# 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 a comprehensive, user-friendly training system for DriverPass, a company dedicated to improving driver education. DriverPass, under the leadership of its owner, Liam, seeks a solution to help customers better prepare for their DMV driving tests. This system needs to provide users with access to online training, practice exams, and on-the-road driving sessions. The system must be accessible online via multiple devices, including desktops and mobile platforms, to ensure ease of use and flexibility. Additionally, it should support staff in managing reservations, user accounts, and training packages. By building this system, DriverPass aims to address the market gap in quality driving test preparation.

### 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 to solve the problem of inadequate preparation for DMV driving tests, which leads to a high failure rate. The current lack of efficient tools for practical driving exam preparation presents a business opportunity that DriverPass aims to address. The system must enable customers to schedule and manage driving lessons, take online practice tests, and participate in training sessions. Key components include online access to data, reservation scheduling and tracking, secure role-based access control for staff, and real-time updates from the DMV to ensure the content remains relevant. Additionally, the system should be flexible enough to allow future modifications to training packages and provide a clear interface that displays user progress and activity.

### 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 primary goal of the system is to provide DriverPass with a functional, secure, and flexible solution that meets the needs of both customers and staff. It should allow customers to book, cancel, and modify reservations for driving lessons either online or via phone, while employees should have the ability to manage accounts, reset passwords, and track changes to reservations. The system should ensure that security is a priority by enforcing role-based access, with different permissions for administrators, instructors, and customers. It must also integrate seamlessly with updates from the DMV to ensure all training materials reflect the latest rules and standards.

To meet these objectives, the system design will include measurable tasks such as:

* Developing use case diagrams, activity diagrams, and class diagrams to capture all system requirements and define the relationships between users, actions, and data.
* Designing a user-friendly interface that allows customers to navigate easily and complete tasks, while building a database structure that supports the system’s data management needs.
* Implementing a business logic layer that handles security, user roles, and permissions, ensuring that access to different functions is properly controlled.
* Conducting thorough testing and system validation before deployment to ensure the system operates as required, followed by a final review and delivery to the client.

## 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 must operate primarily as a web-based application with optional mobile access. It must function efficiently on standard internet connections, with load times for all pages under three seconds to maintain user engagement. System updates should be pushed monthly, with immediate updates for critical security patches. During periods of high demand, such as exam seasons, the system should scale to handle increased traffic without degradation in performance.

#### 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 operating systems, including Windows, macOS, and Unix-based systems like Linux. The front end must be accessible via standard web browsers (e.g., Chrome, Firefox, Safari), while the back end should be built on a scalable cloud platform. Preferably, it should use a robust relational database such as MySQL or PostgreSQL to manage user data, reservations, and session records. The system should also leverage cloud infrastructure for scalability, ensuring that the application can grow with future demand.

#### 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?*

A case-insensitive email address must uniquely identify user accounts to avoid duplicate accounts. Passwords and other sensitive data must be case-sensitive to maintain security standards. The system should validate user input and alert administrators if suspicious activity or errors occur, such as failed login attempts, data anomalies, or scheduling conflicts. Notifications should be sent to the IT team if the error persists after three occurrences.

#### 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 IT administrators to add, modify, or remove users, roles, and permissions without changing the source code. Changes in user roles, such as promotions or account deactivation, should be managed via an administrative dashboard. The system must be adaptable to platform updates (e.g., new browser versions) without requiring significant re-engineering. IT administrators need full access to manage accounts, reset passwords, and turn off modules temporarily when needed.

#### 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 users must log in with a unique email and password. The system will use HTTPS to secure data transmission between the client and server, employing encryption protocols to protect sensitive information like payment details and personal data. In the event of a brute-force attack, the system will lock the account after five failed attempts and notify both the user and the system administrator. If a user forgets their password, they can reset it through a secure, email-based recovery process, and their account will be reactivated once the identity is verified.

### 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 register for driving lessons online.
* The system shall enable administrators to manage users, including adding, modifying, or removing them.
* The system shall allow customers to schedule, modify, or cancel driving lessons.
* The system shall generate and print activity reports tracking user actions.
* The system shall notify customers when DMV regulations or practice tests are updated.
* The system shall log and track reservation changes, noting the user responsible for the modification.

### 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 to be intuitive and accessible via both desktop and mobile devices. There will be three user roles: admin, customer, and instructor. Admins will need access to user management, reports, and system settings. Customers will need the ability to view available driving lesson slots, book lessons, and review their progress. Instructors will require access to their schedules and the ability to leave feedback on driving lessons. The interface should be mobile-responsive, ensuring a smooth user experience across devices.

### 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?*

The design assumes that users have access to modern web browsers and a stable internet connection and are familiar with basic web navigation. The system presumes that DriverPass will continue using a cloud-based infrastructure, and there is no need to support legacy systems.

### 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 may face limitations in handling large spikes in traffic without significant resource allocation. Due to time and budget constraints, the initial system may not include full-scale automation for module addition or removal, requiring developer intervention for significant changes. Additionally, compliance with future DMV regulations will require timely updates from external sources, which could affect system accuracy if not promptly addressed. Finally, as with any web-based system, outages or server failures could impact availability.

### 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

Description automatically generated