# 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 design document is to create and refine a comprehensive training solution for the company DriverPass. The client, DriverPass, aims to address the lack of effective driver training solutions in the market. They want us to develop a system that provides real road training, online examinations, and resources to prepare the trainees for a driving test.

### 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 offer a comprehensive platform for online practice exams, on-the-road training, and educational resources in one concise package. They are trying to reduce the high failure rate for individuals taking their driving tests at the DMV. DriverPass believes there isn’t an adequate number of training opportunities for these individuals.
* The components requested for inclusion by DriverPass are as follows:

1. Online practice examinations
2. On-the-road training
3. Tools to schedule and manage individuals in the training programs.
4. User authentication and role-based access control
5. DMV requirements integration
6. A user-friendly web interface based on Liam’s sketch.
7. Robust security measures, and automatic password recovery.
8. Reporting and tracking of user activities

### 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 should provide a user-friendly interface that includes online practice exams, scheduling for on-the-road training, and educational resources.
* The system should implement role-based access control, the categorizes the user base into roles such as learners, instructors, administrators, and the company owner.
* The interface should have an intuitive reservation system, empowering users to effortlessly schedule driving lessons online or through alternative channels. The system must also be flexible, allowing for custom training packages that enable the user to add, remove or modify packages as needed.
* The system must be able to track and report user interactions and reservations for management purposes. The system must be integrated with the DMV, allowing for real-time updates on rules, policies, and questions to keep the system in alignment with regulatory changes. Security and scalability will be upheld through the creation of a cloud-based infrastructure, while the visual interface will be meticulously crafted based on Liam's provided sketch—focusing on the test progress and driver notes pages.
* To ensure a secure user experience, automatic password recovery and stringent user authentication processes will be integrated.
* The system will be designed with future expansions in mind, enabling the system to be updated dynamically as the needs of users change and evolve.

## 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 needs to be run as a web-based application that is accessible by many different browsers and devices.
* The system should be able to load pages in less than two seconds and provide efficient responses to user queries.
* System updates and maintenance should be scheduled for non-peak hours (typically late at night on weekends) to minimize user disruption.

#### 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?*

* Ideally, the system will be able to run on cloud-based platforms, allowing it to be easily accessible by a user regardless of their platform.
* The back end will require a relational database, such as MySQL or PostgreSQL, to store user data, reservations, and system records.

#### 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 will have a unique username and be assigned their proper roles in the onboarding process. These usernames will not be case-sensitive and will be used to identify each unique user.
* The system will inform the admin if there is an error or issue that may affect system functionality in real-time.

#### 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 be able to dynamically edit a user’s credentials. Administrators will be able to add, remove, or modify user profiles and permissions without having to edit the system’s source code.
* The system will have a modular architecture that will allow the system to adapt to platform updates in a structured and seamless manner.
* IT administrators will be given full access and control over data, user roles, and the system’s configuration.

#### 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?*

* To login the user will have to provide their unique username and password.
* The system will implement modern strong password policies. (Password must include upper- and lower-case characters, a number, a symbol, etc.)
* The system will implement encryption protocols (e.g., SSL/TLS) to ensure data is exchanged securely between the server and client.
* In the case of a “brute force” hacking attempt, the system will implement an account lockout feature, that will temporarily suspend login attempts after a certain number of failed login attempts. If the account is locked, the user will be informed via email, and suggested to change their password.
* Users will be able to recover or change their forgotten passwords through a secure, user-friendly password recovery process.

### 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 give users the ability to register for an account by providing some personal information, such as their name, email address, payment information, and phone number.
* The system shall verify a user’s password and username when logging in. Validating their login credentials within the system.
* The system shall allow the users to schedule driving lessons online. The user simply needs to specify an available date, time, and pickup location.
* The system shall group users into the appropriate roles, such as learners, instructors, the company owner, and administrators. Each role will be able to access certain kinds of information with the use of role-based access control.
* The system shall offer a reservation system for users to efficiently schedule, modify, or cancel driving lessons.
* The system shall integrate the DMV’s rules, policies, and driving test questions. The system shall regularly update its DMV integration ensuring the users are getting the most up-to-date information from the DMV.
* The system shall track and report user interactions, including reservations and lesson completions, for management purposes.

### 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 user interface needs to be user-friendly and accessible on many web browsers on both desktop and mobile devices.
* Each user role will have their own specific access and functionalities within the interface.
* Users should be able to register, log in, schedule, modify, and cancel driving lessons through the web interface.
* The interface will update and show users with appropriate access progress tracking for online practice exams including test names, time taken, scores, and statuses.
* The user interface will allow the users to view lesson times, comments from instructors and driver notes in an organized and accessible format.

### 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 system assumes that the users have access to the internet and common web browsers.
* The system assumes the users have basic computer knowledge that would enable them to navigate through the system with minimal training.
* The system assumes that the DMV updates their policies regularly online and that the DMV provides APIs or data feeds for integration, allowing for real-time updates.
* It is assumed that the system will be developed on modern web technologies and frameworks.

### 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 may struggle when many users are trying to access the site at once. The system may need to be scaled up in the future to handle this load.
* Budget constraints may affect the depth and speed of system development and integration with external sources.
* Resource limitations, such as developer availability and expertise, may impact the project timeline and features.

### 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 screenshot of a computer

Description automatically generated*