# CS 255 Business Requirements Document Template

## 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 client, DriverPass, is wanting to create an online driver learning system that allows for online classes, real-world experience driving, and connection with instructors for hands-on learning in a way that is easy, accessible, and quick.

### 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 viewed problem is that there is a gap in the market between connecting a beginner student to being ready to test at their local DMV.
* To solve this issue, DriverPass will allow for customers/students to learn at a pace that works for them.
* As driving learning options, the customer can choose between three packages that have various levels of both online and hands-on learning.
* In order to create their best learning system, the customer must be able to choose a package, upload their information (payment, address, name and preferences) while also being able to make and modify reservations for driving lessons.

### 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?*

* Upon completion, the system should be able to accessed by different users (Customers, administrators, instructors).
* Each user should have their own set of accessibility; accessing reservations, modifying appointments, tracking modifications, or limiting or giving access to users.

## 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 should be available online in both desktop/laptop, and mobile capacity.
* Updates should be rolling in order to keep up with changing DMV requirements, changing instructors, and updating both students and instructors on these changes.
* Because of these updates, as well as the need for online learning systems that show grades, changes, and reservation updates, the speed of the program should be higher.

#### 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 run on browsers that can be accessed by all operating systems (Windows, MacOS, Linux) such as Google Chrome, Firefox, and Edge.
* A database of users needs to be accessible by all browsers.
* There should also be mobile support that allows for the screen size to be adaptable.

#### 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 distinguished by login, with higher-access logins needing to be accepted by the administrator.
* All input should be case-sensitive, since there is sensitive information within each user’s profile.
* The system should inform the administrator after 3 times of attempted (but unsuccessful) login attempts, or when a user or instructor cancels their profile.

#### 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?*

* In order to make changes to the user (add/remove/modify) without changing the code, the ability needs to have already been coded in on the backend. If that is something that the provider wants to use later, it can be added to the base code to be accessed when ready.
* The IT Officer would need access to all profiles’ data access (not necessarily the sensitive data) in order to make platform and information updates.

#### 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 two-factor authentication on the users’ end would be the safest option for login.
* In order to secure the data exchange between client and server, encryption such as AES (Advanced Encryption Standard) with a 256-bit key would be a safe method. This would only be accessed by the IT Officer and Administrator.
* In the case of a brute-force hack attempt, an alert would be sent to the IT Officer and Administrator immediately.
* If a user forgets their password (after X number of attempts, I suggest 3), they will receive an email to the email address associated with their profile to change their password, warning them of an attempt, as well as a link to contact the IT Officer if they did not request the change.

### 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 create a profile for new users
* The system shall determine different users such as customers/students, drivers/instructors, IT Officer, and Administrator
* The system shall validate the existing login using two-factor authentication
* The system shall allow profile changes
* The system shall provide access to the reservation system
* The system shall store user information with encrypted security

### 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 Different Users are Students, Instructors, IT Officers, and Administrators and should be able to access their profile from any browser either mobile or desktop.
* Students shall have access to: Profile Page, Exams, Grades, Personal Information, Instructor and Administrator Contacts, Package Purchasing, DMV Requirements.
* Instructors shall have access to: Students Exams, Grading, Notes to Students, Student’s Pickup Address, DMV Requirements.
* IT Officers shall have access to: Profile interfaces (for updating), DMV Requirements (for updating), Security (and any breaches), Ability to Open or Shut Down profiles.
* Administrator shall have access to: Ability to Open or Shut Down profiles, Add or Delete Instructors, Make/Modify/Cancel Appointments, Track Modifications.

### 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?*

* It’s assumed that there will be up and down times for access.
* It’s assumed it will be modular in style, allowing for changes.

### 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?*

* A possible limitation is that the client has not expressed any budgetary needs, therefore the budget could be an issue.
* The chosen timeframe is only three and a half months long, so staying on time could be a limitation.
* Client wants could also be a limitation; meeting expectations is always a win/lose situation and setting realistic goals and expectations is imperative.

### 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.*

