# CS 255 Business Requirements Document

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 a comprehensive system for DriverPass, a company aiming to improve driver training outcomes by offering online and on-the-road services.
* The client, DriverPass, wants a system that supports the delivery of online practice tests, classroom instruction, and driving lessons.
* This system must allow customers to register, schedule, and manage appointments; enable employees to manage operations and data securely; and track training progress.
* The consulting company's goal is to create a user-friendly, cloud-based system that enables seamless access, data integrity, and strong security, while supporting the business needs and growth potential of DriverPass.

### 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 is responding to a societal issue: a significant number of people fail their DMV driving tests due to inadequate preparation. The company believes this is due to a lack of comprehensive, flexible, and convenient training solutions.
* Their proposed solution is a system that offers three levels of training packages combining in-car driving instruction, in-person classroom education, and online practice exams. DriverPass intends to make these services accessible through a web-based system that allows students to learn and practice at their convenience while scheduling and tracking their driving sessions with ease.
* The ultimate goal is to increase students’ success rates on driving tests through better preparation and modern accessibility.

### 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?*

* Enable customers to create accounts and log in securely, with a self-service password reset option.
* Allow customers to register for training packages (6, 8, or 12 hours) and schedule or modify driving appointments online or through customer service.
* Ensure each reservation includes details such as date, time, instructor, car, and pickup/drop-off location.
* Support both online and offline access to certain downloadable materials, while restricting updates to online sessions only to prevent data redundancy.
* Track user activity and changes to appointments, including who created, modified, or canceled each record.
* Provide role-based access control, ensuring IT staff, administrators, and secretaries have permissions appropriate to their roles.
* Enable administrators and IT staff to generate activity logs and printable reports to track system changes and usage.
* Allow flexible management of packages, including the ability to disable packages without removing them entirely.
* Provide automatic updates and notifications from DMV sources to keep practice tests and policies current.
* Offer a cloud-based solution with built-in data backups and security features, requiring minimal technical maintenance from DriverPass staff.
* Display a user interface that clearly shows online test progress (in-progress and completed tests) for each student.

## 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 must be web-based and accessible via all modern browsers (Chrome, Firefox, Edge, Safari).
* The system shall load pages within 3 seconds under normal operating conditions.
* The system should handle concurrent access from at least 1,000 users without performance degradation.
* Practice test content must be updated regularly—preferably monthly—based on DMV source updates.

#### 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 run on a cloud-based platform, compatible with both Windows and macOS for users.
* Backend systems must support integration with a relational database (e.g., PostgreSQL or MySQL).
* The system must support mobile-responsive design for access via smartphones and tablets.
* It must be compatible with common operating systems used by educational and business institutions.

#### 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?*

* Each user must have a unique ID tied to their email and role-based credentials.
* Input forms (e.g., scheduling appointments) must validate inputs and enforce strict data formatting (e.g., date/time, ZIP codes).
* Case sensitivity must apply where appropriate (e.g., passwords).
* The system should notify administrators of repeated failed login attempts or unusual user behavior via audit logs.

#### 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?*

* Admins and IT staff must be able to add, remove, or edit users via a secure admin panel—without code changes.
* The system must adapt to browser and OS updates via regular maintenance patches (at least quarterly).
* Role permissions (admin, secretary, instructor, student) must be editable by IT staff.
* Packages and test contents must be easily updatable without developer intervention.

#### 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 multi-step verification (email confirmation or security question + password).
* All data must be encrypted using HTTPS/TLS for secure client-server communication.
* After 5 consecutive failed login attempts, the account will lock and alert the administrator.
* Users must be able to reset forgotten passwords via a secure email token.
* System must comply with industry-standard security protocols (e.g., OWASP).

### 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 validate user credentials during login.
* The system shall allow customers to select and purchase training packages.
* The system shall allow students to schedule, modify, or cancel driving appointments.
* The system shall track appointment history and modifications by user and timestamp.
* The system shall provide a dashboard showing student progress on practice tests.
* The system shall allow role-based access for admin, IT, instructors, and students.
* The system shall support generation of downloadable reports and logs by admin and IT.
* The system shall enable disabling training packages without permanent deletion.
* The system shall notify users of appointment confirmations or changes via email.
* The system shall update DMV-based practice test content through scheduled automation.

### 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 intuitive and accessible on both desktop and mobile browsers.
* Students must be able to: register, log in, take tests, track progress, and manage appointments.
* Admins must be able to: manage user accounts, view logs, and generate reports.
* IT staff must have extended access to backend operations and permission settings.
* Secretaries must be able to schedule appointments for customers and handle rescheduling.
* Interface shall provide visual indicators of progress and upcoming tasks.

### 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 all users have basic internet access and modern web browsers.
* It is assumed that customer service staff will support users who have trouble with registration or scheduling.
* It is assumed that IT staff are trained to use and maintain a cloud-based system.
* It is assumed that DMV data will be accessible via an API or manual upload.

### 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 does not currently include live video instruction or teleconferencing tools.
* Integration with DMV databases may be limited by third-party availability or APIs.
* Resource constraints may prevent real-time tech support at launch.
* There is a limited budget and 12-week timeframe to develop the initial version.
* Localization/multi-language support may not be available in the first release.

### 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.*

