# CS 255 Business Requirements Document Template

## 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 primary objective of this project is to develop an improved system aimed at training students to excel in their driving tests. Liam, our client, envisions the integration of online training modules and practice tests, along with the provision of real-life training support by the Driver Pass staff.

### 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 desires a system that is not only accessible online but also functions seamlessly in offline mode. Nevertheless, the development team is apprehensive about potential conflicts in saved changes. As per the notes, the development team proposes that the system should operate via cloud-based architecture for the interface. Additionally, security is a paramount concern, necessitating differentiated access privileges for various employees handling sensitive information.

### 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?*

* Once the system is finalized, it should possess the following functionalities:

1. Enable consumers to select packages, with the flexibility to disable already booked packages based on their chosen package.

2. Provide a comprehensive overview of students' online test progress, including ongoing tests and completed ones. The format should include test name, duration, score, and status (indicating "not taken," "failed," "passed," or "in progress").

3. Facilitate access to driver's notes, displaying any comments and the duration of lessons.

4. Allow tracking of driver assignments to consumers, along with the associated time and vehicle. This necessitates effective scheduling and monitoring capabilities within the system.

5. Enable offline access to information for the client, ensuring data availability even without an internet connection.

## 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 should undergo regular updates to promptly address any bugs or security vulnerabilities. Additionally, it must be kept in sync with any changes in DMV guidelines to ensure that DriverPass students stay informed.
* The system must operate via the web to function effectively.
* In terms of performance, the system should exhibit a responsive speed, particularly since it involves sending requests to servers. This speed is crucial at DriverPass, given the need for quick interactions, such as during exams.

#### 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 following prerequisites must be met for the system to operate:

* Compatibility with various web browsers like Chrome, Microsoft Edge, and others.
* Adaptive responsiveness when accessed via mobile devices, ensuring proper screen resizing and fit.
* Backend support for a database to store information effectively.

#### 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 is designed to differentiate between user email and password, ensuring their distinct recognition.
* Input case sensitivity is a vital feature, enhancing user security.
* Additionally, the system is configured to notify the admin if a user repeatedly enters incorrect information.

#### 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 should facilitate user management operations such as addition, removal, and modification without necessitating changes to the underlying code. To achieve this functionality, code should include POST requests and controllers.
* The system remains adaptable to platform updates, ensuring it can accommodate requests made by programmers.
* Regarding IT administrators, they require comprehensive access to various aspects, including user accounts, passwords, and the ability to remove inactive employees.

#### 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?*

* When users, including both students and administrators, log in, they must provide their username and password to gain access.
* To ensure secure data exchange between the client and server, the use of HTTP is mandatory.
* In the event of a "brute force" hacking attempt, the system is designed to alert the administrator after a set number of consecutive failed login attempts, which can be configured within a range of 1 to 10. Specifically, after four failed attempts, two actions will be triggered: the user's login information will become inaccessible, and an alert will be sent to the administrator.
* Should a user forget their password, they can initiate a password reset request. In response, the system will send password reset information to the user's email address, enabling them to proceed with resetting their password.

### 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 will verify the selection made by the consumer from the three available packages as per the client's preference. It will also confirm and store consumer details, including first and last name, address, credit card information, phone number, and state.
* The system will operate exclusively online, although certain study materials may be accessible offline.
* It will ascertain the type of user logging in, distinguishing between students and administrators.
* The system will present the three suggested package types to the client.
* Clients will have the option to deactivate packages if one becomes unavailable, and the disabled packages will be displayed on the consumer interface.
* The system will enable users to reset their passwords if necessary.
* It will display the student's exam progress and scores.
* The system will verify user login information to grant access to the relevant information.
* The system will remain adaptable to any changes made by the DMV.

### 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.)?*

* Homepage
* Examination
* Grade Access
* User Information (password updates, address, etc.)
* Registration (for new users)
* Exam Status
* Instructor Notes and Contact Information Display
* Contact Information Display

### 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?*

We can reasonably assume the following:

* 1. The system will be accessible 24/7.
* 2. Users will primarily consist of DMV students.
* 3. The system will stay current with any changes in DMV guidelines.
* 4. There may be an app version of DriverPass available in the future.

### 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?*

Regarding the project, it's important to note several limitations:

* A reliable and stable internet connection is essential for system access. Without it, user data cannot be updated, added to the database, or retrieved.
* The project is constrained by both time and the budget specified by the client.
* The system's content and exams are aligned with DMV guidelines, limiting the scope of materials.
* Accurate scheduling is crucial due to the client's possession of 10 cars for student use.

### 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 gantt chart with colorful squares

Description automatically generated