# 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 develop a system for DriverPass, a company that aims to provide better driver training to help customers pass their driving tests at the DMV.
* The client, Liam, is the owner of DriverPass, and he wants the system to handle online driver training courses, practice tests, and on-the-road driving lessons for customers.

### 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 provide better driver training by allowing customers to take **online courses, practice tests, and schedule on-the-road driving lessons**.
* The main problem they want to fix is the high failure rate of driving tests at the DMV by offering a more structured and accessible training program.
* The system should let users **register for training, book and modify appointments, track lesson progress, and access training materials online**.
* It should also ensure **secure user access** with different roles, such as the owner, IT officer, secretary, and customers.
* Key components of the system include **a reservation system for scheduling driving lessons, a database for storing customer and driver information, an online learning platform for practice tests, a secure payment system, and a way to receive DMV updates**.
* The system must be **cloud-based, user-friendly, and track changes made to reservations and user activity** to ensure smooth operations.

### 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?*

* When completed, the system should allow customers to create accounts, schedule and modify driving lessons, access online courses and practice tests, and securely make payments.
* It should also enable employees to manage appointments, track customer progress, and handle account issues, while the owner and IT officer should have full administrative control over the system.
* To achieve this, the system design must include tasks such as setting up user authentication and role-based access, developing a reservation system for scheduling and tracking driving lessons, integrating an online learning platform for courses and tests, implementing a secure payment processing feature, and creating a notification system for DMV updates.
* Additionally, the system should generate reports on student progress and activity, maintain a database for storing user and driver information, and ensure data security and reliability through cloud-based storage and backup solutions.

## 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 needs to run as a web-based platform, preferably cloud-based, to allow access from any device with an internet connection.
* It should be optimized for both desktop and mobile use, ensuring seamless experience for customers, employees, and administrators.
* The system should run efficiently, with minimal loading times, to provide smooth user experience when booking lessons, accessing training materials, or managing accounts. Ideally, page loads and system responses should occur within a few seconds to prevent delays or frustration.
* Updates should be performed regularly to maintain security, fix bugs, and improve functionality.
* Routine maintenance and minor updates could be scheduled monthly, while major feature updates should be implemented as needed, depending on business requirements and feedback from users.

#### 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 compatible with major web browsers across multiple platforms, including Windows, macOS, and Linux, to ensure accessibility for users regardless of their operating system.
* The back end will require a database to store user, appointment, and training data securely.
* A relational database management system like MySQL or PostgreSQL would be suitable for managing structured data, such as customer information, reservations, and payment details.

#### 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 will distinguish between different users by assigning unique roles and permissions, such as customer, secretary, IT officer, and admin.
* Each user will log in with a unique username and password, and their access to specific features of the system will be based on their role.
* The input will generally not be case-sensitive for usernames and passwords, as this will make it easier for users to log in without worrying about capitalization.
* However, certain inputs, like email addresses or system-generated codes, may be case-sensitive where necessary.
* The system should inform the admin of a problem whenever there is suspicious activity, such as failed login attempts, unauthorized access attempts, or system errors that could compromise data integrity.
* Additionally, issues such as failed payments or booking conflicts should trigger alerts to the admin so that they can address the problem promptly and ensure smooth operations.

#### 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 the admin to add, remove, or modify user accounts without requiring changes to the underlying code. This can be achieved by implementing an intuitive user management interface where the admin can adjust user details, roles, and permissions directly.
* The system can adapt to platform updates by being built with flexibility in mind, such as using modular components that can be easily updated without disrupting the entire system.
* The IT admin will need full access to the system, including the ability to reset user passwords, block or remove user accounts, and manage system configurations.
* This level of access ensures the IT admin can maintain the system’s security and smooth operation while also handling user-related issues or changes that arise.

#### 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 log in, the user will need to enter their unique username and password.
* The connection between the client and the server should be secured using encryption protocols such as HTTPS to ensure that data exchanged is protected from interception.
* Additionally, the system can implement secure password hashing techniques to safeguard sensitive user data.
* If there is a brute force hacking attempt, the system should automatically lock the account after a certain number of failed login attempts, notifying the admin of the suspicious activity.
* In the case that a user forgets their password, the system should provide a secure password recovery option, such as sending a password reset link to the user's registered email address, allowing them to reset their password through a secure 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 validate user credentials when logging in.
* The system shall allow customers to make, cancel, and modify driving lesson reservations online.
* The system shall track user activity, including who made, canceled, or modified reservations, and generate activity reports.
* The system shall enable customers to reset their passwords securely.
* The system shall allow IT administrators to manage user accounts, including resetting passwords, modifying roles, and blocking access.
* The system shall allow administrators to disable specific driving lesson packages without requiring system updates.
* The system shall securely store and encrypt sensitive customer information, such as personal details and payment information.
* The system shall notify the admin in case of suspicious activity, such as failed login attempts or brute force hacking attempts.
* The system shall provide real-time updates and notifications about changes to DMV rules and policies.
* The system shall offer a web-based interface that is accessible from any device with an internet connection.
* The system shall store data in a cloud-based solution to ensure scalability and minimize technical issues.

### 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 user-friendly, accessible via both web browsers and mobile devices, to accommodate all users.
* There will be several different users interacting with the interface, each with distinct needs. The customers need to be able to create accounts, log in securely, view available driving lesson packages, make reservations, modify or cancel appointments, and access online classes and practice tests.
* The secretary will use the interface to assist customers by making reservations, entering customer details, and handling customer inquiries.
* The IT administrator will need access to a backend interface that allows them to manage user accounts, reset passwords, block users, and ensure system security.
* The system will be accessible on both desktop computers through browsers and mobile devices through a responsive web interface or mobile application.
* The user interaction should be intuitive, with easy navigation for all roles to access the necessary functions based on their permissions.

### 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?*

* In the design above, there are a few elements not specifically addressed. For instance, there is no mention of how the system will handle payments or process credit card information, which is crucial for completing reservations.
* Additionally, the design does not explicitly discuss any system performance benchmarks such as response time for users or how the system will handle high traffic loads.
* Assumptions made in the design include that all users will have internet access and be able to use web browsers or mobile devices.
* It is also assumed that the system will be compatible with widely used platforms and devices, though the specific versions of browsers or mobile operating systems are not defined.
* Finally, the design assumes that the IT admin will have sufficient technical knowledge to manage the system without additional user training.

### 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 design has a few limitations that may impact its functionality. One limitation is that the flexibility of modifying packages may not be easily accessible to non-developers, requiring developer intervention for future changes. This could slow down any necessary adjustments to services.
* Additionally, the system relies heavily on online access for data syncing and updates, which may cause issues for users without reliable internet connections or if there is server downtime.
* As for resources, time constraints may limit the amount of testing and fine-tuning the system can undergo before deployment.
* Budget may also restrict the inclusion of advanced features or more complex security measures that could improve system performance.
* Lastly, technological limitations may arise if certain platforms or devices are incompatible with the system, which could affect user accessibility and experience.

### 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 screenshot of a project schedule

AI-generated content may be incorrect.*