# 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?*

* DriverPass seeks to increase success rates of individuals taking DMV driving tests through offering extensive training services.
* The client requires a system that provides both online practice tests as well as in-person driving lessons for their customers.
* This system will allow clients to make reservations for driving lessons, practice online tests, and track their overall performance/progress.
* DriverPass will offer continuous and seamless data accessibility from any device, including mobile devices, while additionally offering support of downloading reports for offline work.
* Role-based access is a necessity to manage various levels of employee access across the system.

### 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?*

* Problem: Many people are failing their DMV driving tests due to inadequate preparation. DriverPass seeks to bridge this gap through offerings of a comprehensive driver preparation package.
* Solution:
  + The system will allow customers to practice online driving tests, create reservations for on-the-road driving lessons, and track their overall personal progress.
  + Customers will have the flexibility of choice when selecting various driving packages, which bundle in-car training with online practice tests.
  + The system is required to manage customer reservations, lesson times, and driver times to avoid conflicts related to scheduling.
  + Support for multiple user roles, including administrators, customers, and office staff such as a secretary is a key requirement.
  + Security is a paramount feature that will be improved through implementation of role-based access control, routine mandatory password resets, and secure overall account/profile management.
  + Offline use is a key feature required and will be facilitated through downloading of reports for offline use while implementing real-time data synchronization to mitigate redundancy.

### 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?*

* Customers will be allowed to schedule and modify driving lessons online, within the app, or via phone through contact with the office staff.
* Customer progress will be tracked across online driving tests, by including details such as test name, time taken, score, and status (in progress, passed, failed, or not taken).
* Customers will be allowed to reset their passwords as needed in the event they forget their login credentials.
* Administration access much be granted to administrators (such as Ian, the IT officer) to provide full access to manage user accounts, reset passwords, and block users.
* All user activity will be extensively tracked and logged to include information such as who created or modified reservations, while allowing for generation of reports regarding such data.
* Data will be allowed to be downloaded. This would include information such as the reports to be used in offline environments such as Excel.
* The system must accurately integrate with existing external systems, such as the DMV, to remain current on emerging testing rules and regulations.
* Provide flexibility to allow for future scaling and maintenance. Driving packages should be able to be modified (e.g., adding or removal of specific packages).

## 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 will employ a web-based application to ensure accessibility across devices such as computers, tablets, and smartphones. Seamless operation must be ensured across modern internet browsers such as Chrome, Firefox, & Safari.
* The system will respond directly to user input actions in the case of making reservations or retrieving data. These operations should be nearly instantaneous and occur within 2 seconds or less.
* Real-time updates will be applied to the system to accommodate for any user changes, especially regarding reservations, availability, and lessons.

#### 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 will be capable of running on Windows, macOS, and Unix-based systems. In addition, additional compatibility should be incorporated for mobile operating systems like Android and iOS.
* Incorporation of reliable back-end database management systems such as MySQL or MongoDB will be necessary to store and process data requests. Seamless integration is necessary with cloud-based services to ensure availability and reliability. Data backups will further enhance these properties in real-time.

#### 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 inclusion of user access control requiring unique usernames and passwords will ensure end-users are unique. Input will case-sensitive, and auditing or logging tools will be employed to notify administrators of login issues after three failed login attempts.
* The system will notify admins as issues arise, especially related to failed booking reservations or scheduling conflicts with driver’s schedules. This will ensure quality service while reliably offering logging operations for any potential conflicts.

#### 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?*

* Users (including administrators and customers) will be able to be dynamically added, removed, or modified through the user management system without requiring code changes.
* Systems must be scalable and adaptable to ensure platform updates provide compatibility across future operating systems, browsers, or mobile app upgrades.
* Admins will require full access to be able to dynamically modify user roles and permissions. This will ensure security and provide increased adaptability to changing business needs.

#### 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?*

* The login process will incorporate a unique username and password combination. Client and server connections will be secured through SSL encryption, facilitating protected data exchanges.
* To mitigate attacks associated with brute force hacking, accounts will be locked automatically after five consecutive failed login attempts, therein requiring admin intervention for account reactivation.
* Users will have the ability to reset passwords via secure email verification if forgotten.

### 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 during the login process.
* The system shall allow customers to schedule, modify, and cancel driving lessons online.
* The system shall track customer progress across online driving tests, storing information such as test name, time taken, score, and status (in progress, passed, failed, not taken).
* The system shall allow administrators to reset user passwords and block access as needed.
* The system shall store and provide detailed logs of all reservation activities, tracking who made, canceled, or modified reservations.
* The system shall provide downloadable reports, such as reservation schedules and user activity logs, for offline use.

### 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 interface must be intuitive and user-friendly for different user roles, including customers, the secretary, and administrators.
* Customers should be able to book lessons, view their progress, and access practice tests through a clean, responsive web or mobile interface.
* Administrators should be able to manage users, view reports, and handle system settings through a more detailed admin interface.
* The interface should be accessible via web browsers on desktop and mobile devices, ensuring compatibility across various screen sizes and resolutions.

### 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?*

* It is assumed that all users will have access to reliable internet connections and modern devices capable of running web applications smoothly.
* The system will be built with future expansion in mind, assuming that additional packages or features may be added later without disrupting current functionality.

### 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 be limited by the budget, affecting the complexity of features and security measures.
* There may be time constraints that limit the inclusion of future-proof features such as dynamic package modification without developer involvement.
* Platform compatibility issues may arise if customers use outdated operating systems or devices.

### 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 graph with a number of columns

Description automatically generated with medium confidence