# CS 255 Business Requirements Document

## System Components and Design

### Purpose

The purpose of this system is to train students for their driving tests. Allowing yet-to-be drivers to take online classes, practice tests, and on-the-road training to better prepare for their driving tests. The client is Liam the owner of DrivePass, he noticed that there is a need for better driver training. So many people fail their driving tests at the DMV. DrivePass is meant to the rate of driving test failure, all while increasing overall skill for new drivers.

### System Background

The background of the DrivePass is to be a system to better train customers (i.e., new drivers) driving skills, both the rules/laws and actual driving experience. The problem that is being fixed with DrivePass is to reduce the amount of failed driver tests reported at the DMV. To achieve this goal DrivePass will provide progress tracking for the following:

* + Testing/learning material
  + The amount of behind-the-wheel practice that is performed with a trained instructor.
  + Notable feedback from DrivePass driving instructors.

According to the interview transcript, there will be three packages to choose from:

* + Package One:
    - Six hours of behind-the-wheel training with a trained instructor.
  + Package Two:
    - Eight hours of behind-the-wheel training with a trained instructor.
    - In-person lesson on DVM rules and policies.
  + Package Three:
    - Twelve hours of behind-the-wheel training with a trained instructor.
    - In-person lesson on DVM rules and policies.
    - Access to online a course with practice tests

The User accounts will consist of the following users with the specified access and capabilities:

* + Liam the owner of DrivePass
    - All-access:
  + Customer
    - Customers will be able to register an account and manage their profile
    - The ability to schedule, cancel, or modify their own lesson scheduling
    - Access to online course material if Package Three was selected. Which include the following:
      * Take online lessons
      * Take practice tests
      * View grade and overall progress.
  + Developer/Analyst
    - Authentication control
    - Password resets
    - Access to package/plan modules access for additions, modifications, and removals.
    - System logs for bug tracking/fixing
  + Network security/ IT admin
    - Authentication control.
    - Password resets.
    - Server access for maintenance and security.
    - System logs for bug tracking/fixing of network-related processes.
  + Driving Instructor
    - Can view course material and grades of customers
    - Lesson scheduling
  + DMV
    - Access to course details to ensure compliance is maintained
    - Any issues of non-compliance will be reported to the Developer/Analyst for correct/modification with approval from Liam.
  + Customer service representative
    - Lesson scheduling
    - Customer registration

### Objectives and Goals

For objective, once the system is completed, users will be able to track progress on testing content, the amount of behind-the-wheel practice, and notated feedback from DrivePass driving instructors that were made during practice driving sessions. Availability for the system will be via a web-based design that can be accessed on any PC or mobile device. The system will obtain Customer info and allow for the creation, cancellation, and modification of practice driving appointments. New modules will periodically be added to the system, implementing new course lessons and practice tests.

* The measurable goals/tasks that will be needed to complete this system are the following:
  + Requirement collections
    - The collection of Functional and non-functional requirements of the system.
  + Creation of use case and activity diagrams
    - To visually demonstrate the way the system will be used and user access.
  + Research of interface designs, class diagram creation
    - Class diagram will be the outline use to help guide the creation of the classes and variables needed.
  + The building of the databases and linking to the interface
    - Databases are established to contain course material and user information.
  + Creation of business logic layer
    - Establishes the real-world rules and constraints of the business
  + System delivery
    - System is complete and is ready for release for customer usage.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

DrivePass will be a web-based application that can access on any device with a browser. The system should responsive enough to load videos content with no buffering issue on a proper internet connection. The web pages should also be able to load instantly on a proper internet connection.

#### Platform Constraints

* Due to DrivePass being a web-based application it can be accessed on any device with a browser. This will essentially mean there are very few devices out there that cannot access it, such an example of incompatibility could be a game’s console.
* A database will need to be established to manage the course material and customer account/information.
* Since this is a web-based application, the programming language will likely be HTML, JavaScript, and/or PHP.

#### Accuracy and Precision

* Different users will be distinguished by login credentials.
* User credentials will case sensitive
* Passwords will adhere to the common password requirements of 8 or more characters long, 1 special character, 1 lower case character, and 1 upper case character.
* A System admin will be notified of any consecutive failed login attempts, data breaches, and security breaches.

#### Adaptability

* Network security/ IT admin will need the following access:
  + Authentication control.
  + Password resets.
  + Server access for maintenance and security.
  + System logs for bug tracking/fixing of network-related processes.
* User access will be enabled via security access templates. The different access templates can be applied without changing the code. The templates can also be modified, created, or deleted.
* New customer packages will be added in the form of modules. Such modules will contain code for the pertinent package. This will allow packages to be activated, disabled, modified, added, or deleted without messing with the core site code.

#### Security

* The following will be required for a user to log in:
  + Username
  + Password
* The user of encrypted network protocols will be used to secure the connection or the data exchange between the client and the server. Such protocols are HTTPS, TLS, SSL, and SFTP.
* In the event of a brute force hacking attempt, the user account will be locked out and will require a password change after contacting support/IT to verify credentials and unlock access.
* If a user forgets their password, they can contact IT/support for a password reset, Liam the owner can also perform password resets too.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall allow users with proper access to perform password resets for other users
* The system shall allow users with proper access to modify, add, or delete user access.
* The system shall allow users access based on their assigned user access
* The system shall allow online course access 24/7.
* The system shall be accessible from any web browser on any device.
* The system shall be updated in the form of modules that can be modified, added, and removed without affecting the core system code.
* The system shall be regulated by the DMV for government compliance.
* The system shall be implemented with a database for course material and user information.
* The system shall be backed up to servers for recoverability.
* The system shall be encrypted using secure network protocols, such protocols are HTTPS, TLS, SSL, and SFTP.

### User Interface

* The interface will need to be able to display online test progress, user information, special needs, driver notes, a driver photo, and a student photo.
* Users will interact with the interface from a browser on any device.
* The different users of the interface are:
  + Liam – owner
    - Manage user access.
  + Customer service representative
    - Register new users.
    - Assist users in navigating the interface.
    - Assist users in package selection.
  + Driving instructor
    - Grade online course material
    - Provide driver notes after driving lessons are conducted.
* User information includes:
  + First and last name
  + Address
  + Phone number
  + Email

### Assumptions

* The biggest assumption is Saleability, is the system saleable to a customer base? Will people buy into this system? The answer to these questions are nothing but estimated guest based on uncontrollable variables. DrivePass being profitable will be reliant on the market we are bringing this to. We can mitigate this assumptions accuracy by doing market research, DMV statistics, and consumer surveys.
* The second Assumption is the relative total cost of the development of the system. When designing/developing a system, the initial cost estimate is exactly that an estimate. The project manager can get a approximate number but it won’t be exact because of possible unforeseen expenses due to current economic situation and potential complications within the project development.

### Limitations

* Risk is the 1st main limitation. The risk of something going wrong and whether it can be remedied or will it hang up the project.
* The second limitation is budget. It is true the cost of the project can be approximately estimated, but if the cost is found to be more and more costly during development by unforeseen expenses this can cause a strain on the potential budget. In such cases either the less essential task/features will need to be cut or the budget will need to be expanded by means of investors and loans.

### Gantt Chart

Timeline

Description automatically generated

**References**

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