# 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?*

* DriverPass is currently building an online system that enables students to study for their DMV driving tests. The idea is to have all online content, practice tests, and in-school lesson scheduling available on one site. This will make learning less of a hassle for students and reduce the workload for staff by cutting down on paper, automatically tracking progress, and having everything in one place and accessible at all times.

### 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?*

* Numerous learners fail the DMV test due to a lack of adequate study materials or the unavailability of regular driving practice. DriverPass aims to correct this by providing a comprehensive system that brings students, instructors, and personnel together in one place. Through the system, users will be able to access online courses, practice examinations, scheduling, and report-writing for managers. It will also enable administrative and IT personnel to manage accounts, monitor activity, and ensure accurate data.

### 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 completed system should allow students to create accounts, sit online practice exams, schedule lessons, and track their progress. It should enable instructors to manage schedules and lesson availability of lessons while allowing managers to view activity reports and system performance. Ultimately, the goal is to enhance student pass rates, streamline scheduling, and provide DriverPass personnel with improved insights into running the business on a day-to-day basis.

## 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?*

* Web system running in all updated browsers and on handheld phones.
* Normal usage average page load should be less than two seconds.
* Filling in, editing, or deleting a lesson should take less than one second.
* Practice exams must commence within less than two seconds and show results instantly after its submission.
* The system shall support up to 250 active students and 25 staff members simultaneously without lags.
* Read requests API responses should take less than 500 milliseconds and write requests less than 800 milliseconds to execute.
* At least 99.9% uptime for every month, and off-peak planned off-hours only for maintenance.
* DMV content changes will be reviewed daily and released within one hour if it is approved.
* Updates should be rolled out with zero or minimal downtime.

#### 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 DriverPass system shall execute in the form of a web application that shall serve from Windows and macOS, along with cell phones via typical web browsers. It shall have its backend functioning in the form of a cloud-hosted Linux platform for scalability and robustness. It shall use a relational database such as MySQL or PostgreSQL to keep user accounts, lesson information, and test results stored. It shall also depend on the form of a secure API layer to link the frontend, backend, and scheduling tools.

#### 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?*

* There will be a unique ID for every user to avoid duplication and confusion in accounts. Username and passwords will remain case-sensitive, and all form fields will implement validation to minimize key-punching errors and wrong information. The program automatically highlights conflicting schedules or unsuccessful logins and informs the administrator via an activity report or alert dashboard. This ensures accuracy in the data and fast resolution of issues.

#### 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 permit user roles and permissions additions, changes, and deletions from the admin interface without the intervention of modifying codes. It will also adapt automatically to changes in browsers and mobile operating systems due to responsive web design and periodic compatibility checking. IT administration will have full control to manipulate accounts, reset passwords, check activity, and implement changes to keep the system up to date.

#### 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?*

* All users must log in securely with a safe username and password prior to gaining access to any aspect of the system. Passwords will be stored securely in the database in an encrypted form, and HTTPS with SSL encryption will encrypt all communication from the user to the server. Lockout protection will be part of the system in order to inhibit brute force on trying to log in, which will disable accounts for a number of failed tries. If the user forgets their password, it may be reset securely with an email verification link. Administrator roles will have extra layers of verification in place in order to secure affecting sensitive information and system settings.

### 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 register, allow to log in, and handle personal profiles of users.
* The system shall permit customers to schedule, cancel, and reschedule driving lessons.
* The system shall enable students to write online practice exams and see their results in real-time.
* The system shall enable instructors to revise lesson notes and annotate lesson completion.
* The system shall enable administrators to read reports, observe activity, and control lesson packages.
* The system shall permit the IT administrator to reset accounts, provide for permissions, and control access roles.
* The system shall prepare student performance, schedule history, and instructor activity reports.
* The system shall provide for automatic notifications for appointments, confirmations, and changes in accounts.

### 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 have different interfaces based on user roles. Students will have access to their dashboard for lessons, exams, and progress tracking. Instructors will have a schedule management view to see their lessons and enter notes after each session. The secretary will have tools for scheduling, updating student information, and handling customer inquiries. Administrators will have access to system reports and package settings, while the IT administrator will control user permissions and maintenance. The interface will be web-based, responsive, and easy to navigate on both desktop and mobile devices.

### 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?*

* They assume that all users would have internet and running modern browsers on their device. They also assume that the DMV would keep updated information for written exams and driving requirements. Vehicles and instructors would also be pre-registered in the system prior to using the scheduling function. Lastly, the personnel would undergo training in utilizing the new system prior to its launch.

### 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?*

* There will be no offline support in the system, so all features will necessitate an internet connection. There will only be resources for a small team for development purposes, thus high-end features such as data analysis and phone app inclusion will be delayed and included in subsequent releases. Administrator and IT personnel only will have privileges to alter the roles of users or lesson packages. Designing the system shall address the present objectives of the project without exceeding its original time and budget frames.

### 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 diagram with a graph

AI-generated content may be incorrect.*