# CS 255 Business Requirements Document

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August 1, 2025**

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 client, **DriverPass**, wants to provide better driver training by offering **online classes and practice tests** to customers.
* They also want to provide **on-the-road driving lessons** for customers who choose that option.

### 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 a system that can be **accessed remotely from any computer or mobile device.**
* The system should allow remote viewing, reporting, and exporting of data, including customer records and activity reports, while ensuring that data modifications can only occur when the user is online.
* The IT Officer (Ian) needs a **master admin account** with the ability to **reset user passwords, block accounts,** and manage user access.
* The system should **track all reservation activities**, including **who made, canceled, or modified reservations.**
* Customers should be able to **request driving lessons in 2-hour blocks**, choosing their preferred **date and time**, either **online via their account** or by contacting the **company secretary.**
* Both customers and the company secretary must have the ability to create, cancel, and modify appointments through the online system.
* The system should **match customers with available drivers and vehicles** for each scheduled lesson to prevent conflicts and double-booking.

### 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?*

* Allow customers to create and manage user accounts.
* Let users register for different training packages.
* Support online scheduling, canceling, and modifying appointments.
* Allow both customers and staff (secretary) to make and manage reservations.
* Generate and export activity and performance reports.
* Track which driver, vehicle, date, and time each lesson is assigned to.
* Provide user role management for IT staff (password resets, account lockouts, etc).
* Integrate DMV updates for policies and test questions.
* Include an online testing platform with scoring and progress tracking.

## 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 should be web-based and accessible to both standard internet browsers on desktop computers and mobile devices.
* Any web-page interactions should occur in under 2 seconds during normal load times.
* Support of 100 concurrent users at a time with optimal performance.
* System updates should be performed regularly during off-peak hours to keep DMV information current and address bug fixes as needed.

#### 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?*

* System should be cloud-hosted to reduce local infrastructure and ensure scalability
* The platform must support Windows, macOS, and Linux for both staff and customer use.
* The system backend is required to provide database functionality for structured data storage and to support analytics retrieval. The system should use a secure relational database such as MySQL or PostgreSQL
* The user interface should be responsive and fully compatible with both mobile devices and tablets.

#### 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 authentication by using email and password challenges and assigning a unique identifier for each account.
* Only properly formatted and consistent user input will be accepted.
* System alerts for unexpected behavior like data conflicts, duplicate reservations or failed logins should be generated and reported to the administrators.
* Input fields will not require case-sensitivity unless specified.

#### 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?*

* System administrators should have authority to enable or disable certain program packages as needed without developer intervention.
* System administrators should be able to modify user roles and privileges via the interface.
* The product platform should be compatible with existing web technologies and support regular updates for security and functionality improvements.
* DriverPass should support future integrations, such as Google Calendar for appointment reminders or custom reporting software for analytics.

#### 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?*

* Secure user login through credential verification.
* Brute-force prevention measures may involve temporarily locking accounts or requiring account verification through additional authorized methods.
* Password recovery through email or phone verification
* Role-based control implementation to restrict access based on user types.
* Customer Data Encryption

### 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 to register for an account and provide contact and payment information to make purchases.
* The system shall allow users to schedule and reschedule driving lessons in available blocks and cancel already scheduled lessons.
* The system shall display available training packages and allow customers to enroll in the package of their choosing.
* The system shall track which car and driver is assigned to each session and block out unavailable slots.
* The system shall record and display driver comments and lesson times for students in the student's account.
* The system shall enable IT staff to reset passwords and manage user access through authorized accounts.
* The system shall validate login credentials during sign-in attempts and lock out the account if too many failed attempts are made.
* The system shall send and receive DMV updates, notifying staff of new test questions or policy changes that were made.
* The system shall allow exporting of reports in Excel or PDF formats for business analytics.
* The system shall allow user accounts to view their test history, scores, and progress statuses on their account page.

### 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 must be browser-based, responsive and mobile friendly.
* Different users and roles to include customers, secretary, administrators and the owner.
* All users should have access to the system through a secure login portal.
* The UI should include dashboards tailored to each role, including appointment calendars and status indicators.

### 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?*

* All users will have internet access and a basic knowledge of how to navigate online portals.
* Customers possess access to email accounts for communication and password recovery.
* The DMV will make it easy to retrieve materials needed for studying for the written test.
* DriverPass has the resources available for managing a cloud-based hosting service.

### 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?*

* Customizing training packages with more than just being able to enable or disable will require developer input.
* Integration with external agency systems, such as the DMV, depends on the availability of the APIs and data sharing arrangements.
* Budget constraints may limit the possibility of implementing more advanced features like mobile applications or real-time GPS tracking.
* Security features will depend on which cloud provider is utilized and what capabilities they have. This may require additional features to meet standards.

### 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 computer screen

AI-generated content may be incorrect.