# CS 255 Business Requirements Document DriverPass

## *System Components and Design*

### Purpose:

* Through research, DriverPass has found that over 65% fail the driving license exam.
* DriverPass is designed to provide online classes, practice tests and on the road training for new student drivers.
* DriverPass believes filling this void will provide better driver training and facilitate a higher percentage of students in passing their driving exams.

### System Background:

* The goal of DriverPass is to address the issue of inadequate driver training which is currently available to students.
* The solution to this problem is developing a more comprehensive system that includes:
  + Online Classes/Training
  + Practice Tests
  + On-the-road training
* With this training system, DriverPass aims to prepare new student drivers for the road and their exams.

### Objectives and Goals:

* The final design should allow the DriverPass employees to manage and access all data from within the application.
* The data should be available online and offline from any device/location with available internet access.
* The final design should include a user-friendly interface for both employees and students.
* The platform should allow for the following:
  + Online Classes/Training
  + Practice Tests
  + Ability to schedule online tests.
  + Ability to purchase different educational packages.
  + Ability to schedule in person driving sessions.
* Implementation of a database that stores customer information that includes:
  + Customer Demographics
  + Billing Information
  + Chosen Pick-Up/Drop-Off locations for driving sessions.
* The system should establish a connection to the local DMV office to ensure that information on rules, policies and procedures are kept current.
* Establish appropriate means of security with RBAC depending on the user.
* Creating different roles for different authorization/access to modify the system based on the RBAC.
* Activity log/reporting system that records all user activity for reliable backup and accuracy of data.
* The final design should be a web-based application, hosted by a cloud service provider, with an adaptive interface that works on various IoT devices.
* Preemptively prepare the system to be scalable and modular to be modified, expanded, or reduced as needed.

### *Nonfunctional Requirements*

#### Performance Requirements:

* The system operates as a web-based application hosted on a cloud server.
* The system needs to run quickly and efficiently with minimum latency when performing tasks (loading classes, tests or processing other user requests).
* The system needs to request/update information frequently to stay compliant with current DMV rules, requirements, and other policies.
* The system should also be updated frequently as part of regular maintenance to maintain functionality and security.

#### Platform Constraints:

* As the platform is destined to be web-based, it should run effectively on as many platforms as possible through web browsers (it is impossible to capture all IoT devices and configurations).
* The back end requires a scalable and reliable database to store information and support the functionality of the application.

#### Accuracy and Precision:

* Implementation of a RBAC system to distinguish users.
* Appropriate roles and responsibilities associated with each user role.
* Input will be case sensitive for security purposes on items such as password.
* Other items such as online tests will not be case sensitive to improve user experience and reduce the likelihood of errors for non-security related tasks.
* Regular/Emergency notifications should be sent to registered administrators to report potential problems within the system or data inconsistencies.

#### Adaptability:

* The system will have built-in methods to modify aspects of the system without altering code.
* The IT Manager Role will have access to perform platform updates and modifications.
* Modular architecture will allow adaptability to platform updates.

#### Security:

* Users will log in using a unique username/password and will be assigned a specific role.
* Multi Factor Authentication will be established.
* Users will create accounts based on email addresses which will serve as a method to reset their password.
* HTTPS will be used to secure the connection between client-servers.
* “Brute Force” hacking attempts will result in an account being locked/suspended immediately and appropriate notifications to the admin(s) and IT manager should be made.

### F*unctional Requirements:*

* The system shall allow new users to create an account.
* The system shall validate all users when logging in (username/password)
* The system shall enable users to purchase educational/driving lesson packages.
* The system shall allow users to schedule, modify and cancel driving lesson appointments.
* The system shall allow users to access all non-physical content online (classes, practice tests).
* The system shall allow users to track their progress through the online courses.
* The system shall allow users to reset their passwords.
* The system shall maintain role-based user accounts, which allow different authorizations, actions, and permissions.
* The system shall track and record all activity for security and for accuracy of data.
* The system shall notify admins when updates from the DMV are available.
* The system shall support users utilizing different IoT devices.

### User Interface:

* There will initially be 5 user roles available within the system:
  + Admin – Manages/Oversees the entire system and can access reports.
  + IT Manager – Manage/Modify user accounts, perform system maintenance and reset user passwords.
  + Secretary - Ability to schedule, modify and or cancel appointments for customers and manage customer information.
  + Student – Able to create an account, purchase educational packages, schedule appointments and access online educational resources.
* The user interface needs to be intuitive and easy to use.
* Users will interact with the system through a web browser on different IoT devices.

### Assumptions:

* Users will have a reliable internet connection to utilize the online educational content.
* Users possess devices that can navigate to a web browser to use the system.

### Limitations:

* It is not possible to meet the needs of all users, at least not initially. Some updates and modifications will most likely need to be made to improve future functionality.
* The system partially relies on constant updates from the DMV, which may be delayed or incomplete.
* Device compatibility or other technical restraints such as user proficiency, may negatively impact the user experience.
* Depending on future information, current resources may limit the implementation of all requested/desired features and functionality.

Gantt Chart:

