# 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?*

* **Purpose**: To build a comprehensive system for DriverPass to provide online and on-the-road training for driving tests.
* **Client**: DriverPass, represented by Liam (owner) and Ian (IT officer).
* **Client's Vision**: To create a system that supports better driver training through online classes, practice tests, and on-the-road training, addressing a market need for improved driving test preparation.

### 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?*

* **Client's Needs**:
  + Access data from any computer or mobile device, online and offline.
  + Download reports and work on them at home using tools like Excel.
  + Ensure data security with different access rights and roles for employees.
  + Track user activity, including who made, modified, or canceled reservations.
  + Allow customers to make reservations for driving lessons online or through office visits.
  + Customize and manage different driving lesson packages.
  + Enable customers to reset their passwords automatically.
  + Ensure compliance with DMV updates.
  + Provide a user-friendly web interface, preferably cloud-based, with clear test progress and driver notes.
  + Collect customer information including personal and payment details.
* **Problem to Fix**:
  + Lack of effective driver training options.
  + Need for an integrated system to handle online and offline training services, data access, and security.
* **System Components**:
  + User Roles: Owner, IT Officer, Secretary, Customers.
  + Modules: Reservation system, user tracking, data security, package management, customer account management, DMV compliance integration, reporting tools, web interface.
  + Technical Requirements: Cloud-based system, secure data storage, password reset functionality, scalable design for future features.

### 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?*

* **System Capabilities**:
  + Allow data access from multiple devices and locations.
  + Enable secure data handling with role-based access controls.
  + Track and report user activities and reservation changes.
  + Support online reservations and appointment scheduling.
  + Manage driving lesson packages and customization options.
  + Provide automated password reset functionality.
  + Integrate with DMV for compliance updates.
  + Offer a user-friendly, cloud-based web interface with specific features for test progress and driver notes.
* **Measurable Tasks**:
  + Implement user authentication and role-based access control.
  + Develop the reservation and scheduling system.
  + Create modules for tracking user activities and generating reports.
  + Design the web interface with necessary features and user flows.
  + Develop package management and customization functionalities.
  + Integrate password reset and security measures.
  + Connect the system with DMV for real-time updates.
  + Ensure data can be downloaded and worked on offline.
  + Regularly test and update the system to maintain compliance and security standards.

## 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?*

* **Environments**: The system needs to run in both web-based and mobile application environments.
* **Speed**: The system should respond to user actions within 2 seconds to ensure a smooth user experience.
* **Update Frequency**: The system should be updated quarterly for regular maintenance and feature enhancements. Critical security updates should be applied immediately as needed.

#### 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?*

* **Platforms**: The system should run on major operating systems including Windows, macOS, Linux, iOS, and Android.
* **Back-End Tools**:
  + The back end requires a robust database system such as MySQL or PostgreSQL to manage user data, test results, and other application data.
  + The application should also utilize a web server (e.g., Apache or Nginx) and an application server framework (e.g., Node.js or Django).

#### 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?*

* **User Differentiation**: Users will be distinguished by unique usernames and email addresses.
* **Case Sensitivity**: Input fields like usernames will be case-insensitive, while passwords will be case-sensitive for security reasons.
* **Admin Alerts**: The system should inform the admin of a problem immediately via email and a dashboard notification when there are critical issues such as server downtime, failed transactions, or security breaches.

#### 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?*

* **User Management**: The system should allow admins to add, remove, and modify user accounts through an admin interface without changing code.
* **Platform Updates**: The system should be compatible with automatic updates to underlying platforms. This might involve using containerization (e.g., Docker) to ensure consistency across different environments.
* **IT Admin Access**: IT admins need full access to system settings, user management, and logs. They should be able to perform tasks such as backups, restores, and system monitoring.

#### 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?*

* **Login Requirements**: Users must log in with a username and password. Two-factor authentication (2FA) should be an optional feature.
* **Secure Connections**: All data exchanges between the client and the server should be encrypted using SSL/TLS.
* **Brute Force Protection**: Implement account lockout mechanisms after five unsuccessful login attempts and notify the user via email.
* **Password Recovery**: Users should be able to reset their password via a secure email link or security questions.

### 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 schedule driving lessons.
* The system shall enable instructors to update lesson availability.
* The system shall track and record user progress and test results.
* The system shall provide users with reminders for upcoming lessons via email and SMS.
* The system shall allow users to provide feedback on lessons.

### 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.)?*

* **Interface Needs**: The interface should be intuitive and user-friendly.
* **User Roles**:
  + **Students**: Schedule lessons, view progress, receive notifications.
  + **Instructors**: Manage availability, view scheduled lessons, record progress.
  + **Admins**: Manage users, oversee system performance, handle escalations.
* **Interaction Platforms**: Users will interact through web browsers and mobile applications.

### 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?*

* All users have reliable internet access.
* Users have basic digital literacy skills.
* The organization has the necessary budget for initial development and ongoing maintenance.

### 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 might not support older browser versions or mobile devices.
* Development and deployment might be constrained by budget and available resources.
* Time constraints may limit the scope of features implemented in the initial release.

### 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.*

