# CS 255 Business Requirements Document

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## 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?*

* The purpose of this project is to create a system for the client to help train students with driving to pass their tests and get their licenses.
* The client is a company called DriverPass owned by a man named Liam.
* Liam wants the system to have the ability for their customers to create accounts, access training courses, schedule driving training with instructors, modify reservations and information, and take practice tests.

### 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?*

* Liam found a niche potential for assisting people who are attempting to get their driver’s license and may need extra help.
* He wants to minimize the amount of people who fail when taking their tests at the DMV by offering practice tests, online courses and driving training with an experienced driver.

### 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 be able to accept and modify reservations to drive with an experienced driver. The system should show information regarding the car, meeting time and location, and pictures of the driver and student.
* Allow access to various practice tests and keep up to date requirements with the DMV so as not to be teaching with outdated rules.
* Have an administrative account with complete system access with enhanced security implementation and complete access to the user and password systems.
* Read-only access to the owner when offline.

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

#### 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?*

* Web-based cloud environment
* The system should be fast and efficient, as users may need to be able to access their account and make changes quickly.
* System updates should be on a regular schedule. The system needs to have the most up to date rules and regulations from the DMV and get security updates as available.

#### 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?*

* As a web-based cloud application, this should be able to run on most major platforms, including Windows, Unix, Linux, MacOS, iOS, and Android through the use of browsers.
* Back end will require a database for user information, driving instructors, vehicles, practice exams, etc.

#### 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?*

* All users will have a unique, case-sensitive username as well as case-sensitive password that requires lower case, upper case, numbers and special characters.
* Users who have been flagged as an employee by the administrator account will have access to the employee rights section of the system.
* Once a login has been attempted with the same username but an incorrect password 3 times in a row, the account should be locked and the system should inform the admin about the possible security issue.

#### 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?*

* IT admin will need permanent access to all code in case an emergency arises.
* IT admin will need to be able to add/remove/modify any user accounts to ensure clients have the access they need and that employees have the rights and roles granted or terminated as the need arises.
* The system will need to be able to adapt seamlessly with platform updates to ensure that all users can continue to access their accounts.

#### 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?*

* Users will require their unique usernames and passwords to log in.
* Secondary security in the form of two-factor authentication will also be used.
* A brute force hacking attempt will lock out that account after three attempts and the IT admin will be immediately notified of the issue.
* If the user forgets their password, they will be able to click (or tap) a link that will either allow them to have a temporary password sent to the email associated with the account or give them a chance to answer their prepared security questions to reset their password.
* Data exchange security will be handled by the serverless framework company.

### 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 display a home page with company information, service information, business contact information and login and registration links.
* The system shall show a registration page with fields in which users will enter the correct relevant information and will register those users who fill out the fields as long as requirements are met.
* The system shall validate user credentials when logging in.
* The system shall allow users to schedule driving appointments for themselves, and employee accounts will be able to schedule appointments for customers.
* The system shall be able to provide users with practice exams at their request, and then grade the completed exam based on DMV information.
* The system shall show users their completed exams along with grades, scheduled appointments (along with photos of the driver and the student as well as driver notes), and available learning materials on their profile page.

### 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.)?*

* Interface will be interacted with through browsers, either on PCs or other devices.
* Different levels of user will have different access.
* Customer users will have access to:
  + Home page
  + Registration
  + Log in
  + Personal profile page
  + Personal progression reports (completed and available exams, grades, driving appointments, notes)
  + Selected package information
* Employee users will have access to:
  + Home page
  + Registration (to register new customer accounts for them)
  + Log in
  + Customer profile pages, with limited access to the information therein such as grades, scheduled appointments, driver notes.
  + Be able to change or remove packages, update customer information, and reset user passwords
* Admin user will have access to:
  + All of the above as well as access to the backend programming

### 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?*

* Site will have an almost constant up time.
* Users will have access to a device with a browser to access the site.
* Users will understand how to navigate the site.

### 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?*

* Internet speeds will vary depending on location and possibly older devices.
* Time limitations to get the site up and running, as well as whatever budget limits exist
* With only 10 Drivers and 10 cars, the schedule will have to be updated constantly to ensure students can schedule their appointments correctly.

### 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.*

A screenshot of a computer

Description automatically generated