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# CS 255 Business Requirements Document

## System Components and Design

### Purpose

* The project's purpose is to design systems for multiple clients through a consulting firm. The client is DriverPass and they want to provide students with access to online practice exams and on-the-road training to better prepare them for driving tests at the DMV.

### System Background

* The DriverPass wants the system to train drivers for the DMV driving test locally.
* The problem they want to solve is that a lot of people fail their driving tests at the DMV.
* A few components needed are online classes, practice tests, and on-the-road training.
* The system wants users to track their progress, update instructors on passing and failing modules, and make payments online for the services to be rendered.
* The system should be cloud based and available twenty-four hours a day.

### Objectives and Goals

* The system should have a list of students passing and failing exams.
* The system should have a list of students in online classes and doing on-the-road training.
* The system should have a database that houses the list of user's personal information.
* The system should be easy to use, simple UI, and high contrasting colors that are not bright.
* The system should only display available cars and drivers to specific users depending on their skill level. A new inexperienced driver will not offer a truck to CDL practitioners.
* The system will have distinct roles for usage, such as user, student, and administrator to help with password resets.
* The database should be able to figure out who is passing their courses and progressing well and who has passed their road tests. Integration with personal records to communicate where the student stands with their progress.

## Requirements

## Nonfunctional Requirements

#### Performance Requirements

* The environment should be web-based because it will allow data to be accessed easily to demonstrate effectiveness of training. This will also allow all systems to display online content to students studying for their driving test. The system should run fast to prevent interruptions of service to training. Interruptions to the system could cause students to lose faith in the program. The system can be updated anytime new laws or training material is available.

#### Platform Constraints

* The platform is any as this can be a web-based application. The back-end work requires a database and security to protect student data and save progress through the online courses.

#### Accuracy and Precision

* Different users can be distinguished by their first and last name, date of birth, and if there is still more than one user that matches these, their mailing address. The system should inform the admin of a problem whenever there are conflicts in users, crashes, or security issues such as a user manipulating another user or course content.

**Adaptability**

* You can remove users without changing code by giving an administrator capability to update these variables with proper authorization. The type of access an IT administrator might need is that of a superuser. They can add and remove accounts but not modify settings unless there is prior authorization and security protocols in place to prevent sensitive information from being leaked from the database to the public.

#### Security

* The connection between user/client and server is done through certificates of authentication and HTTPS tunneling which encrypts information on the way to prevent man-in-the-middle attacks.
* If there is a brute force hacking attempt on an account, it can be locked for 24 hours to prevent malicious actors from guessing the correct password from an old password library.
* If the user forgets their password, they can access a reset link within their email inbox and prove further verification information such as secret questions and personal information.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall support two-factor authentication.
* The system shall have progress and grades for each student.
* The system shall have user information, such as name, driver notes, driver photo, address, payment methods, and special needs to be accommodated.
* The system shall allow students to schedule driving tests after appropriate lessons are completed to ensure a high pass rate.
* The system shall track different users such as students and administrators.
* The system shall have a schedule of cars that can be used.
* The system shall track user progress through the driving lessons and provide feedback to instructors.

### User Interface

* The interface is needed to be easily accessible by mobile or tablet devices.
* The customers can log in through an initial portal that has a forgotten password button.
* Instructors can check their schedule and cars to determine if the students pass the driving test with the ability to update profile information.
* Administrators will have a different screen that allows deleting users, or sending password reset links. Add/remove instructors from classes and add/remove cars for the test.

### Assumptions

* Assuming the students are not using their own car.
* Assuming the students all have internet access.
* The technology will accommodate the number of users per class without interruptions such as protection from DDoS attacks and secure information storage and retrieval.

### Limitations

* The limitations found will be financial, such as not being able to keep up with the number of students accessing the site.
* The number of developers working getting everything done in time.
* The budget is not determined which will dictate how many developers can be brought on board to finish the project.

### Gantt Chart

