# CS 255 Business Requirements Document

## 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?*

* The purpose of this new project is to design a system for our client: DriverPass. The client would like our small consulting company to design an online application that provides online training to their users. The objective is to provide a better online training program to increase knowledge with online classes and practice tests prior to their written and driving test with the DMV.

### 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?*

* With a void in the market for training students online, DriverPass wants to take advantage of this due to failed tests from previous students.
  + Wants a system to be designed that will allow a user/student to access their online webpage for better online training for beginners.
    - Provide online classes and practice tests
    - Provide on-the-road training if requested
* Accessibility to data from anywhere online or offline
  + Modifications to system will remain online to reduce redundancy in data
* Needs ability to change/modify/add/delete packages in future (flexible)
  + Needs system analyst so won’t be in the current build
  + Needs ability to disable package if company doesn’t want customers to register for that package
* Collect and track customer billing information
  + First and last name, phone number, state, credit card #, expiration data, and security code)
* Ability to stay connected to DMV for law and compliance changes
* Run on a cloud platform for less upkeep to deal with backup and security
* Need a page for DriverPass contact information

### 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?*

* Needs to Speak with and be notified of DMV updates and policy changes
  + Tests and training compliant with DMV regulations
  + Provide all DMV rules, laws, and regulations
* User can make, cancel, or modify appt online w/automatic password reset to own account
  + Can reserve day and time for lesson
  + Can call for reservation
  + Can visit in person to schedule an appt with secretary
* User can pick one of three packages:
  + **Package One:** Six hours in a car with a trainer (3 separate sessions)
  + **Package Two:** Eight hours in a car with a trainer and an in-person lesson where we explain the DMV rules and policies (4 separate sessions)
  + **Package Three:** Twelve hours in a car with a trainer, an in-person lesson where we explain the DMV rules and policies—plus access to our online class with all the content and material. The online class also includes practice tests. (6 separate sessions)
* Tracking system for student progress
  + Student and Company accessibility
  + User information collection
    - Authorized access only for user information
    - Multiple employees with different rights/roles for access
  + Driver notes: show any comments the driver left as well as the times for the lessons

## 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?*

* The backup and security will run off a cloud-based system to reduce technical problems, so the environment will be web-based and function on mobile and laptop/PC web browsers.
* The system will need to be updated as often as the policies and procedures change within the DMV as well as often as security updates are implemented.
* If the client requires changes, updates are imminent.

#### 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?*

* The system should function on the 4 major platforms: Windows, Mac OS X, Linux, and Chrome. The platform compatibility will allow the system to be accessible from any location.
* The database will be covered by the cloud system. It will be responsible for the communication between client and server through the internet and is the resource for data transfers.
* The database is where the customer and company information will be collected and stored.

#### 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?*

* All users will have a unique username and password assigned to their account. The system will validate the user credentials upon logging in. The system should implement a case-sensitive two-step authentication process for account security.
* Upon creating an account, a new user will be assigned a user ID that will be part of the user authentication.
* If account is compromised, the customer and company should be notified, and the user should be prompted and required to change his/her password.
* If there are any bugs within the system that is detected by a user, it should be flagged and the appropriate personnel be notified for a resolution.

#### 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 system will provide a way to add/remove/modify a user without changing the main code.
* The system is expected to allow for new updates and will be implemented in a timely manner.
* The company will need to schedule updates and should inform all users of when the updates will be performed.
* The IT and specified employees will have full access, except for the cloud as that will be managed by a third party. The IT department will have access to add, modify, or delete customer or employee account information.

#### 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 will be required to enter a two-step authentication, i.e., username and password.
* If the user forgets password, the user will need access to change account password through a reset link, but system will need to validate email on file for specific user.
* The third-party cloud-based system will be responsible for data communications between the client and the server.
* If brute force is detected, the system should disable the account. There needs to be a limitation of the number of attempts for attempted account access.
* Notification needs to be sent to the account holder as well as the company.

### 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 authentication for account access.
* The system shall provide authorized access depending on user credentials.
* The system shall allow users to modify, add, or delete appointments.
* The system shall send notification of new or modified scheduled appointments.
* The system shall provide progress reports to company as well as account holder.
* The system shall be up to date on DMV policies and procedures.
* The system shall inform user of the driver assigned to them.

### 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.)?*

* Employees will need access to modify and update the system and/or user account information as needed.
* Users must have the option to take online classes, take practice tests, review course materials, and be able to modify their driving lessons.
* Users must have the ability to modify their own account information.
* Users must have the ability to interact with the interface through all platforms, i.e., smartphones, laptops, etc.
* Interface must show the online test progress, driver notes and photo, student photo, special needs, as well as the demographics of the student.

### 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?*

* We are assuming the users have ability to modify, add, delete account information including student photos.
* We are assuming the users have basic knowledge of online platforms and the interface will be user friendly.
* We are assuming the application will support all platforms, such as IOS, Android, Windows, etc.

### 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?*

* Ian (IT Officer) would like to run the application over the cloud. I foresee a technology limitation with using a cloud-based system.
* No budget given so I assume there are no limitations for the budget developing for mobile and PC technology.
* No timeline limitations as of now. If we follow the Gantt chart listed below, we should remain on schedule.

### Gantt Chart

Timeline

Description automatically generated

References

Valacich, J. S., & George, J. F. (2019). *Modern Systems Analysis and Design* (9th Edition). Pearson Education (US). <https://mbsdirect.vitalsource.com/books/9780135172841>