# CS 255 DriverPass Requirements Presented by Enrique Zarate Updated: 9/4/2021

## System Components and Design

### Purpose

* *The purpose of this project is to create a web based system/database that will allow adults and young adults to prepare for their driving test In hopes of increasing their chances of passing by scheduling in person-driving lessons online and allowing them to check their progress on practice tests or via feedback from the instructor.*

### System Background

* *The client, DriverPass, would like to be able to use the system in the following ways:* 
  + *Online Database that will be managed by third party services.*
  + *Front-end user interface for client users.*
  + *Front-end user interface for employees/contractors (drivers).*

### Objectives and Goals

* The system will provide functions for the following users:
  + Clients:
    - *Allow client users to purchase a plan as offered by DriverPass through merchant portal.*
    - *Allow client users to be able to create and manage a profile to track their progress of feedback from one of the purchased plans.*
    - *Allow client users to be able to make reservations of 2-hour windows for in-person driving lessons with a DriverPass Driver User.*
  + *Drivers:*
    - *Allow driver to see their currently scheduled times.*
    - *Allow driver to update feedback for clients.*
  + *Owner/Administrators:*
    - *Allow Admin Users to have all blocking privileges of any users that may need to have rights taken away.*
    - *Track all changes made in the system by date, info changed, and user that changed that portion.*

## 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?*

* A web-based or website is the ideal environment for creating the system which will be able to have an online and offline mode with some limitations. The web-based server needs to be instantaneous with updates or changes being sent as soon as they happen to keep the web-based server up to date for all staff as well as those working online receiving those updates as soon as they happen. Having a web-based environment that can be accessed online through browsers will also help to make this somewhat cross platform.

#### 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?*

* In the interview, the owner is requesting access from computers and mobile devices, so it is a requirement that it is cross platform. The system should be available through browsers on whatever platform is available since we are not sure the specifics of the employees and the most used platforms through the business. More information may be needed here. For example, if the business requires the use of specific software or computer equipment, we can narrow down what would be ideal.

#### 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?*

* Different users will be distinguished by usernames that will also be their user identification. The input will not be case sensitive to avoid any possible duplicates of the same usernames. This will be most significant in the form of the reservation process used for DriverPass. Anytime an employee user is matched with a reservation time, they can not be scheduled again for that same time and this should create an error to the admin and system that the driver is not available during that time.
  + Roles and Permissions will be very important here as student users must be distinguished from employee users and admin users supersede all other users.

#### 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?*

* Changes to the user information needs to be available without changing the code as requested by the owner in the case they need to block access or rights immediately. For the privacy of the employees, the administration may have rights to change the passwords for employees but not be able to see their current passwords as those may be the same for private or personal use as well.
* Once the system is in place, all updates to the platforms should be in the form of what would be deemed as minor changes. Some flexibility will need to be regarded when thinking about the possibility of adding features or adding packages for sales but the major components of what is needed is described thoroughly in the interview process.
* IT admin needs primarily access over the access for modules and content since whenever updates are necessary for that specifically, it needs to be coded in a way to make it meet the requirements.

#### 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?*

* A username and password will be required for the user to login.
* The cloud-based server will be able to provide security for the server and the primary focus for security will be setting up a secure data connection to ensure the safety of all data sent between the client and the server.
* To prevent brute force hacking, login attempts will be limited to 3 for a certain amount of time and a wait time will be required to re-attempt.
* If the user forgets their password, under the requirements set by the owner, they will have to email the owner and request to have their password reset.

### 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 allow for the creation of student users by admin users (admin / admin secreatary’s).
* The system shall create reports of online data for offline use.
* The system shall allow for students to make reservations for their driving practice times for windows of 2-hours.
* The system shall allow access of restricted content to those who have purchases the required package for access.
* The system shall notify drivers when they have been scheduled for physical driving lessons.
* The system shall track changes of any data changes by tracking the users that made the change, the time of the change and the date of the change and what specific change was made.
* The system shall notify admins of changes to the DMV website or tests.

### 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.)?*

* The primary vehicle for the user interface will be using a browser as all platforms will be able to use some form of browser to interact with the system.
* The following are the different users and ways they need to interact with the interface:
  + Students:
    - Login and view their own specific profile.
    - Profile will display current program progress, information about themselves, notes from their driving mentor, etc.
    - Make reservations for in person driving training.
  + Drivers:
    - Check on multiple students they may be working with and their progress pages.
    - View their current calendar of scheduled in person driving lessons with students.
    - Manage their available times for in person driving lessons.
    - Update students notes for students they have recently worked with.
    - Update their personal information for their employer.
  + Admins:
    - View all users created through system.
    - Make any changes to any users or appointments (except for training modules page).
    - Block access to users.
    - Enable and disable modules for purchase.
    - Add or delete resources for online training.

### 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?*

* All users will have online connectivity at some point to be able to access information at one point.
* All users have a device that allows for online browsing.
* All users that need the offline capability will have software that will read .xlsx format.
* Most users will have experience with logging in at some capacity.

### 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?*

* Bandwidth speed will vary for users based on their home or mobile network that affect their experience with the website.
* Password reset requires the owner approval per the requirements which can be limiting on the timely response.
* Not all users will be always connected online.
* Browser incompatibilities or user interfaces may be compromised on the many different platforms depending on where they are viewing which may affect experience with program.

### 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.*

Table

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