# 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?*

* The main objective of this project involves creating an online and physical driver training management platform for DriverPass.
* DriverPass was established by Liam to combat the poor DMV test results of students through his complete online learning platform and practice assessment system and hands-on driving instruction.
* The system needs to provide users with account creation and course enrollment capabilities and lesson scheduling and progress tracking features, and also provide employees with the ability to handle bookings and appointment changes and note down driver feedback.
* It requires administrative features for Liam and Ian to handle user account administration and password reset functions and activity reporting and system protection.
* It will have both online access and restricted offline data access which enables Liam to obtain reports and analyze data from any location.
* Aims to create an efficient and secure platform which provides easy access to driver education and scheduling tools to enhance student achievement and operational performance.

### 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?*

The system at DriverPass will unite three essential components which include online education and practice tests and hands-on driving instruction for student drivers. The project exists because current driver education tools fail to deliver effective results which leads to numerous students not passing their DMV driving tests. Liam plans to create a unified platform which enables students to sign up and select their training packages and book driving sessions with instructors.

* It will provide different training packages which offer different numbers of in-car sessions and students can access either in-person instruction or digital resources.
* Users can create and change their bookings through the system while the office secretary maintains the ability to create manual bookings for students who walk in or call for appointments.
* Functionality to track which driver receives which vehicle at what time slot for each customer.
* Administrative support will be needed for multiple user roles with different permission levels which include the owner and IT officer and secretary and driving instructors.
* Reporting capabilities which monitor user actions and reservation records and performance statistics.
* Integration into the DMV database to receive automated updates about policy changes and test content.

The DriverPass system functions as a unified platform which unites student and staff management with scheduling and online learning and reporting functions within a single cloud-based system.

### 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 main purpose of the DriverPass system is to create an automated platform which enables students to learn while companies operate efficiently through accessible data management systems. The finished system will let students perform online registration and access educational content and practice tests and arrange or change their driving lessons without difficulty. To achieve this, the following tasks will be needed:

* The system enables staff members who work as secretaries to arrange appointments for customers who want to book sessions either face-to-face or by telephone.
* The system provides administrators with full control to monitor user accounts and generate reports and track system activities and security permission settings.
* The system needs to maintain accurate data tracking which allows users to monitor all modifications and reservations and cancellations through timestamped user logs.
* The system needs to run efficiently on cloud infrastructure while providing continuous access to reports and business data for Liam from any location.
* The system needs to be flexible to support future growth by enabling the addition or removal of training packages and implementation of new DMV regulations.

The DriverPass system will achieve its objectives by optimizing business operations while delivering improved customer satisfaction and better driver training results.

## 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 DriverPass system needs to function as a web-based application which operates from a secure cloud platform to provide access for customers and employees. Users need to access the platform through any standard web browser running on desktops or laptops or mobile devices without requiring additional software installations.

* Optimization for quick loading times and responsive performance because it supports online classes and practice tests and scheduling functions under heavy user traffic conditions.
* Support simultaneous user connections without performance delays when student numbers reach their highest points during peak hours.
* Updates should run according to a predetermined schedule which takes place during periods of low usage to avoid service interruptions.
* Updates will include bug fixes together with feature enhancements and DMV data content synchronization.
* Perform automatic backup procedures to protect data from loss while users receive advance alerts about scheduled maintenance periods.
* The DriverPass system requires efficient operation and reliable performance to deliver seamless user interactions with fast response times and uninterrupted access for all system users.

#### 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 DriverPass system functions as a cloud-based web application which supports Windows and macOS operating systems and iOS and Android mobile platforms.
* The system will operate from a dependable web server which maintains automated backup systems and duplicate infrastructure and ensures continuous operation.
* The application development will use standard web technologies including HTML and CSS and JavaScript and a secure server-side framework for user authentication and data processing.
* The system requires a relational database management system like MySQL or SQL Server to handle user management and lesson scheduling and progress tracking and payment processing.
* The system needs to establish secure API connections to external data sources including DMV updates.
* The web-based application DriverPass operates independently from local hardware requirements because users need only an internet-enabled device and web browser for access.

#### 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 DriverPass system requires precise management of user information and scheduling data and course progress to operate dependably.

* The system will identify each user account through secure login credentials which establish separate identities for students and staff members and administrative personnel.
* The system implements input validation at all points to stop users from making mistakes during data entry such as entering wrong dates or duplicate records or invalid credit card numbers.
* The system needs to check student registration information for correct formatting of name and address and contact details while preventing duplicate entries in the database.
* The lesson scheduling system needs to operate with exactness to prevent students from sharing the same car and instructor and time slot.
* The system needs to record timestamps for all activities so administrators can monitor who made each change and cancellation.
* The system needs to send instant alerts to the IT administrator whenever it detects data conflicts or login problems or unauthorized system modifications.
* The system's precise operations will protect DriverPass operations from scheduling mistakes and data inconsistencies.

#### 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 design of DriverPass needs to include flexibility features which will support business expansion and technical environment changes in the future.
* The system needs to let administrators perform user management tasks including user addition and modification and permission adjustments through a non-code based interface.
* The system needs to enable owners to turn training packages on or off independently from other system operations.
* The application needs to use scalable architecture which enables it to handle platform updates and service integrations including DMV data connections and third-party payment processing systems.
* The system update process should be supported through modular code structures which enable new feature implementation without interrupting current system operations.
* The IT administrator needs complete access to system configuration options and user administration tools and logging features to perform security updates and solve technical problems.
* The system's adaptability features will make DriverPass sustainable because they enable the platform to evolve with business requirements and technological progress.

#### 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?*

* The DriverPass system places security at its highest priority because it handles critical user information which includes personal data and payment details and system authentication credentials.
* Users need to authenticate their access through a protected login system which requires individual usernames and passwords.
* The system protects passwords through database encryption and uses SSL/TLS encryption for secure client-server data transmission to maintain transmission integrity.
* The system implements role-based access control to limit user actions according to their roles so administrators and instructors and students access only required information for their work.
* The system implements a security feature which locks user accounts for a specified time after multiple failed login attempts while sending alerts to IT administrators.
* Users can reset their passwords through a secure email verification system when they forget their current password.
* The system will perform scheduled security assessments and software updates to protect against vulnerabilities while keeping detailed logs of user activities for both security monitoring and tracking purposes.
* The implemented security measures will create a protected environment which meets all requirements for user trust and system compliance.

### 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 an account, log in securely, and access their dashboard.
* The system shall allow customers to purchase one of several training packages, each offering a combination of in-car training hours, in-person instruction, and access to online classes and practice tests.
* The system shall allow instructors and the secretary to manage appointments, assign vehicles and instructors, and record driver comments and lesson outcomes.
* Administrators shall be able to manage user roles, reset passwords, and generate reports showing system activity, user progress, and financial transactions.
* The system shall connect to DMV data sources to automatically update course materials and practice test questions when regulations change. It shall also provide an interface for Liam to download reports in formats such as Excel for offline review.
* Finally, the system shall record and timestamp all user actions for accountability, ensuring that every reservation, modification, and cancellation can be traced to the responsible user.

### 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 user interface of the DriverPass system will operate through web technology to deliver simple and clear access from desktops through to smartphones and all devices in between.

* The system interface will present separate entry points which match the user roles of students and instructors and the secretary and administrators.
* Students will access their dashboard to view their lesson schedule and online class progress and practice test results through status indicators showing "not taken" and "in progress" and "failed" and "passed."
* The system must include registration and payment forms together with contact information fields and a messaging system for students to contact DriverPass staff.
* The secretary interface contains scheduling functions for appointment management and student data entry through input forms.
* The instructor interface enables them to see their student list and modify lesson times and add driving notes or comments.
* The administrator dashboard extends beyond the others to include user account management and activity tracking and report generation capabilities.
* The system design requires an easy-to-use interface which maintains consistent visual elements and fast loading speed to deliver a seamless user experience.
* The system interface needs to achieve a perfect balance between user-friendliness and operational capabilities to support both technical and non-technical users who need to perform their tasks effectively.

### 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?*

The development of DriverPass requires users to have reliable internet access and modern web browsers for platform interaction.

* The system requires users to have fundamental computer skills to use the platform for account registration and online learning without needing help from technical support.
* The system depends on the company maintaining continuous contact with the DMV to receive automatic updates about driving regulations and test materials and policy modifications.
* The system requires students to enter correct personal details and payment information when registering and staff members need to update their schedules and records regularly.
* The system relies on the selected cloud hosting provider to deliver sufficient storage capacity and maintain continuous operations while protecting user data.
* The system development process requires DriverPass to dedicate appropriate time and financial support for testing and ongoing system maintenance.
* The system's operational reliability and functionality depend on these established assumptions.

### 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 DriverPass system will enhance business operations yet users need to understand its restricted capabilities.

### The system requires internet access to function properly which will result in performance delays and access issues for users who experience unstable or poor network connections.

### The small business nature of DriverPass restricts its ability to implement extensive system features because of limited financial resources and available personnel.

### The system depends on third-party cloud hosting services which could restrict users from expanding their data storage needs and bandwidth usage and system customization options.

### The system faces restrictions in DMV database integration because external organizations enforce policies that limit data sharing beyond DriverPass's authority.

### The web-based system needs continuous maintenance to protect against security threats and handle browser updates and software dependencies.

### The system provides administrative flexibility, but developers or system analysts must assist with major structural modifications that involve new module additions or database architecture changes.

### The project team will handle these limitations effectively through its defined scope and accessible resources.

### 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.*

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