# 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?*

* Our client, DriverPass, seeks to fill a gap in the market for driver training aids. They require us to design a system that offers their customers online classes, practice tests, and the option to book in-person on-the-road training.

### 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?*

* The DriverPass system must be accessible online from anywhere.
* The client wants to offer online classes and practice driving tests to students, along with in-person driving classes.
* The client also requires a reservation system that enables customers and company personnel to book any of the three packages or the in-person driving classes offered. This system should allow for modifications to the schedule.
* User authentication and authorization should grant specific abilities in the system based on the user's role
* The owner needs the ability to manage all accounts, including resetting passwords, blocking accounts, and restricting access.
* The client wants to integrate with the DMV to ensure that new rules, policies, and sample questions are updated regularly, providing notifications whenever an update occurs.
* Company personnel and users should be able to view test progress, personal information, driver notes, driver photos, student photos, and any special needs. Test progress should include the test name, the time it was taken, the score, and the status (in progress, passed, failed, not taken).
* The owner should be able to track which driver is assigned to each student and which car is being used, linking this information to the reservation system.
* The system must operate in the cloud, as the owner does not want to manage backup and security issues.

### 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 objective is to create a fully functional website that enables students to access online classes and practice tests for the driving exam. Additionally, the website will facilitate the booking of in-person driving training, which will be offered in three different packages. Students will be able to schedule their in-person training sessions in two-hour blocks and have the flexibility to modify and change the dates and times of their classes.
* Employees will have access to a reservation system that allows them to schedule times for students who arrive in person or call to book appointments. The system will also enable the owner to manage various functionalities, including:

- Removing any of the three training packages offered.

- Viewing student and instructor pairings.

- Modifying user access levels.

- Viewing driver notes.

- Accessing student information.

- Tracking changes made within 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?*

* **Environment:** Web-based and cloud-hosted for scalability.
* **Speed:** Should respond in under 2 seconds to standard broadband connections.
* **Update Schedule:** Security patches every three months, major system updates annually

#### 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?*

* **Operating Systems:** Compatible with Windows, macOS, and Linux.
* **Database:** Uses PostgreSQL or MySQL for data management.
* **Cloud Provider:** Hosted on AWS or Azure for security and performance.

#### 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:** Role-based access control ensures secure user roles.
* **Case Sensitivity:** Login credentials are case-sensitive to improve security.
* **Error Notifications:** Alerts for failed logins, reservation conflicts, unauthorized modifications.

#### 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?*

* **User Management:** Admins can add/remove/modify users via a dashboard.
* **Platform Updates:** Supports API integration for future scalability.
* **Admin Access:** IT officers have full control over system configurations.

#### 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?*

* **Login Requirements:** **Two-factor authentication** for admin accounts.
* **Data Encryption:** Secure all communication using **SSL encryption**.
* **Brute Force Defense:** Lockout **after five failed login attempts**, requiring admin intervention.
* **Password Recovery:** Multi-step verification process for reset requests.

### 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.”*

**Authentication & Access Control**

* The system shall enforce role-based access control for different users (Admin, IT officer, Secretary, Customer).
* The system shall provide password recovery functionality via email verification.

**Reservation Management**

* The system shall allow customers to schedule, modify, and cancel driving lesson reservations online.
* The system shall allow secretaries to schedule appointments on behalf of customers.
* The system shall track lesson assignments, including associated drivers, cars, and customers.

**Data Access & Reporting**

* The system shall allow administrators to generate activity reports detailing reservations, modifications, and cancellations.
* The system shall support exporting data to Excel for offline analysis.
* The system shall log and track user actions for accountability.

**Security & Compliance**

* The system shall encrypt user credentials and financial transactions.
* The system shall notify administrators of failed login attempts exceeding a predefined threshold.
* The system shall allow direct integration with DMV databases for compliance 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.)?*

**Users & Their Needs**

* **Admins & IT Officers:** Need full system access, including modifying user permissions, resetting accounts, and managing compliance settings.
* **Secretaries:** Need access to scheduling functionalities, customer management, and appointment tracking.
* **Customers:** Need access to reservations, payment processing, and practice test progress tracking.

**Interaction Modes**

* The system shall be **web-based**, accessible via browsers on both desktop and mobile devices.
* The system shall have a **responsive design** ensuring usability across different screen sizes.
* The system shall provide **intuitive navigation** to minimize training for non-technical users.

### 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?*

Users will have internet access for online interactions. Customers will use standard browsers like Chrome, Firefox, Edge, or Safari. The system will integrate cloud-based security measures, eliminating the need for local backups. Admins will manually approve major system changes, rather than allowing fully automated modifications.

### 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?*

* **Budget & Resource Constraints:** Customization of training packages may require additional development resources not covered in the initial release.
* **Security Restrictions:** Offline data cannot be modified to prevent redundancy issues.
* **Scalability Concerns:** Future expansion may require additional cloud storage and processingpower as customer volume grows.
* **Integration Dependencies:** DMV compliance updates rely on third-party data access, which could affect update frequency.

### 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.*

