CS 255 Business Requirements Document

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# System Components and Design

## Purpose

* The purpose of this project is to develop a comprehensive driver training system for DriverPass.
* The client, DriverPass, wants the system to provide students with access to online practice exams and on-the-road training to better prepare them for driving tests.
* The system should enable data access from anywhere, support secure data handling, and include detailed tracking and logging features.

## System Background

* DriverPass wants the system to offer online classes, practice tests, and on-the-road driving lessons.
* The problem DriverPass wants to fix is the high failure rate of driving tests at the DMV due to inadequate training.
* Components needed:  
   - Online data access and offline capabilities  
   - Secure user management and role-based access control  
   - Detailed tracking and logging of user activities  
   - Online reservation system for booking driving lessons  
   - User-friendly interface for managing lessons and accessing training materials  
   - Compliance with DMV requirements

## Objectives and Goals

* The system should:  
   - Enable users to access and download data both online and offline.  
   - Provide secure login and role-based access control for different employees.  
   - Track user actions such as reservations, cancellations, and modifications.  
   - Allow customers to book, modify, and cancel driving lessons online.  
   - Offer flexible, customizable driving lesson packages.  
   - Ensure compliance with DMV rules and allow updates based on new regulations.  
   - Provide a user-friendly, cloud-based interface.

## Requirements

### Performance Requirements

* The system needs to run as a web-based application.
* It should perform efficiently with minimal latency.
* Regular updates should be applied to ensure compliance and security, preferably monthly.

### Platform Constraints

* The system should be platform-independent, accessible on Windows, macOS, and Linux.
* The backend requires a robust database, such as MySQL or PostgreSQL, to support data storage and retrieval.

### Accuracy and Precision

* Users will be distinguished by unique usernames and role-based access control.
* Input should be case-insensitive for usernames but case-sensitive for passwords.
* The system should inform the admin immediately if there are login issues or potential security breaches.

### Adaptability

* The system should allow user management (add/remove/modify) through an admin interface without changing the code.
* It should adapt to platform updates through regular maintenance and updates.
* The IT admin needs full access to manage users, reset passwords, and ensure system integrity.

### Security

* Users need a username and password to log in.
* Secure the connection using SSL/TLS encryption.
* Implement account lockout mechanisms after multiple failed login attempts to prevent brute force attacks.
* Provide a password reset option via email verification if the user forgets their password.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall allow users to book, modify, and cancel driving lessons online.
* The system shall track and log user actions, including reservations and modifications.
* The system shall provide access to online classes and practice tests.
* The system shall generate detailed activity reports for administrators.
* The system shall ensure compliance with DMV requirements and update accordingly.

### User Interface

* The interface needs to be user-friendly with clear navigation.
* Different users:  
   - Administrators (manage system and users)  
   - Secretaries (manage appointments)  
   - Customers (book lessons, access training)
* Interaction:  
   - Primarily through a web browser  
   - Mobile-friendly design for accessibility on smartphones and tablets.

### Assumptions

* Assumptions:  
   - Users have basic computer literacy.  
   - Users have access to internet-enabled devices.  
   - The system will be primarily used in a stable internet environment.

### Limitations

* Limitations:  
   - Dependence on internet connectivity for full functionality.  
   - Budget constraints might limit the scope of advanced features.  
   - Time constraints could affect the thoroughness of testing phases.  
   - Initial rollout may have limited customization options.

### **Gantt Chart**

Key:

* **Yellow (Highlight):** Task duration, showing the time period when the task is actively being worked on.
* **Light Yellow:** Task dependencies, indicating time periods where work may overlap or require coordination between tasks.
* **Purple (Background):** Weeks and dates, providing a clear timeline for the project.

