# 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 as per the interview with the owner of Driver Pass, Liam, and the IT officer, Ian, is to create a comprehensive system for DriverPass. This system is intended to bridge the gap in the market for driving test preparation by providing students with online practice exams and on the road training. The aim of the system is for DriverPass to leverage it to improve their customers' success rates on their DMV driving tests by ensuring that they are well prepared both theoretically and in a practical sense. Liam has stated that their need for a system needs to cover the following; Online classes, Practice tests, and managing on-the-road training.

### 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 driving tests at the DMV by offering a mix of online education and practical diving lessons. Liam has observed a "need for better driving training," indicating a problem within the current teaching methods that DriverPass aims to solve. The required system components include an online platform for practice exams and classes, a scheduling system to be used for on-the-road training, and a management system for customer and training data. These three components are critical for enabling DriverPass to provide a comprehensive training experience for both more theoretical knowledge and practical driving skills.

### 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 to be developed for the client DriverPass should achieve the following tasks as per the interview:
* 1. Enable Online and Offline Data Access: Liam mentions the need to "access my data from anywhere, online as well as offline," which requires a system design that allows for data access and management in various states of connectivity while ensuring data integrity and preventing any redundancy.
* 2. Role-Based Access Control: Ian points out that the system must support "different employees at the company with different rights and roles," which will enable secure and appropriate access to the system's functionalities based on the user's role within the company.
* 3. Activity Tracking and Reporting: Liam emphasized the importance of tracking and reporting on user activities, such as reservations and modifications to maintain accountability and operational clarity. This will include generating activity reports to identify actions taken by users within the system.
* 4. Reservation Management: The system needs to allow customers to make, cancel, and modify reservations for driving lessons online or through direct contact with DriverPass. This also will involve tracking the assignment of customers to drivers, vehicles, and lesson times.
* 5. flexible Training Packages: Liam had expressed the desire for the ability to manage training packages, including disabling, modifying, or introducing new packages to adapt to customer demand and market trends. This will require the system to be designed with flexibility in mind to accommodate future changes.
* 6. DMV Compliance and Updates: The system will need to facilitate staying current with DMV requirements by receiving and implementing updates on rules, policies, and sample questions which will ensure that the training material remains relevant and effective.

## 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 DriverPass system needs to be web-based, as indicated by Ian, emphasizing the need for it to "run off the web, preferably over the cloud." This requires a responsive and efficient system capable of handling multiple users without performance degradation. The system should offer quick response times, ideally under a few seconds for loading content and executing functions. Regular updates are essential for maintaining system security, functionality, and compliance with DMV updates, with minor updates monthly and major updates semi-annually.

### 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 should be platform-agnostic, capable of running on any operating system that supports modern web browsers. The back end will require a database management system (e.g., SQL Server, MySQL) to store and manage data securely. Cloud services should be utilized for hosting to ensure scalability and reliability.

### 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 will rely on unique usernames or email addresses, with inputs not being case-sensitive for logins to reduce user error rates. The system should inform the admin of critical problems immediately through alerts or emails, particularly regarding system integrity, security breaches, or operational anomalies.

### Adaptability

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

The system should allow administrative users to add, remove, or modify user accounts without needing to change the underlying code, enhancing operational flexibility. It must also be designed to accommodate platform updates without significant downtime. IT admin needs full access to the system for maintenance, updates, and user management, as discussed in the interview.

### 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 username/password combination, and the system should support multi-factor authentication for enhanced security. Data exchange between the client and server should be encrypted using SSL/TLS. After multiple failed login attempts, the account should be temporarily locked to prevent brute force attacks. Users forgetting their passwords should have the option to reset them via an email link, ensuring secure and controlled access recovery.

### 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 when logging in.**
* **The system shall allow users to schedule, cancel, and modify appointments for driving lessons.**
* **The system shall track and report user activities and changes made within the system.**
* **The system shall enable the creation and management of training packages, with the flexibility to enable or disable them as needed.**
* **The system shall provide a platform for online practice exams and training content.**
* **The system shall manage user roles and permissions, ensuring appropriate access based on the user's role.**
* **The system shall notify administrators of significant system events or issues.**
* **The system shall update content based on DMV rule changes and notify users of these updates.**

### 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 needs of the interface include ease of use, accessibility, and clarity, catering to various users: administrators, employees, and students. Administrators need full system access for management and updates; employees require limited access for operational functions; students need access to schedules, training materials, and exam platforms. Interaction will primarily be through web browsers on both desktop and mobile devices, ensuring a responsive design that adapts to different screen sizes and input methods.

### 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?*

The design assumes that users have access to internet-connected devices capable of running a modern web browser. It also assumes a level of technological proficiency among users for navigating web-based platforms. Another assumption is the reliability and security of cloud hosting services for system operations.

### 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?*

Potential system design limitations include dependency on internet connectivity for full functionality, which might restrict access in areas with poor internet service. Resource constraints could affect the scope of initial deployment, particularly custom development for certain functionalities. Budget and time constraints may limit the extent of features included in the initial launch, necessitating prioritization based on impact and necessity.

### 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.*

