# 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

* This project is for DrivePass, one of our clients. The purpose is to create a system that provides additional training to increase individuals' passing scores. The system should allow students to take online exams and on-road training before taking the official exam at the DMV.

### System Background

* The client has asked us to build a system that provides additional training for future drivers to pass their driving exams.
* The system will increase the percentage of drivers passing the official exam when ready by creating a space for additional studying and practice.
* The system will require a network device to gain access.
* The system should include Online Courses and Practice exams, Appointment Scheduling, Payment Processing System, Security and Data Protection, and User Management.

### 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, when completed, will provide:
  + Online course, exams, and on-road training scheduling.
  + Choice of three different packages.
  + Allow students to create accounts.
  + Deliver DMV-compliant training materials.
  + Generate reports.
  + Handle payment and billing securely.

## 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?*

* This system must run in a web-based/cloud environment.
* Load and response should be 2 seconds or less.
* Updates should happen monthly and should be synced to the DMV for updated regulations.

Rationale: Performance Requirements capture aspects of the system, such as the system environment, speed, and updates. Allowing the system to run on multiple OSs allows for more student enrollment opportunities. A fast system will ensure efficiency and user satisfaction. Since DriverPass is an additional source of driver training, it is crucial to keep up to date with the DMV's regulations.

#### 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 to-be system will be web-based and should run on Windows, Mac, and Unix browsers.
* The to-be system will require a relational database to store data.
* The to-be system will require a cloud-based tool for back-ups and security.

Rationale: Platform constraints involve limitations and restrictions imposed on the system due to its operating system, as well as any database. The system will run on Windows, Mac, and Unix operating systems. The system will have a “back-end” tool such as a database and cloud storage for accounts, appointments, and logs.

#### 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 to-be system will run a role-based access control.
* The input will be case sensitive.
* The system should inform the admin when failed login attempts exceed the threshold and when there is a cancellation, modification, or

Rationale: Accuracy and Precision details distinctions between users, the type of input validation, and reasoning why an admin would be notified. The system will run a role-based access control to ensure the right information and access are given to the appropriate roles. The Input is case-sensitive, which adds extra protection to the user's credentials. The admin is notified when users fail to log in to their accounts within the set threshold. They should also be notified whenever there are changes to accounts.

#### 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 will allow user changes like add, remove, and modify, without changing the code.
* The system should be flexible, which will allow for easy integration of updates.
* The IT admin should have full access.

Rationale: Adaptability explains how the system adapts to changes and the amount of control the admin has on it. The system should be adaptable to allow for new updates. User changes like adding, removing, and modifying users will ensure an organized system. The admin should have full access to control since they need to manage and maintain the system.

#### 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 are required to create a username and password
* They system should use HTTPS and password hashing for secure data exchange.
* On a brute force attempt, the account should be locked and the admin alerted.
* The system must run a robust access control mechanism.
* If the user forgets their password, they should be able to reset it. A 2FA should be implemented to add an extra layer of security to protect users’ data.

Note: 2FA or commonly known as two-step verification or multi-factor authentication. This security mechanism is used to enhance security by adding an extra layer of defense when logging into your accounts. The purpose is to make it difficult for unauthorized users to access your information with a compromised password.

Rationale: Security is a crucial requirement for a system. This section explains how users log into accounts, how the data is secured, and how to deal with multiple login attempts. Having a robust access control system will ensure that only specific personnel will have access to certain information. This ensures protection from unauthorized access and data breaches.

### 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 users to create, view, and modify driving training reservations.
* The system shall validate the user’s credentials.
* The system shall allow admin access to resetting passwords, and managing users
* The system shall document any modifications of reservations or account changes.
* The system shall sync with the DMV for updated regulations.
* The system shall allow downloading reports in Excel.
* The system shall allow students to track progress.

### 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.)?*

* Admin, Student, IT, Secretary
* Admin – Needs full access to user management, logs, and reports
* IT – Maintaining and modifying their system.
* Students – Needs access to scheduling, test materials, and personal progress tracking.
* Secretary – Needs access to the scheduling tools, students’ profiles, and the main phone line.
* The system interface will be web-based, and desktops and mobile device browsers should be utilized.

### 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?*

* Email/SMS notifications
* Payment processing
* Users have access to IoT
* The DMV provides APIs for updates
* The company has all the resources needed for a smooth process and support

### 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?*

* Real-time vehicle tracking was not included in the document.
* Limited to cloud services due to budget.
* The time of the project is tight
* The system will rely on external systems as the DMV for regulation updates.

### 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.*

