# CS 255 Business Requirements Document

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 design a cloud-based system for DriverPass that manages online driver education, practice exams, and on-the-road training scheduling.
* DriverPass wants a system that allows customers to access online classes, take practice tests, and schedule driving lessons.
* The system should enable employees to manage customer appointments, track user activity, and securely handle customer data.
* The client requires remote access to data, reporting capabilities for offline work, and role-based access control for different employees.

### 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 aims to solve the problem of high failure rates in DMV driving tests by providing better training resources.
* The company wants to offer a combination of online courses, practice exams, and in-person driving lessons.
* The system must support user account management, lesson reservations, driver and vehicle scheduling, package management, and integration with DMV updates.
* The platform should be web-based, hosted on the cloud, with built-in security, data backup, and minimal technical maintenance for DriverPass staff.

### 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 allow customers to register, schedule, modify, and cancel driving lessons online or through the office.
* The system should track all user actions, such as reservations, cancellations, and modifications, and generate activity reports.
* The system should provide role-based access for the owner, IT officer, secretary, and customers.
* The system should integrate with DMV systems to receive updates on rules, policies, and practice questions.
* The system should enable downloadable reports for offline use (e.g., in Excel).
* The system should allow the disabling of specific training packages when needed.
* The system should include secure password reset functionality for users.
* The system should display customer progress on online tests, including test names, times, scores, and status (not taken, in progress, failed, passed).
* The system should log driver notes, lesson times, and other relevant session details.

## 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 will be web-based, accessible through common browsers on computers and mobile devices.
* The system must respond quickly and load pages within 3–5 seconds to ensure good user experience.
* The system should be regularly updated, at least monthly, to maintain accuracy and security compliance with DMV requirements.

#### 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 must run on cloud-based platforms (such as AWS, Azure, or Google Cloud).
* It should be compatible with major browsers (Google Chrome, Firefox, Safari, Edge).
* The backend requires a robust database system (e.g., MySQL, PostgreSQL) to support data storage and retrieval.

#### 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?*

* Users will be distinguished through unique usernames (email addresses) and passwords.
* Inputs such as usernames and passwords are case-sensitive.
* The system will inform the admin immediately upon detecting critical issues, such as repeated login failures, unauthorized access attempts, or database connection errors.

#### 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?*

* Administrators (IT staff) will have the ability to add, remove, or modify users and permissions without modifying the underlying source code.
* The system must gracefully adapt to platform updates (cloud provider changes, browser updates) without significant downtime.
* IT administrators will have full administrative access, including user account management and system monitoring capabilities.

#### 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?*

* Users must authenticate via a secure login page, requiring a username and password.
* Data exchanges between client and server must be secured via SSL/TLS encryption (HTTPS).
* In the event of a brute-force hacking attempt, the system shall lock the account after five failed login attempts and notify an administrator.
* Users must have the option to reset forgotten passwords securely through a verified email 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 allow users (students) to register and create their accounts online or via telephone through staff assistance.
* The system shall allow users to schedule, modify, and cancel driving lesson reservations online.
* The system shall track all changes to reservations, recording who created, modified, or cancelled each appointment.
* The system shall provide online training modules, DMV practice tests, and progress tracking.
* The system shall enable administrative staff (secretaries) to schedule, modify, or cancel reservations on behalf of customers.
* The system shall allow IT administrators to manage user accounts, including creating, deleting, and modifying permissions.
* The system shall include downloadable reports compatible with Excel for administrative and management purposes.
* The system shall notify administrators about updates or changes to DMV rules, policies, and exam materials.
* The system shall provide detailed logs and reports of user activities and transactions for audit purposes.
* The system shall allow administrators to enable or disable certain training packages based on availability or business decisions.

### 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**: Students, Secretaries, IT Administrators, Company Owner

* **Students**: Schedule, modify, and cancel driving appointments, access training modules, view practice exam progress, reset passwords, and contact the company.
* **Secretaries**: Schedule, modify, cancel appointments, and manage customer details.
* **IT Administrators**: Manage user accounts, reset passwords, track system use, and ensure system security.
* **Owner (Liam)**: View business reports, track customer progress, monitor system use, and perform managerial tasks.
* Interface must be accessible via browsers (desktop and mobile-friendly) and intuitive for users with minimal training.
* Clearly laid out sections including appointment scheduling, test tracking, driver notes, and administrative pages.

### 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 reliable internet connections to access the online system.
* Users possess basic skills needed to navigate typical web-based applications.
* The system will not require users to install specialized software or plugins.
* Standard browsers and up-to-date operating systems will be used by all users.

### 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?*

* Limited resources and budget constraints may restrict the choice of cloud services and infrastructure.
* System must rely on DMV updates, which could introduce external dependencies and delays.
* Initial deployment may face constraints with scalability if the user base grows rapidly.
* Project timeline and deadlines restrict the complexity and number of initial features.

### 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.*

