# 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 is a startup focused on helping individuals prepare for and pass the DMV driving test by offering both theoretical and practical training.
* The client requires a comprehensive digital system that facilitates user registration, online coursework, driving lesson scheduling, and logistical management.
* The platform must manage both administrative and customer-facing functions, ensuring seamless access and experience across desktop and mobile platforms.
* Core functionality includes scheduling, user progress tracking, secure payments, and data reporting, all supported in a cloud environment.

### 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 reduce the high failure rate among first-time DMV test takers by offering structured, accessible, and effective training.
* The system must support the day-to-day operations of the company, covering student onboarding, training coordination, and performance tracking.
* A role-based security model is essential, allowing different access levels for CEOs, IT staff, secretaries, and users.
* Integration with external data sources (e.g., DMV updates) is necessary to ensure lesson materials and test simulations stay current.
* The platform should support exporting key data (e.g., customer info, training progress, scheduling) to Excel or similar formats.
* Cloud hosting is preferred to ensure scalability, real-time access, platform compatibility, and data security.

### 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?*

What the System Should Be Able to Do When Completed

The system should:

* Facilitate user registration (online and phone-based) and purchasing of training packages.
* Offer interactive access to online course materials and DMV-style practice exams, while tracking progress in real-time.
* Provide a flexible scheduling system for students to book or reschedule in-car driving sessions, either online or through staff assistance.
* Automatically assign available trainers and vehicles to each scheduled session.
* Implement granular access control, restricting functionalities based on user roles (e.g., admin vs. student).
* Maintain logs for all system actions (e.g., booking changes, account edits) for auditing and accountability.
* Enable cross-platform access and permit secure data exports.
* Allow students to reset passwords securely via multi-step verification.
* Give administrators tools to manage course offerings (e.g., enabling/disabling packages).
* Stay up to date with DMV changes through manual or automatic content updates.
* Visually track test and training progress, with timestamps and completion statuses.
* Allow instructors to log comments and feedback for each lesson session.
* Support external hosting with automated backups and cloud-based security protocols.
* Include a public contact form for general inquiries and support.
* Securely handle sensitive data (including payment info and personal details) in compliance with applicable regulations.

Measurable Tasks to Include in the System Design

* **User Management**
* Secure account creation and login processes.
* Multi-factor authentication for password recovery.
* User roles clearly defined: Admin, IT, Secretary, Student.
* **Package and Course Management**
* Administrative dashboard for enabling/disabling lesson packages.
* Define training content, hours, and pricing for each package.
* **Scheduling Module**
* Dynamic booking interface, accessible by students and staff.
* Calendar-based UI with conflict detection for vehicles, trainers, and time slots.
* **Trainer & Vehicle Assignment**
* Intelligent assignment of available instructors and cars.
* Tracking of resource usage for reporting and availability.
* **Activity Logging & Reporting**
* System log for tracking changes (who booked, modified, or canceled).
* Exportable reports for performance analysis or auditing.
* **Online Learning & Test Module**
* Course access with interactive learning materials.
* Test environment simulating DMV exams with instant scoring and feedback.
* History of test attempts with progress charts.
* **Instructor Notes & Lesson Tracking**
* Ability for trainers to log session feedback and timestamps.
* Archive of notes linked to individual students for review.
* **Data Handling & Export**
* Exportable student data, schedules, and performance summaries.
* Formats: Excel, CSV.
* **DMV Integration**
* Ability to upload or sync with DMV rules and updates.
* Notification system for administrators upon new content availability.
* **Cloud Infrastructure**
* Web-accessible platform, optimized for desktop and mobile devices.
* Automatic backups and secure data storage via cloud provider.
* **User Interface Design**
* Clear display of test and training progress, categorized by completion status.
* Accessible and responsive UI for form submissions, contact pages, and student dashboards.
* **Security and Compliance**
* Encryption of all sensitive information including payment data.
* System built to comply with relevant privacy laws and data protection standards (e.g., GDPR, CCPA).

## 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 receive regular updates to address any bugs or potential security vulnerabilities. In addition, any modifications to DMV guidelines must be reflected immediately so DriverPass students remain updated.
* The system must operate as a web-based application to function effectively.
* The system should maintain reliable performance with fast response times, especially at DriverPass where users will be actively taking exams and submitting requests to servers

#### 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?*

* System should run on computer and mobile browsers
  + Microsoft Edge
  + Google Chrome
  + Mozilla Firefox
  + Safari
* If the website is accessed on a mobile device, it should automatically adjust its layout and content to fit the screen size appropriately.
* The back end requires a database to store user and system information.

#### 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 will differentiate between the users via email and password during authentication.
* Input fields should be case-sensitive to enhance security and protect user accounts.
* If a user enters incorrect login information multiple times, the system should generate an alert for the administrator.

#### 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?*

* Any modifications to user information should be handled through the backend system without requiring changes to the application code.
* The system should accommodate platform updates by implementing requests submitted by programmers.
* IT administrators must have comprehensive access, including managing user accounts, resetting passwords, and removing 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?*

* Both users and administrators must authenticate with a valid username and password to gain access to the system.
* The system connection should be secured using HTTPS along with a two-factor authentication process.
* In the event of a brute force attack, the system should alert the administrator after a configurable number of failed login attempts (up to admin discretion). After four unsuccessful attempts, user login access should be temporarily disabled, and an alert should be sent to the administrator.
* A “Forgot Password” feature should notify the administrator and allow the user to reset their password through a secure link sent to their verified email address.

### 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 register online or via phone.
* The system shall enable users to purchase, view, and manage training packages.
* The system shall provide students with access to online course materials.
* The system shall offer DMV-style practice exams for students.
* The system shall track and display student progress in real-time.
* The system shall allow students to book and reschedule in-car driving sessions online or through staff assistance.
* The system shall automatically assign available trainers and vehicles to each scheduled session.
* The system shall restrict access to specific functionalities based on user roles, such as student, instructor, or administrator.
* The system shall maintain logs of all actions, including booking changes and account modifications, to support auditing and accountability.
* The system shall be accessible across multiple platforms, including web and mobile devices.
* The system shall allow secure export of data in supported formats.
* The system shall provide a secure password reset function using multi-step verification.
* The system shall store and process sensitive data, including payment information and personal details, in compliance with applicable regulations.
* The system shall allow administrators to enable, disable, and manage course offerings.
* The system shall implement manual or automatic updates to reflect changes in DMV guidelines.
* The system shall visually track student progress for tests and training sessions, including timestamps and completion status.
* The system shall allow instructors to record comments and feedback for each lesson session.
* The system shall support external hosting with automated backups.
* The system shall implement cloud-based security measures to protect user data.
* The system shall include a public-facing contact form to handle general inquiries and support requests.

### 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.)?*

**Needs of the Interface**

* Must be user-friendly and intuitive for all users.
* Support cross-platform access (web browsers, tablets, mobile devices).
* Enable secure authentication with role-based access control.
* Allow users to efficiently perform their tasks (booking, accessing materials, managing accounts).
* Provide real-time feedback and notifications (exam results, booking confirmations, alerts).
* Support data visualization for tracking progress and completion status.
* Ensure secure handling of sensitive data, including personal and payment information.

**Different Users for the Interface**

* *Student*: Takes courses, practices exams, books driving sessions.
* *Instructor*: Provides lessons, gives feedback, monitors student progress.
* *Administrator (Admin)*: Manages system settings, user accounts, courses, and system logs.
* *General Public*: Accesses contact form and general information.

**User Needs and Functionalities**

* Student
  + Register and purchase training packages.
  + Access online course materials and DMV-style practice exams.
  + Track progress and test results.
  + Book or reschedule driving sessions.
  + Reset password securely.
* Instructor
  + View assigned student sessions.
  + Record comments and feedback for lessons.
  + Monitor student progress and completion statuses.
* Administrator
  + Manage user accounts (add, remove, update users).
  + Enable/disable course offerings.
  + Monitor system logs and audit actions.
  + Receive alerts on security issues.
  + Update content to reflect DMV guideline changes.
* General Public
  + Submit inquiries via a contact form.
  + Access general information about the program.

**User Interaction with the Interface**

* Accessible via web browsers on desktops and laptops.
* Mobile-responsive design for smartphones and tablets.
* Optional phone assistance for registration or session booking through staff support.

### 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?*

**Unaddressed Areas in the Design**

* Offline access to course materials or session booking.
* Accessibility features for users with disabilities (e.g., screen readers, keyboard navigation).
* Specifics of payment processing, including gateways, currency handling, and refunds.
* Performance requirements such as speed, load times, and system capacity.
* Error handling and recovery processes (e.g., server downtime, failed transactions).
* Detailed notifications and reminders (email, SMS, push notifications).
* Advanced analytics and reporting for administrators.
* Multi-language support for non-English users.

**Assumptions Made About Users and Technology**

* Users have access to modern web browsers on desktops, tablets, or mobile devices.
* Students and instructors have reliable internet connections for real-time updates.
* Users have basic computer literacy to navigate online systems.
* Administrators and instructors are familiar with managing accounts, schedules, and feedback online.
* The system will be responsive and functional across common devices and screen sizes.
* Sensitive user data (personal and payment information) will be securely handled according to regulations.
* The system is designed for a moderate number of simultaneous users typical of a driving school platform.

### 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?*

* DriverPass operates with 10 vehicles, each of which requires regular maintenance to remain operational.
* Internet connectivity issues may occur, potentially delaying updates and information synchronization.
* The limited number of vehicles restricts the number of customers who can purchase and schedule driving packages simultaneously.
* Some users may not have up-to-date devices or technology, affecting system accessibility and performance.
* Meeting all operational and system requirements within DriverPass’s budget and timeline may present challenges.

### 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 diagram with multiple colored boxes

AI-generated content may be incorrect.*