# 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?*

* Clients - Liam, owner of DriverPass, and his IT officer, Ian.
* Liam wants to create a web-based application geared toward closing a market void within the driver training sector.
* The company focus is educating students(end-users) to pass their DMV test(s).
* The web-based application should have the ability to schedule driving test(s), study, and take practice written test(s) – as well as the ability to phone in to the DriverPass secretary for scheduling purposes.
* DriverPass is attempting to reduce the rate at which students(end-users) fail their DMV test(s) with their educating web-based application.

### 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?*

* Creating a user-friendly interface that will allow students to navigate the web application.
  + This shall allow the end user to easily navigate the web application.
  + This shall allow the end user to register and create their accounts.
  + End user accounts will have access to view driver/lesson feedback.
* Liam requires full access to the system via either a computer or mobile device with the ability to download reports to work on from home.
* Ian will require access to maintain the system for modifications Liam requests.
* A tracking feature is required, so that Liam can see modifications made to reservations as well as the ability to print out activity reports.
  + This shall include business analytics for Liam to track sales, package performance, appointments, payroll, as well as marketing analytics to track website traffic.
* The secretary will need a role restricted user-friendly system interface and access to schedule appointments with students and drivers.
  + Secretary level permissions to allow access to end user profiles for scheduling, payments, and package adjustments.
* Drivers will need a role restricted user-friendly interface to view their appointments with the ability to input lesson relevant information for student feedback.
  + Driver level profile permissions to allow access to view appointments assigned with the ability to reschedule if needed.
  + This shall have the ability to provide feedback to students scheduled with the driver.

### 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 ability for end-users to register on the web-based application.
* The ability for end-users to login as well as reset their password.
* The ability for end-users to view and enroll in the DriverPass packages with the ability for upgrade.
* The ability for end-users to update their personal information.
* Detail in easy-to-understand terms of how to navigate the interface and how to use the DriverPass platform.
* Implement end-user and staff restrictions per Liam’s instruction.
  + Liam requires full access to the application.
  + Tracking capabilities that will report reservations made, edited, and cancelled with the ability to print activity reports by Liam.
  + Ian requires access with the ability to modify modules, packages, updating, and end user access.
  + Allow the ability for DriverPass to disable packages that are no longer offered.
  + The secretary will have access to end-user profiles, payments, scheduling, and packages.
* The ability for end-users to schedule in-person driving lessons in 2-hour blocks as well as edit and cancel reservations online.
* Integrate DMV updates on the web-based application.
* Create data cells for driver notes:
  + Lesson Time
  + Start Hour
  + End Hour
  + Driver Comments
* The ability to track which driving instructor is assigned to an end-user.
* The web-based application will be hosted on the cloud, as per Liam’s request.

## 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 shall be hosted on a web-based cloud environment.
* The load time shall be less than three seconds.
* The system shall offer feedback should load time exceed three seconds.
* System updates shall be on a monthly basis, and more often if needed.
* The system shall be able to handle a large number of users.
* The system shall be able to handle heavy traffic during peak usage hours.
* The system shall be able to generate practice exams and training schedules quickly.

#### 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 shall be web-based and accessible from any device with an internet connection.
  + This includes mobile, tablet, and desktop browsers.
* The system shall be compatible with all major web browsers.
  + Google Chrome
  + Mozilla Firefox
  + Apple Safari
  + Microsoft Edge
  + Opera
* The system shall be hosted on a cloud based secure server of Liam’s choosing.
* The back end shall store end user information.
* The back end shall store system information.
* Back end functionality will need a web server to handle queries and responses.

#### 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 system must generate accurate practice exams that reflect the content and format of the driving license exam.
* The system must provide precise feedback to students regarding their performance on practice exams and on-the-road training.
* The system shall differentiate access with login credentials.
  + Owner
  + IT Manager
  + Secretary
  + Driver
  + End-users
* Passwords for all users shall be case sensitive.
* Should problems arise, the system administrator will be notified immediately.

#### 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 must be able to adapt to changes in the driving license exam format and content.
  + The system shall gain constant updates from the DMV to remain current with their standards for testing.
* The system must be able to adapt to changes in technology and web standards.
  + Regularly test and monitor the system to identify potential issues or areas that may require updates or modifications
  + Use open-source software and cloud-based platforms that are continuously updated and improved.
* End-user changes shall be made on the management system so as not to change any coding.
  + A user management system shall allow administrators or authorized users to modify user information through a separate UI that is integrated with the main system. The user management system shall include functionality such as adding, removing, and modifying user accounts, resetting passwords, and managing user roles and permissions.
* The IT Manager shall have access to the server for maintainability and any modifications that are necessary.

#### 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?*

* End-user login:
  + The end-user shall enter their username and password, and answer security questions or provide additional authentication factors such as a code sent to their phone. The system shall also verify the user's credentials against a database of authorized users.
* Secure Connection:
  + To secure the connection or data exchange between the client and server, the system shall use secure protocols like HTTPS or SSL/TLS to encrypt data in transit. This shall prevent unauthorized access or eavesdropping on communication.
* Brute force attempt:
  + The system shall limit the number of login attempts a user can make before being locked out.
  + Increase the time between login attempts for a specific user or IP address.
  + The account shall be temporarily locked or disabled until the user can verify their identity and reset their password.
* End-user forgets password:
  + End-users shall reset it by clicking on a "forgot password" link on the login page.
  + The system shall verify the end-user's identity by sending a verification code to their email or phone number, or by asking security questions.
  + The end-user contacts the secretary via phone for further assistance.

### 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 an account and log in securely.
* The system shall provide access to online practice exams for users to prepare for their driving tests.
* The system shall track the progress of end-users in their exam preparation and provide feedback on areas that need improvement.
* The system shall provide on-the-road training for end-users to improve their driving skills.
* The system shall allow end-users to book on-the-road training sessions.
* The system shall provide a way for end-users to view their on-the-road training history and progress.
* The system shall allow end-users to reset their passwords if they forget them.
* The system shall prevent unauthorized access to user information and ensure data privacy and security.
* The system shall record end-user exam scores and provide analytics to track performance.
* The system shall allow end-users to give feedback on the online practice exams and on-the-road training sessions.

### 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.)?*

* Owner:
  + View high-level statistics and analytics about system usage.
  + Manage user accounts and permission.
  + View and manage financial data related to the system.
  + Access a dashboard or summary page with important system information.
* IT Manager:
  + View and manage system configuration settings.
  + Monitor system health and performance.
  + Access a log of system events and errors.
  + Manage system backups and disaster recovery options.
* Secretary/Administrator:
  + Register new students or drivers.
  + Schedule driving lessons or exams.
  + Manage student and driver availability.
  + View and update student progress or test results.
* Driver:
  + Log in to the system to access practice tests and training materials.
  + Provide feedback for students.
  + Contact secretary or support staff.
* End User:
  + Log in to the system to access practice tests and training materials.
  + View their own schedules and appointments.
  + Contact instructors or support staff.
  + Access helpful resources and materials to prepare the end-users for exams.

### 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 a reliable internet connection.
* Users have basic computer literacy skills.
* Users have devices that are compatible with the system's hardware and software requirements.
* Users will be able to navigate the system's user interface easily.
* The cost of hardware and software required to implement the system will not exceed the allocated budget.
* The system's security measures will be sufficient to prevent unauthorized access to sensitive user data.
* Users will be willing and able to provide accurate and up-to-date personal information.

### 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's adaptability to future changes in driving test requirements or technology may be limited.
* The system's performance may be impacted by a high volume of users accessing the system simultaneously.
* The availability and reliability of the internet connection could impact the usability of the system for users.
* The system may require ongoing maintenance and updates to ensure it remains functional and secure.
* Limitations on resources, time, and budget may impact the ability to fully implement all features and functionality desired by the client.

### 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.*

Timeline

Description automatically generated