# CS 255 Business Requirements Document

## System Components and Design

### Purpose

*What is the purpose of this project? Who is the client and what do they want their system to be able to do?*

* Design a system for DriverPass which is a company that prepares students for their driving exams
* DriverPass wants the system to provide online classes, practice exams, and scheduling for driving lessons
* The system should support different user roles such as customers, admin, IT
* The system should be web based and cloud hosted for accessibility and security

### System Background

*What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?*

* The problem DriverPass aims to fix is students failing the DMV driving exams due to outdated study materials or lack of hands-on experience
* The system must combine inline practice tests, online courses, in person lessons, and on the road training packages
* The key components are the online platform, the scheduling system, user account management, reporting system, and DMV integration

### Objectives and Goals

*What should this system be able to do when it is completed? What measurable tasks need to be included in the system design to achieve this?*

* The system should:
  + Allow students to register, pay and access lessons online
  + Allow customers to schedule, cancel, and modify reservations
  + Automatically assign cars and instructors to driving appointments
  + Support the package options offered
  + Maintain secure and reliable operations with clear role base access
  + Notify DriverPass when DMV updates are pushed

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

*What environments (web-based, application, etc.) does this system need to run in? How fast should the system run? How often should the system be updated?*

* The system will:
  + Be web-based and accessible from a browser and mobile device
  + Handle multiple users without performance issues
  + Provide real time updates for reservations and account changes
  + Be updated regularly to remain within DMV policies

#### Platform Constraints

*What platforms (Windows, Unix, etc.) should the system run on? Does the back end require any tools, such as a database, to support this application?*

* The system will run on cloud infrastructure
* The system will be browser based and compatible with windows, macOS, iOS, and android
* The backend will use a database to store customer, scheduling, and reporting data

#### Accuracy and Precision

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

* The system will distinguish between users through unique credentials and role-based accounts
* The system should validate all inputs
* The system should notify admin of errors or conflicts

#### Adaptability

*Can you make changes to the user (add/remove/modify) without changing code? How will the system adapt to platform updates? What type of access does the IT admin need?*

* The system should allow admin to add, modify or disable packages as needed without code changes
* The system should adapt to cloud platform updates automatically
* The IT officer should have full control over user accounts and access management

#### Security

*What is required for the user to log in? How can you secure the connection or the data exchange between the client and the server? What should happen to the account if there is a “brute force” hacking attempt? What happens if the user forgets their password?*

* The system should:
  + Require users to log in with unique credentials
  + Encrypt all sensitive data
  + Lock accounts temporarily after multiple failed attempts
  + Allow customers to reset forgotten passwords automatically

### Functional Requirements

*Using the information from the scenario, think about the different functions the system needs to provide. Each of your bullets should start with “The system shall . . .” For example, one functional requirement might be, “The system shall validate user credentials when logging in.”*

* The system shall allow customers to register with personal and payment details
* The system shall allow customers to schedule, cancel, and modify reservations
* The system shall automatically assign a driver, vehicle and time slot to each reservation
* The system shall allow administrators to manage packages
* The system shall track activity logs
* The system shall generate and export reports
* The system shall provide students with access to online practice exams and courses
* The system shall notify DriverPass when DMV policies are updated
* The system shall provide secure password reset functionality

### 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.)?*

* The interface shall be web-based and mobile-accessible
* Customers will register, purchase packages, schedule/cancel lessons, access practice tests
* Owner/Management will view business reports, track activity, disable/change packages
* IT officer will have full administrative control, reset/block accounts, and manage permissions

### Assumptions

*What things were not specifically addressed in your design above? What assumptions are you making in your design about the users or the technology they have?*

* Students will have reliable internet access
* DMV will provide an API or other method to send updates when released
* Cloud vendor will handle backups and security measures
* Instructors and cars will be available when customers need them

### Limitations

*Any system you build will naturally have limitations. What limitations do you see in your system design? What limitations do you have as far as resources, time, budget, or technology?*

* Adding or removing modules requires developer assistance
* System initially will be in English
* Budget and resource restrictions may occur for advanced features
* Schedule and project scope are limited by staff and time allocation

### Gantt Chart

*Please include a screenshot of the GANTT chart that you created with Lucidchart. Be sure to check that it meets the plan described by the characters in the interview.*

