# 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?*

* My client, DriverPass, wants to build a system to help students get ready for their DMV driving test. Liam, the owner, is hoping to offer online courses and practice tests that go together along with in-person driving training. The goal is to make learning easier and more flexible for students.

### 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 is looking to make its system accessible anytime, anywhere. They want this regardless of if the users are online or offline, on a computer or mobile device. That flexibility brings up concerns about keeping everything in sync across different platforms. To address that, the development team recommends using a cloud-based solution. This setup makes it easier to manage user access, generate reports for staff, and share exam results with students, while still keeping things secure.

### 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 up and running, it should be able to do the following:
* Let users browse and select training packages while disabling options already booked.
  + Acceptance Criteria
    - Users can view a list of training packages with full descriptions.
    - Packages that are fully booked are marked as unavailable.
    - Users receive confirmation when selection of a package is complete.
  + Operational Details
    - Packages should have capacity limits that disable further bookings.
    - An administrative interface should allow disabling or enabling packages on demand.
* Collect customer details like first name, last name, address, phone number, state, and payment info—including credit card number, expiration date, and security code. Since sensitive data is involved, strong security measures must be applied.
  + Acceptance Criteria:
    - The system captures and stores first name, last name, address, phone number, state, and credit card information in compliance with security standards.
    - Data transmission uses encryption to protect sensitive information.
    - Stored data is accessible only to authorized personnel based on role.
  + Operational Details:
    - Implement two-factor authentication for accessing sensitive data.
    - Regular security audits and compliance checks should be scheduled.
* For students taking online tests, the system should display the test name, time spent, score, and current status (ie: not taken, in progress, failed, or passed).
  + Acceptance Criteria:
    - The test interface shows the test name, time spent, score, and current status.
    - Test completion triggers status updates for the student.
  + Operational Details:
    - Have time-based reminders or alerts for unfinished tests.
    - Regular synchronization with the server to update status.
* Connect with the DMV to pull the latest updates and ensure the information is the most current.
  + Acceptance Criteria:
    - The system receives and integrates updates from the DMV at defined intervals.
    - Administrators receive notifications of new updates available from the DMV.
  + Operational Details:
    - Set scheduled pull requests from the DMV API.
    - Implement safeguards for missed updates due to connectivity issues.
* Allow the client to view and manage data even when offline.
  + Acceptance Criteria:
    - Clients can access a locally stored cache of data with certain offline functions.
    - Full capabilities to update or modify data available when reconnected.
  + Operational Details:
    - Data synchronization to prevent redundancy or data loss.
    - Clearly mark what offline data was modified for easy integration.
* Enable students to schedule driving appointments, including pickup/drop-off locations, assigned driver, and time. This info should be shared directly with the driving instructor.
  + Acceptance Criteria:
    - Students can choose pickup/drop-off locations, assign drivers, and schedule times.
    - Automatic notifications are sent to both student and driving instructor on booking.
  + Operational Details:
    - Define scheduling intervals with times between to prevent overlap.
    - Implement a shared calendar accessible to instructors for updates.

## 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 run in a web-based environment, preferably over the cloud to address issues such as backup and security. This allows for accessibility for any device with an internet connection. The system should perform efficiently, with minimal latency especially for actions like booking, data access, and report generation. The system should be updated regularly, and in accordance with DMV updates or whenever security patches are needed, to verify the practice tests and information are the most current.

#### 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 should support both Windows and Unix for cross-compatibility. The back end will require a database, such as MySQL, to manage user data, bookings, and other information securely.

#### 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?*

* Different users will be identified by role-based access where permissions for administrators, instructors, secretaries, and students are assigned. Usernames and passwords will be case-sensitive for better security. The system should inform the admin of any unauthorized access attempts, data inconsistencies, or when DMV updates or security patches are available.

#### 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?*

* Changes to user roles or permissions should be done through an administrative dashboard without requiring code changes, due to changing business needs. The system should have compatibility layers or APIs to incorporate updates from host platforms. The IT admin needs full access to manage accounts, reset passwords, and configure system settings.

#### 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 will be required to provide a valid username and password, with optional two-factor authentication for extra security. Secure data exchange can be obtained using TLS/SSL encryption. For brute force attempts, the account should be temporarily locked, and the admin notified. If a user forgets their password, there should be a secure password reset 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 validate user credentials when logging in.
* The system shall allow users to browse and book training packages, while marking fully booked packages as unavailable.
* The system shall collect customer information, including name, contact details, and payment information, while safeguarding secure data.
* The system shall allow students to view their test progress, including test name, time spent, score, and current status.
* The system shall facilitate real-time scheduling of driving appointments including details such as pickup/drop-off locations, driver, and time.
* The system shall track and log user actions for reservations, changes, and cancellations for reporting.
* The system shall enable the administrator to manage user roles and permissions.
* The system shall connect to the DMV for real-time updates on driving rules and test requirements.

### 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 needs to be user-friendly, intuitive, and accessible from both mobile and web browsers.
* Different users include administrators, IT officers, secretaries, instructors, and students.
  + Administrators need to access system settings, view reports, and oversee user roles and access.
  + IT officers need full access for system maintenance and account management, including resetting passwords.
  + Secretaries should schedule appointments for customers and manage existing bookings.
  + Students should book lessons, take practice tests, and view test and appointment details.
* Users will interact primarily through a web browser but should also have a design appropriate for mobile use.

### 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 users have access to a stable internet connection for the full functionality and updates.
* It is assumed that students and customers are familiar with basic computer and internet usage to book and manage the accounts.
* The system design assumes updates will be automatically handled over a cloud service.
* There is an assumption that all data privacy and security regulations are met for sensitive 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?*

* One limitation may be the dependency on third-party API connections, which could affect synchronization if there are issues with connectivity.
* Resource constraints could limit how customizable the system is in adding or removing training packages without additional development required.
* The timeline and budget for the project may affect comprehensive testing and optimization.
* The technology selected must support the wide range of devices and operating systems being used but might encounter issues with users who fail to maintain an updated system or browser.

### 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

AI-generated content may be incorrect.