# CS 255 DriverPass Project Business Requirements Document

## System Components and Design

### Purpose

The purpose of this project is to develop a comprehensive, user-friendly system for DriverPass, a driver training company. The client, DriverPass, led by owner Liam and IT officer Ian, wants a robust online platform that will support both classroom and in-car training for students preparing for their driving tests. They envision a solution that allows customers to book driving lessons, access online practice tests, and track their training progress. Additionally, the system should enable DriverPass employees to manage appointments, track lesson and test results, and provide detailed reporting. Security is essential, with different access levels for various user roles.

### System Background

DriverPass seeks to fill a gap in the driver education market by providing a system that improves training and increases students' chances of passing the DMV driving test. The main problem they want to address is the high failure rate of individuals taking their driving exams, which they attribute to insufficient training. To tackle this, DriverPass requires a system that integrates various components:

* **User and Account Management**: To register customers, manage passwords, and enable different user roles and permissions.
* **Scheduling System**: For customers to book, modify, or cancel driving lessons, either online or via in-office appointments with a secretary.
* **Training Package Management**: Offering flexible packages with different levels of in-car and online instruction.
* **Progress Tracking and Reporting**: Allowing students to view their test scores, lesson attendance, and overall progress; also enabling administrators to track user activity and reservations.
* **Integration with DMV Requirements**: Ensuring compliance with DMV updates, including testing content changes.
* **Cloud-Based Hosting and Interface**: A web-hosted, cloud-based interface that provides secure data access, backup, and an intuitive layout for all user types.

### Objectives and Goals

Upon completion, the DriverPass system should enable smooth, efficient operations for both customers and staff. Key measurable tasks and goals for system design include:

* **Customer Self-Service Options**: Customers can create accounts, manage reservations, and reset passwords independently.
* **Role-Based Access Control**: Implementing secure, role-specific permissions for admins, IT officers, secretaries, drivers, and customers.
* **Automated Progress Tracking**: Real-time tracking of student test results, progress status, and completed lessons, viewable through a dashboard.
* **User Activity and Reservation Tracking**: Logging all user actions (e.g., bookings, cancellations) to provide detailed reports, ensuring clear accountability.
* **DMV Content Update Notifications**: Automated notifications of DMV content updates, allowing administrators to review and integrate changes.
* **Cloud-Based Operation with Minimal IT Burden**: A secure, web-hosted system with managed data backup and security features to reduce in-house technical maintenance.

With these goals, DriverPass will have a streamlined, scalable solution to provide high-quality, efficient training experiences for their customers.

## 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

* The system needs to operate as a **web-based platform** accessible through browsers on desktops, tablets, and mobile devices.
* It should handle multiple concurrent users without noticeable delays, ensuring response times are under **2 seconds** for most operations.
* The system must allow for regular updates, including security patches and feature enhancements, every **quarter** or as needed.

#### Platform Constraints

* The system must run on common operating systems, including **Windows**, **macOS**, **iOS**, and **Android**, with a web-based interface eliminating platform-specific dependencies.
* The back-end requires a **cloud-based relational database** (e.g., MySQL, PostgreSQL) to manage user accounts, reservations, and session tracking efficiently.

#### Accuracy and Precision

* User accounts will be distinguished by **unique usernames (email)**, and input fields such as passwords and usernames will be **case-sensitive**.
* The system should inform the admin of potential problems (e.g., failed logins, unauthorized data changes) through **real-time notifications** or scheduled reports.

#### Adaptability

* Admins can **add, remove, or modify users** through a dedicated interface without modifying code.
* The system must adapt to platform updates (e.g., browser or OS updates) via **cloud-based patches**.
* IT admins require full access to system settings, account recovery options, and permissions management.

#### Security

* Users must log in with a **username and password**, with optional **multi-factor authentication (MFA)** for enhanced security.
* All client-server communications should use **end-to-end encryption (SSL/TLS)** to protect data exchange.
* The system should lock user accounts temporarily after **5 failed login attempts** and alert the admin of potential brute-force attacks.
* Password reset functionality will be accessible via **email verification links** or admin intervention.

### Functional Requirements

* The system shall validate user credentials during login.
* The system shall allow users to register for an account, make, modify, or cancel reservations.
* The system shall assign trainers and vehicles automatically based on availability.
* The system shall track the progress of online tests, lessons, and user activities.
* The system shall generate detailed activity and compliance reports.
* The system shall allow admins to manage user roles and permissions.
* The system shall notify users of DMV updates regarding rules or tests.

### User Interface

* **Users:**
* **Admin:** Manage users, generate reports, track system activity.
* **Secretary:** Schedule reservations, manage accounts, access driver/student info.
* **Customer:** Book, cancel, or modify lessons, track progress in tests and training.
* **Interface Needs:**
* A web-based interface accessible on mobile and desktop browsers.
* User-friendly forms for scheduling, test progress tracking, and user account management.
* Admin dashboards for monitoring activities and generating reports.
* Contact information and driver notes displayed prominently.
* **Interaction:**
* Accessible via browsers with responsive design for seamless use across devices.

### Assumptions

* Users will have access to the internet and modern browsers (e.g., Chrome, Safari, Firefox).
* Training packages and DMV compliance updates will be straightforward to integrate.
* Secretaries will manage in-office and phone reservations efficiently.

### Limitations

* The system will not include **real-time driving session tracking** (e.g., GPS).
* Customization of training packages (adding/removing) will require developer assistance.
* Budget constraints may limit advanced features, such as voice recognition for user interactions.
* Initial deployment may focus on core features, with scalability planned for future updates.

### Gantt Chart

A graph with different colored squares

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