# 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 develop a system for DriverPass that will help students prepare for their driving exams.
* DriverPass is a company that provides online practice exams and on-the-road training to improve driving test success rates.
* The system should allow students to access training materials, take practice exams, schedule driving lessons, and track their progress.
* The system should also provide administrative functions for DriverPass employees, such as managing appointments, tracking student progress, and maintaining security and access controls.

### 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 address the high failure rate of students taking driving tests by providing a structured training system.
* Many students fail their tests because they only study previous exams rather than practicing real-world driving scenarios.
* The system will include two key components:

1. **Online Training:** Students can take practice exams and access learning materials related to DMV rules.
2. **On-the-Road Training:** Students can schedule driving lessons with instructors and track their progress.

* The system will support multiple users, including students, administrators, and instructors, each with different levels of access and permissions.
* It will also track reservations, monitor changes, and generate reports for business insights.

### 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 provide students with access to online practice tests and learning materials.
* The system should allow students to schedule, modify, and cancel driving lesson appointments online.
* The system should track student progress, including test scores and completed driving lessons.
* Administrators should be able to manage user accounts, including adding, modifying, and deactivating accounts.
* The system should allow instructors to access schedules, view student progress, and leave feedback after lessons.
* Security measures should be in place to protect sensitive student data and prevent unauthorized access.
* The system should be scalable to accommodate future updates, including potential new training packages and features.

## 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 shall be a **web-based application** accessible via desktop and mobile browsers.
* The system should be **responsive and load within 2 seconds** for most operations.
* The system should support **simultaneous users**, allowing multiple students, instructors, and administrators to use it without performance degradation.
* The online practice tests should provide **instant feedback** on results to help students learn from mistakes.
* The system should be **updated periodically** to ensure compliance with the latest DMV regulations and policies.

#### 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 shall be a **cloud-based web application**, reducing the need for local installations.
* It must be **compatible with modern web browsers** (Chrome, Firefox, Edge, and Safari).
* The system should be **accessible on both desktop and mobile devices**.
* The backend shall use a **relational database (e.g., MySQL or PostgreSQL)** to store user data, test results, and appointment records.
* The system should integrate with **secure payment gateways** for handling student registration and payment processing.
* It should support **API connections to DMV databases** to fetch the latest test materials and policy updates.

#### 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 shall use **unique user IDs** to differentiate students, instructors, and administrators.
* User authentication will require **case-sensitive** usernames and passwords for security.
* System logs should track **who made changes to reservations or user accounts**, ensuring accountability.
* The system shall send **automated alerts** to administrators in case of errors, unauthorized access attempts, or suspicious activities.
* When an instructor leaves feedback for a student, timestamps should be recorded to **ensure accurate tracking** of lesson progress.

#### 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 shall allow **administrators to add, remove, and modify user accounts** without requiring code changes.
* IT administrators shall have the ability to **adjust user roles and permissions** to reflect staff changes.
* The system should be **compatible with future platform updates** to web browsers and mobile devices.
* New DMV regulations and test updates should be **easily integrated** without requiring a full system overhaul.
* The system should allow **certain features (e.g., training packages) to be enabled or disabled** without affecting other functions.

#### 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 **log in with a secure username and password** to access the system.
* The system shall enforce **strong password requirements**, including a mix of uppercase letters, numbers, and special characters.
* User data and transactions shall be **encrypted using SSL/TLS** to protect information during transmission.
* The system shall implement **role-based access control (RBAC)** to restrict users to only the data and actions relevant to their roles.
* After multiple failed login attempts, the system shall **lock the account temporarily** to prevent brute-force attacks.
* Users should be able to **reset their passwords via email verification** in case they forget their credentials.
* Administrators shall have the ability to **deactivate accounts immediately** if suspicious activity is detected.

### 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 create accounts and log in securely**.
* The system shall provide **online practice tests with real-time feedback** on scores and progress.
* The system shall allow **students to schedule, modify, and cancel driving lessons online**.
* The system shall track **which instructor, car, and time slot a student is assigned to**.
* The system shall allow **instructors to leave feedback** on student performance after lessons.
* The system shall allow **administrators to manage user accounts**, including adding, modifying, and deactivating them.
* The system shall generate **activity logs to track changes in reservations and user actions**.
* The system shall allow **secure payment processing** for training packages.
* The system shall notify **administrators of security threats or unauthorized access attempts**.

### 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 system shall provide a **web-based interface** accessible through desktop and mobile browsers.
* Users will be categorized into **students, instructors, administrators, and IT staff**, each with different interface access and permissions.
* **Students** will be able to:

1. Take practice exams and view scores.
2. Schedule, modify, and cancel driving lessons.
3. Track lesson progress and read instructor feedback.

* **Instructors** will be able to:

1. View their schedules and assigned students.
2. Leave feedback on student performance after each lesson.

* **Administrators** will be able to:

1. Manage student and instructor accounts.
2. Modify schedules and training package availability.
3. Generate reports on student progress and business activities.

* **IT Staff** will be able to:

1. Oversee system performance and security.
2. Manage user access and resolve technical issues.

* The interface shall be **user-friendly, responsive, and visually intuitive**, with clear navigation menus and dashboards.

### 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 **students will have internet access** to use the online training and scheduling features.
* The system assumes that **instructors will update student progress regularly** after each lesson.
* It is assumed that **students will provide valid personal and payment information** during registration.
* The system assumes that **DMV regulations and test materials will be updated periodically**, requiring integration with external DMV systems.
* It is assumed that **all users (students, instructors, and admins) will have basic computer and mobile navigation skills**.
* The system assumes that **user accounts will be actively monitored** to prevent unauthorized access and misuse.

### 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 be **web-based only**, meaning it will not have a standalone mobile or desktop application at launch.
* The initial version of the system **will not support direct modifications to training packages** by non-developers; updates will require IT intervention.
* The system **relies on DMV data for test updates**, and any delays in DMV updates may affect the accuracy of practice exams.
* Due to budget and resource constraints, **only essential features will be implemented in the first release**.
* The system will have **limited multi-language support at launch**, focusing primarily on English.
* **Peak-time performance may vary** based on the number of simultaneous users until further optimizations are made.

### 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 graph with colorful squares

AI-generated content may be incorrect.