# CS 255 Business Requirements - Cochrane

## 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?*

* Client: DriverPass
* The client would like to have a system that facilitates their business of preparing teenagers for the DMV driver’s license exam.

### 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 that the client is aiming to fix is the lack of quality in driver’s education.
* Required components:
  + Cloud server
  + Secretary
  + Website
  + Appointment database
  + Driving instructor database
  + System level access to key people
  + Driving course materials
  + User information database

### 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 efficiently setup a new user and effectively accomplish their driving education in a manner hopefully better than any competitors
* Measurable Tasks:
  + Create user dashboard as shown in sketch from owner
  + Create packages as specified by owner
  + Establish communication between DMV and DriverPass to ensure updated curriculum
  + Implement backdoor for IT Officer to use

## 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 either on mobile or desktop so as to avoid version mismatching
* The system needs to be reasonably quick for user navigation, but something like instant feedback is not as important in this system as it is in others, such as Zoom and other collaborative tools
* The system needs to be current at all times with documentation from the DMV. This may result in irregular timeframes, but the system will poll DMV every day and update if applicable.

#### 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?*

* Since this is a web-based application, any system that supports HTML should be able to run it.
* Several databases are required, as well as a logging tool

#### 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?*

* Users will be distinguised by their user ID, which is unique to each user
* The input for user ID is not case-sensitive, but the password is.
* Admin should be informed when either a customer puts in a support request, or if a function is not working properly which would be flagged automatically by a logging tool

#### 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 code is modular, so functions are simple to add/remove/modify without messing up the system.
* The system will adapt to platform updates by ensuring functionality with some sort of testing suite after each update
* The IT admin needs full access (excluding sensitive user information) to perform maintainance.

#### 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 user needs a user ID and password that they selected when creating their account
* The connection can be secured by using an encryption algorithm such as SHA-256.
* Brute force has proven to be ineffective against SHA-256
* If a password is forgotten, a reset password link will be sent to the email address that the account is linked to.

### 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 validate user credentials when logging in.
* The system shall be integrated with the DMV for automatic updates
* The system shall be run on a cloud server.
* The system shall provide several service packages that are updatable.
* The system shall store customer information in a database

### 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 needs: Online test progress, driver notes, user information, special needs, driver photo, and student photo
* The users for this interface are the driving students (customers).
* The needs to be able to enroll and unenroll, read driver notes, and track their progress
* The user can interact via mobile/desktop browser

### 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?*

* Users are under 30 years old
* Users are English speakers
* Users are on a major platform (Windows, Mac, Linux, Android, iOS)

### 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?*

* DriverPass is not exactly a high revenue enterprise, and that lower budget will reflect in how polished the end product is. The functionality required is all that will be guaranteed by the developer.

### 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.*

