# 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 design and implement an online system for DriverPass that enables students to access driving practice exams and schedule on-the-road training sessions.
* DriverPass aims to help students pass their driving tests by offering structured training, both online and in-person.
* The system should allow students to register, access online classes, take practice exams, schedule driving lessons, and track their progress.
* DriverPass staff, including the IT officer, secretary, and administrators, should have role-based access to manage users, lessons, and system operations.

### 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 has identified a significant failure rate among students taking driving tests due to inadequate training.
* Their proposed solution includes:
  + Online learning modules with practice tests.
  + On-the-road training sessions scheduled through an online reservation system.
  + Multiple training packages, with different levels of on-road and in-person training.
* The system must be web-based and accessible from anywhere, including mobile devices.
* It should provide administrators with tools to track bookings, monitor system usage, and manage user accounts.
* A cloud-based infrastructure is preferred to handle security, backups, and accessibility.
* The system must also integrate with DMV updates to ensure training materials remain current.

### 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?*

* **User Registration and Management**
  + The system shall allow customers to create and manage accounts.
  + Customers should be able to reset passwords automatically.
  + Administrators should be able to deactivate accounts if needed.
* **Online Learning and Testing**
  + The system shall provide access to online learning modules and practice tests.
  + It should track test progress and display statuses, such as Not Taken, In Progress, Failed, Passed.
  + Users should be able to download reports on their test performance.
* **Scheduling and Reservations**
  + Customers should be able to book, modify, or cancel driving lessons online.
  + The system should allow secretaries to schedule appointments on behalf of customers.
  + Each reservation should track the assigned driver, vehicle, time, and lesson status.
  + The system shall offer three distinct packages that can be purchased.
  + The system should enforce two-hour lesson durations, spreading the packages out into two-hour increments.
* **Role-Based Access**
  + The IT officer should have full access to reset accounts and modify system configurations.
  + The secretary should be able to manage appointments but not modify system settings.
  + The administrator should have access to business reports and system monitoring tools.
* **Tracking and Reports**
  + The system shall track all modifications made to reservations.
  + Administrators should be able to print activity reports showing all changes made.
* **Security and Compliance**
  + The system shall integrate with DMV updates to receive notifications of policy changes.
  + All transactions should be securely processed.
  + The system should support role-based authentication and restrict access accordingly.
* **System Flexibility**
  + The system should allow DriverPass to disable certain training packages if needed.
  + Future customization of training packages should be possible through system updates.

## 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 in a web-based environment accessible via browsers on both desktop and mobile devices.
* It should support cloud-based access so that users and employees can log in from anywhere.
* The system should run efficiently with minimal loading times, ideally under 3 seconds per page load during normal use.
* Updates should be applied as needed for security patches and to accommodate DMV regulation changes, with minimal downtime.

#### 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 infrastructure, eliminating the need for local server maintenance by DriverPass staff.
* It should be platform-independent but compatible with standard operating systems such as Windows, macOS, and mobile platforms through a browser.
* The back end will require a relational database to store user information, appointment schedules, exam results, and training package data.

#### 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 users by role-based access.
* Usernames and passwords should be case-sensitive to enhance security.
* The system should log and report key actions, and notify administrators if any unauthorized access or system errors occur.

#### 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 must allow authorized users to add, remove, or modify users through the interface, without needing to change the underlying code.
* It should remain functional and display properly after browser or platform updates.
* The IT administrator needs full access to system settings, including account resets and access restrictions for other users.

#### 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 will log in with a username and password.
* All data exchanges between the client and the server must use HTTPS encryption to secure sensitive information.
* After a certain number of failed login attempts, accounts should be temporarily locked to prevent brute force attacks.
* Users should be able to reset their password automatically through a secure, email-based recovery 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 students to register, log in, and manage their accounts.
* The system shall allow students to schedule, cancel, and modify driving lesson appointments online.
* The system shall allow secretaries to book appointments for students by phone or in person.
* The system shall track all appointment changes, including who made them and when.
* The system shall allow the IT officer to reset passwords and deactivate accounts.
* The system shall allow instructors to record comments and lesson information for each driving session.
* The system shall allow students to access online tests, view their scores, and track progress.
* The system shall enable admins to enable or disable specific training packages.
* The system shall receive and process DMV updates, notifying administrators of changes in policies or test materials.

### 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 must be accessible via web browsers on computers and mobile devices.
* Students will use the interface to schedule lessons, take online tests, view scores, and manage their account.
* The secretary will use the interface to enter customer information and make appointments manually.
* The IT officer will use an admin portal for account and system management.
* The interface should include clear visuals like progress bars for online test tracking and tables for lesson schedules and instructor notes.
* All pages should be user-friendly, responsive, and secure.

### 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 access to a stable internet connection to interact with the system online.
* Users will have basic digital literacy to navigate the system.
* The DMV will provide timely updates on exam and policy changes through an accessible endpoint or manual entry process.
* The system will not initially support custom creation of training packages, but package enabling/disabling is supported.

### 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 will not support offline data entry or synchronization. Updates and bookings require an active internet connection.
* Custom training package creation or module editing by non-developers will not be supported in the initial release.
* Resource limitations may delay some future features, like package customization or advanced reporting.
* The system is reliant on external DMV input for test and policy updates, which may not be immediate.

### 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.*

