# CS 255 Business Requirements Document

Jaden Williams

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## 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 sole purpose of DriverPass is to train young drivers on the rules of the road and give them the best possible driving education so they will pass their driving test.
* Liam and Ian are the clients.
* They want the system to be able to be accessed mostly online, with the capability of downloading material to be used offline.

### 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?*

* As mentioned above, the client wants the system to be accessed both online and offline. They want practice tests, study material, up-to-date DMV rules and regulations, grades or scoring to check progress, and access to a car and instructor for in person driving classes.
* The problem they want to fix is to allow students ample ability and access to study materials for their driving tests. They believe a one-stop system for all material, tests, and driving classes should be accessible to anyone, anywhere.
* The system will need components to register the user (Whether a customer, IT Admin, etc. and be able to differentiate between the accounts), a secure database to store the user's information, the ability to process scores in real time and display them to the learner so they can have the quickest feedback, and the ability to manage and create driving appointments.

### 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?*

* When the system is completed, it will allow for a new customer to register, add all their information, manage their information, schedule/manage driving appointments, and have all the most up-to-date DMV rules and regulations at all times. The user will also have a progress overview which will display their current test details and statuses.
* All driving packages can be scheduled freely by the user. If a package is fully booked the admins will be able to disable it until it becomes available again.
* Once a drive is completed, the user will have access to the instructor's notes.
* The system will also have admins, they will have the highest level of access. The admin will be able to see who is registered, and what type of account the individual has, to ensure no one gets a higher clearance than they should.

## 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 system will be Web-based.
* The client wants the system to run fast, and scale to the performance of the user's computer so it's accessible to anyone.
* With the amount of customer private information being stored, the system will need frequent security updates to ensure maximum protection. Also, DMV rules and regulations change semi frequently (I’m guessing?) so it will need to update with the DMV changes as well to ensure the most updated information.

#### 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?*

* Any internet capable device will be able to access the system. This means on mobile; the system should be able to resize itself to the mobile browser automatically.
* A database is absolutely required to support the system. A large amount of information will need to be stored securely and will need to be accessible and editable if the need arises.

#### 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?*

* The user will be prompted to input their email (as the username) and create a password upon creating their account. The system will check their email to determine if it is unique (unused), if not it will prompt them to use a different email and state this email is already in use. The input will be case sensitive for the password to ensure max security.
* If repeated incorrect user info is submitted (possibly a brute force attack) the users account will be locked immediately, and the admin will be notified of the repeated incorrect info. An email will be sent to the users email to unlock their account and reset their password.

#### 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?*

* Yes, any changes needed to be made to the user will be implemented so no code will need to be changed.
* The IT team will get notifications upon scheduled platform updates to ensure an update rolls out to the system to maintain compatibility.
* The IT admin will need access to a user's information, the ability to add new employees, or remove former employees, and an auto-feedback tool to see the real time health of the system.

#### 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?*

* For students, their email and password will need to be entered in order for them to access their account. Maybe an optional MFA system can be included for increased security.
* The admin/employee sign in will be their employee username and password. To increase security strength, the system should prompt employees to change their password every so often.
* HTTPS should be used rather than just HTTP. HHTPS is more secure and will safeguard user info much better.
* As mentioned above, if there is a brute force hacking attempt, the system will lock the account and notify the admin immediately. An email will be sent to the user to unlock their account and reset their password.
* If the user forgets their password, there will be a reset password button below the sign in button. Once pressed this will send an automated email to the user with a code to be inputted into the system, once inputted, the user will be able to reset their password by entering the new password twice.

### 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 customers to register their new accounts
* The system shall allow customers to select from the three driving packages
* The system shall allow for admins to disable any unavailable packages
* The system shall verify all user information upon logging in
* The system shall be available online, with the ability to download study material for offline use
* The system shall be able to determine whether a customer or admin has logged in
* The system shall allow the admin to always view the diagnostics of the system
* The system shall allow the admin to edit information, add/remove users (Employees and customers)
* The system shall notify the IT team when a platform update has occurred
* The system shall be able to be updated to ensure maximum security and accessibility
* The system shall update its information as the DMV changes their policies
* The system shall safely and securely store all information to its secure 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.)?*

* A user-friendly interface will be required due to accessibility reasons. It should load quickly and be able to tell what type of user is accessing the system.
* There are two different users of the interface. The admin, and the customer/student.
* The admin will need to be able to edit any user information, add/delete employee accounts, and have the ability to see the systems diagnostics.
* The customer/student will be able to register their account, see the list of exams, the study material, their grades, manage their personal info, see instructor notes, and have real-time feedback on completed work.
* The user will be able to interact with the interface via web browser. The system will be able to automatically adjust to the different platforms to ensure maximum accessibility.

### 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?*

* The system will be online 24/7
* The system will update itself with new DMV guidelines (mentioned above for explanation, but overall assumed)
* The users will have a device capable of accessing the internet

### 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?*

* Time and budget are always a large limitation of any system design.
* Accurate and well-organized planning is required for drive scheduling. The number of cars is a pretty major limiting factor.
* The system needs a decent internet connection to run properly and allow the offline materials to be downloaded.

### 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.*

