# CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The purpose of the DriverPass system is to provide students with a comprehensive platform to prepare for their driving tests. This system aims to improve pass rates by offering access to online practice exams and additional learning resources. By combining theoretical and practical tools, DriverPass helps students become more confident and skilled drivers.

### System Background

* DriverPass aims to create a system that allows customers to easily access online driver training resources and schedule on the road lessons. The main issue they want to address is the high failure rate among driving test takers due to inadequate preparation. This system will help users practice for their tests online and book practical sessions, increasing their readiness for the exam. Key features of the system include a user friendly interface for registration and lesson scheduling, a secure database for managing customer information and training records, role based access for employees, and both online and offline data access for management and reporting needs.

### Objectives and Goals

* The system should allow customers to register, access online driver training resources, and schedule on the road lessons through a user friendly interface.
* The system shall enable DriverPass staff to manage customer data, track reservations, and generate reports on user activity to monitor business performance.
* The system needs to provide secure, role based access to ensure only authorized employees can modify or access sensitive information.
* The system must be adaptable, allowing DriverPass to disable or adjust training packages as needed.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system should be web based, accessible via standard browsers on both desktop and mobile devices, ensuring flexibility and ease of use for all users.
* The system should load pages and execute tasks within 5 seconds to provide a smooth user experience.
* Updates to the system should occur at least once a quarter to ensure that the system stays current with any new requirements, security patches, or feature enhancements.

#### Platform Constraints

* The system should be compatible with major operating systems, like Windows, macOS, and Linux, to allow a wide range of user devices.
* The system will rely on a cloud based database, PostgreSQL, to store and manage user data, training materials, and scheduling information, ensuring scalability and accessibility.
* The back end will require database management tools and a secure server environment to maintain data integrity and security.

#### Accuracy and Precision

* Each user will be uniquely identified by their unique username or email address, ensuring that data and permissions are assigned correctly.
* Input fields, especially those used for authentication, will be case sensitive to enhance security and prevent unauthorized access.
* To guarantee quick action on possible problems, the system should automatically notify the administrator if there are repeated unsuccessful login attempts, inconsistent data, or unauthorized access attempts.

#### Adaptability

* The system should allow administrators to add, remove, or modify users without requiring code changes, ennabling a user management interface for efficient updates.
* IT administrators will need full access to manage user accounts, monitor system performance, and make adjustments to system settings to maintain functionality and security.

#### Security

* Users will be required to log in with a unique username and password combination to access the system.
* All data exchanges between the client and the server will be encrypted using SSL/TLS protocols to ensure secure communication.
* If there is a brute force hacking attempt, the account will be temporarily locked after a specified number of failed login attempts, with an alert sent to the admin.
* In case a user forgets their password, the system will provide a secure password reset option via email, allowing users to regain access without compromising security.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall allow users to create accounts.
* The system shall provide customers with the ability to schedule, modify, and cancel driving lessons online.
* The system shall enable administrators to manage user accounts, including adding, removing, and modifying user permissions.
* The system shall allow customers to access online training materials and track their progress.
* The system shall generate and display reports for administrators on customer activity and lesson schedules.
* The system shall provide notifications for system updates or important scheduling changes to both users and administrators.

### User Interface

* The interface needs to be user friendly, allowing seamless navigation for both customers and administrators. It should be visually clear to reduce the learning curve for new users.
* Different users of the interface include customers, administrators and support staff. Each user group has specific needs:
  + Customers: Should be able to register, log in, access online training materials, schedule driving lessons, and view their progress and test results.
  + Administrators: Need the ability to manage user accounts, monitor activity, handle scheduling, and access reporting tools to track lesson usage and performance.
  + Support Staff: Should be able to assist with scheduling, manage customer interactions, and view account details as necessary.
* The interface should be accessible via both web browsers on desktops and mobile devices, ensuring flexibility for users to interact with the system from any location.

### Assumptions

* Assuming that users, both customers and staff, have access to devices with internet connectivity to interact with the system, as the platform is primarily web based.
* Customers are expected to have basic technical skills to navigate the online interface, register, and schedule appointments without assistance.
* Assuming that DriverPass administrators and IT staff will manage system updates and handle any issues that arise with minimal external support.
* The system is assumed to have enough data storage and processing power in the cloud to support concurrent users and maintain performance standards.

### Limitations

* The system’s performance may be limited by internet connectivity and bandwidth, especially for users accessing it from remote areas with poor internet infrastructure.
* Budget constraints may limit the level of advanced security features or high end server resources, potentially affecting scalability and security.
* Time constraints for development might restrict the addition of certain desirable features, such as advanced reporting tools.
* There may be a limit to the system's compatibility with upcoming technological advancements, requiring routine maintenance to accommodate modifications in web browsers or operating systems.

### Gantt Chart

