# CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The purpose of this Business Requirements Document (BRD) is to outline the functional and non-functional requirements for DriverPass, an online platform designed to assist individuals in preparing for their driver's license tests. This document serves as a foundational guide for stakeholders, developers, and designers involved in the project. The primary objective is to create an intuitive and effective system that enhances user learning and test preparedness.

### System Background

* DriverPass aims to address common challenges faced by individuals preparing for their driver's tests by offering a comprehensive and user-friendly platform. The platform integrates instructional content, practice tests, and interactive learning tools to enhance users' understanding and confidence in passing their exams. The system will provide structured learning materials, real-time assessments, and personalized progress tracking

### Objectives and Goals

* Improve pass rates for driver's license applicants by providing effective and engaging study materials.
* Enhance user experience through interactive learning methods.
* Offer a scalable and accessible online platform.
* Provide data analytics for performance tracking and user improvement.
* Ensure secure and reliable user authentication and data management.

### Nonfunctional Requirements

#### Performance Requirements

* The DriverPass system shall function as a web-based platform, with potential future development for mobile applications. The system must provide a responsive user experience, ensuring that interactions occur within a maximum of two seconds. To maintain operational efficiency, the system shall support at least 1,000 concurrent users without a noticeable decline in performance. Additionally, regular updates shall be scheduled on a biweekly basis to address software bugs, enhance security, and introduce new features as necessary.

#### Platform Constraints

* The system must be compatible with widely used operating systems, including Windows, macOS, and Linux. It shall operate effectively on modern web browsers such as Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. Furthermore, the system shall require a secure, cloud-based database to store and manage user information, ensuring both scalability and data integrity.

#### Accuracy and Precision

* To maintain data integrity, the system shall validate user input, preventing the submission of incomplete or incorrect information. It must distinguish between different user roles, such as students and administrators, ensuring appropriate access to system functionalities. Additionally, the system shall monitor for potential errors or unauthorized access attempts, generating alerts for administrators in cases of security breaches or authentication failures.

#### Adaptability

* The DriverPass system shall allow for the seamless addition, removal, or modification of user accounts without requiring modifications to the system’s source code. The system must be designed to adapt to software and platform updates without significant disruptions to functionality. IT administrators shall be granted full access to system configurations, including user management and security settings, to facilitate efficient system maintenance.

#### Security

* User authentication shall be implemented through a secure login process requiring an email address and password, with the option to enable multi-factor authentication for enhanced security. All sensitive user data shall be encrypted to prevent unauthorized access. In the event of multiple failed login attempts, the system shall temporarily lock the user’s account and require identity verification before access can be restored. Additionally, the system shall include a secure password recovery mechanism utilizing email verification to assist users who have forgotten their credentials.

### Functional Requirements

* The system shall validate user credentials upon login to ensure secure access and prevent unauthorized usage.
* The system shall allow users to register by providing an email address and password, with an optional integration for social media login.
* The system shall provide a structured curriculum that includes instructional lessons, quizzes, and interactive driving simulations.
* The system shall generate practice tests modeled after real DMV exam formats to enhance user preparedness.
* The system shall track user progress and provide performance analytics, including scores, completion rates, and areas for improvement.
* The system shall allow users to bookmark lessons and review previous test attempts for continued learning.
* The system shall enable administrators to manage user accounts, modify course content, and oversee system performance.
* The system shall deliver immediate feedback on incorrect responses in practice tests to facilitate learning.

### User Interface

The system's interface must be designed to accommodate a diverse user base, ensuring accessibility and ease of navigation across different platforms, including web browsers and mobile devices.

* Students will require the ability to:  
  + Access and navigate structured course materials efficiently.
  + Engage with interactive elements such as quizzes, simulations, and video lessons.
  + Track their learning progress and receive performance feedback.
  + Bookmark lessons for future review and retake practice tests.
  + Receive personalized recommendations for study improvements.
* Administrators will require the ability to:  
  + Monitor student progress and engagement levels.
  + Modify, update, or add new course materials as necessary.
  + Manage user accounts, including password resets and access control.
  + Oversee system performance and address any technical issues.

### Assumptions

*Several assumptions have been made regarding system design, user expectations, and technological requirements:*

* *Users will have consistent internet access to engage with course materials and practice tests.*
* *Students will have basic computer literacy, allowing them to navigate the system without extensive training.*
* *The platform will be primarily web-based, with potential future expansion into a dedicated mobile application.*
* *System updates and maintenance will be performed periodically to enhance functionality and security.*
* *Users will rely on email-based communication for password recovery and system notifications.*

### Limitations

As with any system, there are inherent limitations that may affect performance, scalability, and functionality:

* **Technical Limitations**: The initial system will be web-based, limiting offline accessibility. Any future mobile application development will require additional resources.
* **Resource Constraints**: Development time and budget may restrict the scope of features included in the initial release. Advanced functionalities such as AI-driven tutoring or real-time driving simulations may not be available at launch.
* **Scalability Challenges**: The system must be designed to handle an increasing number of users, but server capacity and data storage limitations may impact performance during peak usage times.

### Gantt Chart

