# CS 255 Business Requirements Document Template

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## System Components and Design

### Purpose

The purpose of this project is to design and implement a comprehensive system for DriverPass, our client. DriverPass aims to revolutionize driver training by offering online classes, practice tests, and on-the-road training. The system should provide a user-friendly, flexible, and secure platform accessible from any device, catering to both customers and internal users.

### System Background

The system will consist of integrated modules working in concert to provide a cohesive online driver training platform. This includes an Online Training Portal delivering interactive multimedia courses and tests through responsive browser-based interfaces. A Scheduling Engine facilitates appointment booking between customers and instructors, integrating with third-party calendar systems.

Progress Dashboards visualize student completion rates and scores to showcase advancement. Billing & Payments functionality handles payment processing and compliance. Customer Profiles provides a centralized repository for account details like licensing data. Native Mobile Applications extend accessibility across iOS and Android devices while tapping device capabilities. The Cloud Infrastructure utilizing leading providers supports elastic scalability across global regions to meet demands. Finally, baked-in Security Protocols spanning encryption, access controls, and auditing uphold integrity.

### Objectives and Goals

* Enable online access to driver training materials, including classes and practice tests.
* Facilitate on-the-road training appointments, allowing users to schedule, modify, or cancel sessions online.
* Implement a secure and flexible system accessible from any device for Liam, IT Officer Ian, and Secretary.
* Provide role-based access control, granting different rights to different employees based on their responsibilities.
* Incorporate a robust tracking mechanism for reservations, changes, and cancellations with clear accountability.
* Support varied driving lesson packages, each with specific durations and inclusions, ensuring flexibility.
* Implement a secure registration process, capturing customer information, and enabling password recovery.
* Establish connectivity with DMV for real-time updates on rules, policies, and sample questions.
* Develop a cloud-based system with a user interface aligned with Liam's vision, including progress tracking and driver notes.
* Deliver a system that minimizes technical issues, allowing DriverPass to focus on business operations.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system shall operate seamlessly in both online and offline environments to facilitate ubiquitous data access.
* The system's online interactions shall exhibit rapid response times, ensuring an optimal and frustration-free user experience.
* Real-time online data access and updates shall be prioritized to minimize potential data redundancy issues.

#### Platform Constraints

* The web application is designed for cross-browser compatibility across evergreen modern browsers on both desktop and mobile devices by leveraging portable frameworks like React and responsive principles. Serverless cloud platforms provide the backend.
* DynamoDB handles flexible structured data storage while S3 stores media assets. Aurora RDS also enables relational data models. Lambda functions implement business logic while APIs gate data access. Route53, CloudFront CDNs, and auto-scaling groups deliver robustness.

#### Accuracy and Precision

* User identification shall be designed as case-sensitive to uphold precision and avoid potential user conflicts.
* The system shall promptly notify the administrator of any attempted data modifications, prioritizing data integrity.

#### Adaptability

* Administrative privileges shall be required for changes to user profiles, promoting controlled adaptability.
* The system shall demonstrate seamless adaptation to platform updates without compromising overall functionality.

#### Security

* User login authentication shall employ a secure process involving both username and password.
* Encrypted data exchange between the client and server shall ensure a secure communication channel.
* Robust measures shall be implemented to address and counter "brute force" hacking attempts.
* Password recovery functionality shall be provided for users experiencing forgotten password issues.

### Functional Requirements

1. **The system shall provide a user-friendly online interface for customer registration and account management.**
   * Users, including Liam, Ian, and the secretary, shall have the capability to register new customers over the phone, capturing crucial details such as name, address, phone number, and payment information.
   * The system shall facilitate online customer registration, allowing users to securely input and manage their information.
2. **The system shall support driving lesson reservations, cancellations, and modifications.**
   * Customers shall be empowered to make reservations online, specifying the desired day, time, and package.
   * The system shall enable customers to seamlessly cancel or modify their driving lesson reservations, both online and through alternative communication channels.
3. **The system shall track and display driving lesson information, including session times, assigned drivers, and user progress.**
   * The system shall present a clear and comprehensive activity log, showcasing details of reservations, modifications, and cancellations.
   * Users, including Liam, shall have access to detailed reports on user activity, promoting transparency and accountability.
4. **The system shall integrate with the DMV for real-time updates on rules, policies, and sample questions.**
   * The system shall establish a robust connection with the DMV, ensuring timely updates and alignment with current DMV requirements.
   * Users shall receive notifications regarding updates and changes, enabling them to maintain compliance with evolving DMV regulations.

### 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.)?*

1. **Administrator Interface**
   * System Owners: Access to comprehensive reports, activity logs, and tools for modifying or disabling driving lesson packages.
   * Administrators: Full access to all accounts for maintenance, modification, and user support.
   * Secretary: Access to intuitive appointment scheduling, customer registration, and basic reporting tools.
2. **Customer Interface**
   * Online registration form: Provides customers with an intuitive platform to input personal information, address, phone number, and payment details.
   * Appointment scheduling: Empowers customers with a user-friendly interface for making, modifying, or canceling driving lesson reservations.
   * Progress tracking: Displays user progress in a visually informative manner, including completed tests, in-progress tests, and scores.

### Assumptions

1. **System Flexibility for Future Features**

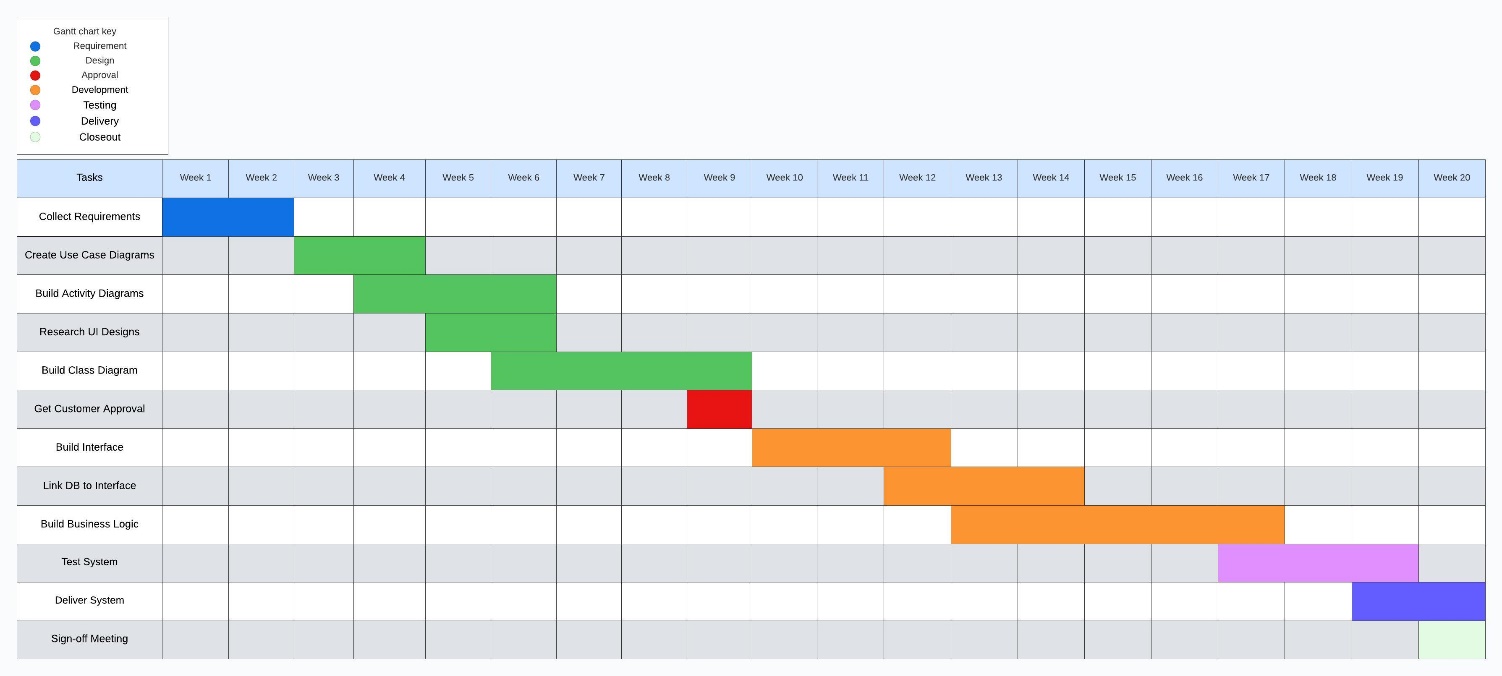
* It is assumed that non-developers may require developer intervention for the seamless addition or removal of modules to accommodate future features.

1. **Secure Online Access**
   * The assumption is that online access to data remains secure, with modifications or updates restricted to online sessions to prevent potential data redundancy.

### Limitations

1. **Future Feature Customization**
   * Recognizing that the system may require additional development to enable non-developers to easily add or remove modules for future feature customization.
2. **Online Access Dependency**
   * Acknowledging that online access is pivotal for full system functionality, with certain features having limitations when accessed offline.

### Gantt Chart

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