# 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?*

* DriverPass aims to design a system that allows customers to access online training resources, take practice exams, and schedule on-the-road training to improve driving skills and pass DMV exams.
* The system should be accessible online and support mobile devices, providing easy access to DriverPass services and data.

### 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 identified a gap in driver training, where many students struggle to pass their DMV driving tests due to inadequate preparation.
* The proposed solution involves an online platform offering practice exams, study resources, and scheduling tools for in-person driving lessons with DriverPass instructors.
* Key system components will include user accounts, scheduling functionality, tracking for user activities, secure data access, and reporting tools.

### 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 users to register, create accounts, and access training materials.
* Customers must be able to schedule, cancel, or modify driving lesson reservations.
* The system must record activity logs, showing who created, modified, or canceled reservations.
* DriverPass staff must have role-based access: the IT officer needs admin rights, the secretary manages appointments, and Liam (the owner) needs reporting and oversight functions.
* Customers should be able to track and manage their progress, download reports, and access practice exams at their convenience.

## 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?*

* **Environments:** The system should run as a **web-based application** accessible on both desktop and movile devices to provide customers with flexibility in accessing services. It should also be optimized for quick response times.
* **Speed:** The system should load and process requests within **2-3 seconds** to ensure smooth and efficient user interaction.
* **Updates**: The system should be updated **monthly** with new content (practice exams, etc.), and any critical updates (bug fixes, security patches) should be pushed **immediately** to prevent downtime or security breaches.

#### 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?*

* **Platforms:** The system will be **cloud-based**, accessible via standard web browsers (Google Chrome, Firefox, Safari) on **Windows, macOS, and mobile platforms** (iOS, Android).
* **Backend Tools**: The backend will require a **database** to store customer data, reservation records, and transaction logs. Tools like **SQL** or **NoSQL** databases may be used, depending on scalability needs.

#### 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 Distinction:** They system will distinguish between different users by implementing a **role-based authentication system** (Admin, Secretary, Customer). Each user will have unique credentials and access rights.
* **Input Sensitivity:** User inputs (especially for personal data and payment details) will be case-sensitive to avoid errors.
* **Admin Notifications**: The system will automatically notify the admin when certain thresholds are met, such as when a reservation is modified or when a user exceeds a certain number of failed login attempts.

#### 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 Changes:** The system should allow administrators to **add, modify, or remove users** (e.g., new customers or employees) from the admin panel without requiring code changes. This can be achieved through a **user management interface**.
* **Platform Updates**: The system must be adaptable to platform updates (e.g., browser or OS updates), requiring **minimal intervention** from the IT department. The system must be capable of handling minor updates autonomously.
* **Admin Access**: The IT admin needs access to system logs, user roles, and system settings for **maintenance**, **updates**, and **security monitoring**.

#### 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:** Users must provide a valid username and password for access. **Two-factor authentication** should be implemented for admin users.
* **Data Exchange Security**: All data exchanges between the client and the server will be encrypted using **SSL/TLS protocols** to ensure data confidentiality.
* **Account Lock**: If a user attempts **3 failed login attempts**, the system will **lock the account** for **30 minutes** and notify the user via email.
* **Password Reset**: If a user forgets their password, they will be able to **reset it** through a **secure email link** or via **SMS 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 shall** enable customers to **schedule, cancel, and modify driving lessons**.
* **The system shall allow customers to take online practice tests and track their progress.**
* **The system shall enable admins (e.g., IT officers) to manage users and assign roles.**
* **The system shall notify the customer of their reservation status (confirmation, cancellation) and send a reminder before lessons.**
* **The system shall allow customers to make payments using their credit or debit card through an integrated payment processor (e.g., Square).**
* **The system shall generate activity reports for tracking user actions and reservations.**

### 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:**
  + **Customers:** Access and interact with the system through a **web-based interface** (desktop or mobile). They will be able to register, view and modify their reservations, take practice exams, and track progress.
  + **Admins**: Access through an admin panel, where they can manage user accounts, reservations, generate reports, and modify system settings.
  + **Secretary**: Responsible for managing appointments and assisting customers with reservations.
* **Mobile and Web Interaction**: The user interface should be **responsive** and **intuitive**, supporting touch inputs on mobile devices and mouse inputs on desktops.
* **Design**: The interface will follow a **simple, clean design**, with **clear buttons**, a **dashboard** for users to easily see their upcoming lessons, progress, and available tests.

### 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?*

* **Customer Assumptions:** Customers will have access to a **valid email** and **credit card information** for registration and payment.
* **Technology Assumptions:** The system will be cloud-based with a stable internet connection to handle real-time reservations and transactions.
* **Admin Assumptions:** IT personnel and administrators will have the necessary technical skills to handle routine maintenance and updates.

### 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?*

* **Feature Limitations:** The system will **not** allow customers to schedule a driving lesson without first completing certain prerequisite tests (e.g., passing online practice tests).
* **Time Constraints**: Due to project timelines, **customized lesson packages** (like adding or removing packages) will not be included in the first release.
* **Budget Constraints**: Features such as **voice interaction** or **advanced analytics** for driving instructors may be considered for future releases due to budget limitations.

### 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.*

