Things that were not specifically addressed in the design above are specific data security measures or encryption protocols which can be crucial aspects of handling sensitive user information including financial data.
* The design does not include details about user training or support resources to help users use the system effectively and how to resolve any issues they might run into.
* The design does not specify detailed error handling and recovery protocols for situations such as network disruptions or server failures.
* The design does specify a payment processing system for the appointments/classes or if the system will be using a third party for credit card transactions.
* The system does not address whether it will support multiple languages.
* Assumptions in the design are that users and employees have a basic level of understanding with using web browsers and mobile devices.
* The design assumes that users will have a stable internet connection to access the system and all its components.
* The design assumes that the -web based interface will be compatible with the popular web browsers commonly used.
* The design assumes that the system will have authorized access to the latest DMV rule changes, policies, and sample questions.
* The design assumes that the system will adhere to relevant data protection, DMV regulations, and privacy laws.

### 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 design lacks specific details about data security measures, access controls and encryption protocols which could impact how the system reacts to potential security threats.
* The design assumes users will have stable internet connection which may limit system access in areas with poor network coverage.
* The design does not specific payment processing system which may limit the ability to handle financial transactions securely.
* The design does not address scalability and performance considerations which may impact the system’s ability to handle a growing user base.
* Resource constraints would be limited availability of skilled personnel or development resources which may affect the speed and complexity of implementing the system.
* Time constraints would be that strict timelines may limit the depth of testing, feature development and the ability to address unforeseen issues during the process.
* Budget constraints could be that a limited budget could impact the scope of the system and its features as well as security measures.
* Technology limitations would be that dependence on specific technologies or frameworks may restrict the system’s compatibility with certain platforms or require extra effort on future updates.

### 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 calendar with different colored boxes

Description automatically generated*