# CS 255 Business Requirements Document Template

Complete this template by replacing the bracketed text with the relevant information.

**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?*

* **Liam (Owner)**:
  + Access and download data and reports.
  + View, manage, and track customer reservations.
  + Monitor user activity logs and changes.
  + Enable/disable driving packages.
* **Ian (IT Officer)**:
  + Full administrative control over user accounts (reset passwords, block accounts).
  + Track user activity and system changes.
  + Perform system maintenance and modifications.
* **Secretary**:
  + Create, modify, and manage customer reservations (phone, online, in-person).
  + View driver and car availability.
  + Assign drivers and cars to scheduled lessons.
* **Customers**:
  + Request to schedule, modify, and cancel driving lessons online.
  + Select driving packages and manage personal profiles.
  + Track progress on online tests and lessons.
* **Drivers**:
  + View assigned lesson schedules.
  + Provide feedback and notes on each lesson for customers.

### 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?*

* Offer online driving classes, practice tests, and in-person driving lessons.
* Allow users to schedule, modify, and cancel driving lessons online.
* Access customer data and reports from any device.
* Support offline access for report viewing, but online access is required for updates.
* Enable tracking of changes to reservations and user activity for accountability to the customers.
* Manage different user roles with security permissions (admin can reset passwords or block accounts for example).
* Handle customer reservations, lesson assignments, and scheduling for drivers.
* Provide flexibility to modify and disable different training packages.
* Ensure compliance with DMV regulations and receive notifications about updates.
* Store and process customer data securely, including personal details and payment information.
* Track students' online test progress (completion status, time taken, scores).
* Log and display driver comments and lesson timings.

### 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?*

1. Provide Online and Offline Access:

* The system should allow users to access customer data, schedules, and reports online from any device. Offline access should enable downloading reports and working with data without modifying it.

1. Enable Online Scheduling and Reservations:

* Customers should be able to create, modify, and cancel driving lesson reservations online.
* The system should track all scheduling changes for auditing purposes.
* Secretaries must be able to manage reservations via phone or in-person requests.

1. Flexible Package Management:

* The system should support multiple training packages and allow the owner to disable or modify package offerings as needed.

1. User Role and Security Management:

* Different users should have distinct access levels to the system:
* Full access for the owner and IT officer (Liam and Ian) to monitor, update, and manage accounts.
* Restricted access for secretaries to manage reservations.
* Customers should only access their profiles and lesson information.
* Role-based access control should ensure security, including password resets and the ability to block accounts.

1. Driver and Car Assignment:

* The system should allow secretaries to assign drivers to each customer’s lesson and view availability.

1. Lesson and Test Progress Tracking:

* Customers should be able to track their progress in online tests and driving lessons, including details like time taken, scores, and status (not taken, in progress, failed, passed).
* Drivers should be able to log notes and feedback for each lesson.

1. Compliance with DMV Regulations:

* The system should connect with the DMV to receive updates on rules and regulations. Notifications should be generated when changes are made.

1. Activity Logs and Reporting:

* The system should maintain a detailed activity log showing who made or modified reservations and any other changes.
* It should generate reports on user activities, reservations, and test progress.

Measurable Tasks:

* Build online and offline access capabilities for customer data and reports.
* Implement scheduling functionality that allows for lesson creation, modification, and cancellation.
* Set up user roles with secure access rights based on responsibilities.
* Integrate a DMV compliance update system with notification functionality.
* Enable driver and car assignment features with tracking for lesson progress and feedback.
* Create activity logs and reporting tools for accountability and performance monitoring.

## 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 has to be web-based and accessible on desktop and mobile browsers.
* It should have a quick response time for any data retrieval operations.
* The system should support at least 100 concurrent users at any given moment without performance degradation.
* Frequent updates to the system should occur during off-peak hours to facilitate security and performance upgrades.

#### 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 run on cloud platforms (Google Cloud for example) to ensure scalability.
* The system should run on all major platforms such as Windows, macOS, Linux.
* Database should be connected securely to back-end for data storage.
* DMV updates should be implemented via API integration.

#### 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?*

* **FIXME**

#### 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 support adding/removing users without requiring code changes, using a role-based access control (RBAC) system.
* The system must be compatible with future platform and browser updates.
* IT admins must have control over user roles, system configurations, and other management tasks.

#### 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?*

* The system shall require users to log in using a username and password with optional two-factor authentication.
* The connection between the client and the server must be encrypted.
* If there is a brute-force attack on an account, the system will lock the account for a specific duration and notify the admin.
* The system should offer a secure password recovery mechanism, allowing users to reset their passwords via email verification.

### 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 must validate user credentials when logging in
* The system has to allow users to schedule, modify, or cancel driving lessons through the web interface.
* The system will have to track the progress of students, recording test scores and lesson completion.
* The system allows administrators to view and modify all user accounts.
* The system can generate and download reports in various formats (PDF, Excel).
* The system will be able to log all modifications to reservations and user data for auditing purposes.
* The system enables the secretary user to assign drivers and cars to appointments based on availability.

### 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.)?*

* Interface must show Online test progress, Customer Information, Driver Notes, Special needs of the customers, and the photos of the driver and the student from the main dashboard of the customer.
* **Customers**: Will be able to view driving lessons, book, cancel, or modify appointments, and track test progress via a user-friendly interface. Accessible on both desktop and mobile.
* **Liam (Owner)**: Needs a dashboard to monitor overall operations, including reservations, customer data, and reports.
* **Ian (IT Officer)**: Requires full administrative control with options to reset passwords, block users, and view activity logs.
* **Secretaries**: Must have a simple reservation system to schedule appointments, assign drivers, and view availability.
* **Drivers**: Will require access to lesson schedules and a space to log notes after each session. They also will have start and finish time for the drive and the ability to leave comments via an interface as well.

### 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?*

* It is assumed that all users will have access to stable internet connections.
* It is assumed that the system will use a third-party payment processor for customer payments such as banks or PayPal for example.
* It is assumed that the system will be integrated into DriverPass’s existing infrastructure.

### 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 initially only support English though multiple languages can always be implemented in later updates.
* There is a budget limitation for adding something extensive like AI models or a call center.
* The system may be reliant on other servers (such as DMV), so latency affects real-time synchronization in some cases.

### 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.*

