# 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 the project is to develop a comprehensive system for DriverPass, a company aiming to revolutionize driver training. This system will offer online classes, practice tests, and streamlined on-the-road training, prioritizing flexibility and efficiency. The overarching objective is to create a user-centric platform with adaptable user roles, robust security measures, and flexibility for different training packages. Ensuring compliance with DMV standards and maintaining a dynamic connection for real-time updates, the system aims to provide a seamless, innovative, and future-ready solution for DriverPass, elevating their driver education services.

### 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 seeks to overhaul driver training by offering a multifaceted system that resolves the shortcomings in existing programs. They aim to address the prevalent issue of inadequate preparation leading to driving test failures by providing accessible online classes, practice tests, and on-the-road training sessions. Their system targets the lack of accessible training resources by ensuring online and offline data access, convenient report downloading, and a streamlined reservation system offering various training packages. Additionally, the system focuses on user management with different access levels, simplified registration processes, and staying updated with DMV regulations. The ultimate goal is to create an intuitive, web-based interface that caters to diverse training needs and fosters a seamless learning experience for individuals preparing for their driving tests.

### 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 DriverPass system aims to offer a comprehensive driver training experience by enabling online classes, practice tests, and on-the-road training with efficient appointment scheduling and detailed reservation tracking. User roles, including Liam, Ian, and the secretary, will have distinct access rights, and customers can manage appointments online, providing necessary information during registration. The system prioritizes security, tracking user activities, and supports flexible training packages. Ensuring compliance with the DMV, it establishes a connection for timely updates and notifications. Operating as a web-based platform over the cloud, the system minimizes technical issues and features a user-friendly interface aligned with Liam's vision, accommodating future enhancements with flexibility for module adjustments based on user feedback or business needs.

## 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 should run in a web-based environment to ensure cross-compatibility with different platforms, such as Android, iOS, and PC, as long as the platforms have access to the internet. The system should run as efficiently as possible, allowing for prompt response to user input with minimal latency. System updates should be performed as needed when new features are developed, bugs in the software are identified and fixed, and to implement improved security patches.

#### 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?*

* DriverPass should use Windows because of user familiarity, existing development tools, and customer support. Windows is widely used, so a majority of users will be familiar with it and have proper access. To support data storage and retrieval, the back end of the system will rely on a robust and scalable database, potentially utilizing technologies like SQL or NoSQL databases based on project requirements and 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?*

* The inputs for user authentication should be case sensitive for the password, but not for the username or email address. The user authentication system should be 100% accurate. For example, if there’s a one letter typo in a user’s password, the authentication system should prompt the user to reenter their password instead of allowing them to log in. The system should inform the admin of any issues immediately after identification. This will allow for swift remediation of the issue to enhance the user’s experience on the platform and protect their information.

#### 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?*

* Opting for a Windows platform for the DriverPass system ensures adaptability and ease of management. The system's architecture should be designed with flexibility and modularity, enabling administrators to add, remove, or modify user accounts without code changes. This approach allows for seamless accommodation of evolving user needs and organizational requirements. Additionally, the system should be agile in adapting to platform updates and technological advancements, leveraging industry-standard development practices and scalable technologies. IT administrators require granular access controls to perform critical tasks efficiently, facilitated by role-based access control mechanisms.

#### 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?*

* Security is a top priority with DriverPass. To log in, users must provide their username and password, free of any typos. The username should not be case sensitive, but the password must be case and space sensitive. Two-factor authentication should be implemented for user login to further verify that the correct person is gaining access to the account. Encryption protocols like HTTPS can secure the connection between the client and server, reducing the likelihood of unauthorized account access. The user authentication system should have a “time out” feature, where the account is locked for a set amount of time when the wrong password has been entered too many times. This will counter “brute force” hacking attempts. The account that experienced a brute force attempt will then be required to update their password once the user gains access to further mitigate the risk of the brute force attempt working on that account in the future.

### 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 integrate all laws and regulations related to driving, ensuring compliance with state and federal laws.
* The system shall provide classes and training materials to driving students.
* The system shall allow for account creation, maintenance, and alterations.
* The system shall have different accesses for administrators, allowing for maintenance and adaptations.
* The system shall have security measures, such as account lock outs and password reset options.
* The system shall maintain a database for user credentials, instructors, instructor availability, and their vehicle information.

### 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 different users include administrators, instructors, and students, and the UI will need to cater to each. Administrators have options to manage user accounts, student information, and lesson details, meaning that the administrator UI will look and function a bit differently than the student or instructor UI. Instructors will need to access schedules, their students’ information, and lesson details. Both the student and instructor should have access to cancel, schedule, or modify lesson times, view the current schedule, see the student information, and see what lessons have been completed. The interface should be accessible by both web and mobile devices to ensure flexibility and a greater means of access to the platform.

### 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?*

* Users have access to stable internet connections for online interactions.
* Users are familiar with basic web browsing and online registration processes.
* Users and instructors are familiar with Windows.
* Users are willing to provide necessary personal and payment information for registration and scheduling.

### 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?*

* Some limitations pose a risk to the user experience with the platform, such as server capacity and bandwidth when multiple users are on the platform at the same time. Other limitations around development, testing, and deployment could arise from multiple sources, such as not having the labor resources to time constraints. The set budget may pose a limitation on the platform, particularly if premium services are requested. Depending on external APIs could pose a risk since there is no internal control over them. Compatibility is another limitation risk, such as issues running on older devices or incompatibility with different browsers.

### 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.*