# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

**What is the purpose of this project?**

* The purpose of this project is to develop a system for DriverPass, which aims to provide driver training services, including online courses, practice tests, and on-the-road training for customers.

**Who is the client and what do they want their system to be able to do?**

* DriverPass wants the system to enable users to take online driver education, complete practice tests, and register for on-the-road training. Users can schedule, modify, and track their lessons.

### System Background

**What does DriverPass want the system to do?**

* Provide online classes and practice tests for driver training.
* Integrate with the DMV and notify users of any updates to rules, policies, or sample questions for the driving tests.
* Allow customers and certain DriverPass employees to schedule, modify, and track driving lessons with instructors and cars based on available appointment packages.
* Generate detailed, downloadable reports for tracking site activity.
* Allow DriverPass to disable appointment packages and prevent customers from registering.

**What is the problem they want to fix?**

* Mitigate the high failure rate of DMV driving tests by offering self-service training options.

**What are the different components needed for this system?**

* Online learning platform for classes and tests.
* Reservation system for scheduling and managing lessons.
* User authentication and role-based access for security and access control.
* Activity tracking for logging changes and generating reports.
* Lesson scheduling system for managing lesson times, instructors, and cars.
* Compliance management to keep training materials updated with DMV requirements.
* Cloud infrastructure for secure, redundant, scalable data storage and access.
* Secure data management for storing client’s personal and payment details.
* Interface allowing users to review their online test progress and statistics, driver’s notes, personal information, and driver/student photographs

### Objectives and Goals

**What should this system be able to do when it is completed?**

* Provide online driving classes and practice tests.
* Allow customers to schedule, modify, and cancel driving lessons with instructors.
* Track lesson progress and generate downloadable reports (preferably in .csv format).
* Support role-based access for different employees (e.g., IT officer, secretary).
* Integrate with the DMV and notify users of updates to ensure training content is always current.
* Allow customers to register and input personal/payment information securely.
* Allow DriverPass to disable packages and prevent customers from registering for appointments.

**What measurable tasks need to be included in the system design to achieve this?**

* Create an online education system to support classes and practice tests with scoring.
* Develop scheduling, modifying, and canceling functionality and tracking session details.
* Create a feature for generating detailed activity and progress reports
* Configure role-based access and varying permissions (e.g., admin access for the IT officer).
* Implement secure handling of customer data, including personal and payment information.
* Develop a system for receiving and applying updates to training materials based on DMV regulations.

## Requirements

### Nonfunctional Requirements

#### 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 accommodate an increasing number of users while maintaining low response times and high availability.
* The system should ensure quick load times and seamless transitions between modules to enhance user engagement and experience.

#### 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 run on a cloud platform over the web to minimize the time required for managing software infrastructure, data backups, and security.

#### Accuracy and Precision

**How will you distinguish between different users? Is the input case-sensitive?**

* The system will distinguish between different users by their roles and privileges, such as:
  + Liam (Admin): Full access to all data and reports, with the ability to track changes and generate activity reports.
  + Ian (System Admin): Full administrative access, including password resets and blocking user access when necessary.
  + Secretary (Employee): Responsible for making reservations, answering phones, and managing appointments, with limited access compared to Ian.
  + Customers (User): Can book, cancel, or modify their driving lessons online and track their test progress.

**When should the system inform the admin of a problem?**

* If there are failed login attempts or password reset requests.
* If there is any unauthorized access attempt or suspicious activity.
* If there are system errors, issues with scheduling, or reservation conflicts.
* If there are any problems with data synchronization when offline data is updated once the system is online.
* If there are updates or changes from the DMV regarding rules, policies, or test materials, the system should notify the admin to ensure that training materials are up to date.

#### 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 shall allow administrators to add, remove, and modify users through an administrative interface without changing the code.
* The system shall adapt to platform updates through modular architecture and external integrations, ensuring seamless functionality.
* The IT admin shall have full access to manage system infrastructure, configure settings, monitor performance, and ensure security, but not modify course content or grades unless authorized.

#### 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 need a valid username/email and password, with optional multi-factor authentication for added security.
* **Securing Connection and Data**: Use HTTPS with SSL/TLS encryption and securely hash passwords.
* **Brute Force Protection**: After multiple failed attempts, temporarily lock the account and notify the user/admin for further investigation.
* **Forgotten Password**: Admins can provide a password reset option where users can receive a time-limited link to reset their password via email.

### Functional Requirements

* The system shall allow users to create and manage their accounts online.
* The system shall allow customers to make, modify, and cancel driving lesson reservations online.
* The system shall allow DriverPass to make, modify, and cancel driving lesson reservations on behalf of customers.
* The system shall provide a way for users to reset their passwords automatically if they forget them.
* The system shall allow DriverPass to generate and export activity reports showing details about reservation actions (made, modified, canceled).
* The system shall track driving lesson sessions, associating them with a specific driver, car, customer, and time.
* The system shall allow DriverPass to disable specific lesson packages when no longer offering them.
* The system shall integrate with the DMV to receive updates regarding rules, policies, and sample questions.

### User Interface

**What are the needs of the interface?**

* Display user progress (test name, time taken, score, status).
* Display Customer information (special needs, first name, address, student photo, etc.)
* Show driving instructor feedback (lesson times, driver comments).
* Provide input forms for customer information (e.g., name, address).
* Include a "Contact Us" page for communication.
* Allow customers to schedule, modify, and cancel lessons.
* Allow customers to select lesson packages.

**Who are the different users for this interface?** **What will each user need to be able to do through the interface?**

* **Customers** will need to view test progress, schedule/manage lessons, select packages, update personal info, contact the company.
* **Employees** need the ability to schedule/manage lessons, fill in customer info and contact customers.
* **Administrators** need to manage system data, generate reports, block/reset accounts, view customer progress/notes.
* **Instructors** need to view assigned lessons, lesson times, and provide feedback.

**How will the user interact with the interface?**

* The user should be able to access the DriverPass application through mobile devices and web browsers

### 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?*

* Users have an email or phone number
* Users have access to internet
* The system can integrate with the DMV’s data source via APIs or another standard method
* Payment processing will be handled through a secure third-party service

### 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?*

* Limited offline capabilities for the DriverPass application.
* Limited customization options for lesson packages or scheduling opportunities
* Dependency on External DMV Integration
* Limited customer support options (live chats, AI, etc, out of scope given current time constraints)

### Gantt Chart

A graph of a task

Description automatically generated with medium confidence