# 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?*

* Liam, the owner of DriverPass, wants to enhance his company by offering access to a variety of driving training options to his customers.
* Liam recognizes the need for accessible online resources that enable customers to select from a range of packages that can better their driving skills and understanding of DMV rules/policies.
* DriverPass is looking for a system that can allow their users and customers to access the company’s data online from any device.
* Liam needs to be able to download reports and various bits of customer information using programs such as excel.

### 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?*

* DriverPass’s owner, Liam, is seeking to fix the customer experience when going through the process of learning to drive.
* The system components they require employees to access includes the ability to monitor information for booked appointments, ability for Ian their IT officer to conduct password resets for employees, and for Liam to generate reports on current customer driving reservations.
* Liam would also like the system to be connected with the DMV for notifications on updated rules, policies, and sample questions so his customers can be adequately informed with the most current information.
* The system components they require on the customer end to improve their training experience includes the ability to make reservations, automatically reset account passwords, collect payment online through customer accounts for driving packages, and allow the customer to view the progress of their training.

### 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?*

* For the user side, DriverPass’s system should enable their employees access to the following features to ensure their customers have the best experience possible:
  + Ian, the IT officer, needs to have full access to all employee accounts in order to reset passwords for current employees as well as have the ability to block access to accounts for those who have left the company.
  + Liam, the owner, needs to be able to access information on employee tracking for accountability purposes. This includes viewing who made reservations for customers, who made cancellations for lessons, and who is modifying those changes. The system needs to be able to generate an activity report for him to view this information.
  + The secretaries with the company should only be able to access information pertaining to the customer, such as making or modifying reservations.
  + Each of the drivers is assigned to one car, and there are ten cars in the company’s possession. The system needs to prevent redundancies in reservations, so drivers are not double booked for two different customers during the same time frame.
* For the customer side, DriverPass’s system should enable their customers to access to their own personal account to perform a variety of functions, such as:
  + Registering for their own account to include the first and last name, address, phone number, state, credit card information, and pick-up/drop-off location for their in-person driving lessons.
  + To ensure privacy and security are prioritized, it is imperative this system includes the ability for their customers to change their account password and information if necessary.
  + The customers’ view of this system should allow them access to their progress throughout their driving lesson experiences. This includes test progress information, driver notes following in-person training, and up-to-date information on the progress of the package they have selected.
  + The customer should receive updates made by the DMV regarding policies and rules, so they have the most recent information available.

## 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?*

* What environments does this system need to run in?
  + Web-based cloud environment
* How fast should the system run?
  + System load time should be kept to a minimum, preferably no longer than 3 seconds.
* How often should the system be updated?
  + Routinely – anywhere on a bi-weekly or monthly basis, making adjustments as needed.

#### 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?*

* What platforms should the system run on?
  + The system should run on all major browsers available on computers and mobile devices, i.e. Google Chrome, Safari, Internet Explorer, Microsoft Edge
* Does the back end require any tools, such as a database, to support this application?
  + A database would be required to store all customer data and would also require a cloud server as specified by DriverPass. The cloud server enables the team to not have to worry about backup and security.

#### 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?*

* How will you distinguish between different users?
  + Each customer or user will have their own unique login, administrative users will have different access types from customers.
* Is the input case-sensitive?
  + Yes, that enables better secure passwords to be implemented.
* When should the system inform the admin of a problem?
  + Admins should be notified by the system immediately with any hinderance.

#### 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?*

* Can you make changes to the user without changing code?
  + All user data is stored on the backend therefore the code should not require modifications.
* How will the system adapt to platform updates?
  + There should not be any issue with updating the system, it will be an efficient design.
* What type of access does the IT admin need?
  + IT admin needs to be able to access all components that are responsible for maintaining the system, i.e. the database and server.

#### 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?*

* What is required for the user to login?
  + Input of personal email for the username and then a personalized password that is case-sensitive.
* How can you secure the connection or the data exchange between the client and the server?
  + The best way to go about securing the connection is via multi-factor authentication. This can be by sending a secure passcode generated by the system that is sent to a personal device via text or secure email.
* What should happen to the account if there is a “brute force” hacking attempt?
  + The implementation of limitations on the number of access attempts can prevent this. Limiting any user to no more than three attempts before locking the account is a good way to go about this.
* What happens if a user forgets their password?
  + Customers can be prompted to change their password via a link on the login window, administrators can do the same or have the option to notify IT to reset it remotely.

### 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 provide three different options of driving packages to choose from with each cost amount.
* The system shall display all completed courses and student progress.
* The system shall display all upcoming reservation details in each customer account.
* The system shall display all current DMV requirements and provider administrators with notifications on any updates.
* The system should enable customers to book their driving lessons through their portal.
* The system should enable customers to review all personal information associated with their account.
* The system should allow customers to enter their pickup location.
* The system should allow customers to view each driver and vehicles available prior to booking.
* The system shall validate user credentials when logging in.
* The system should allow administrators to track all reservation activities.
* The system should allow customers to access various online resources, such as virtual courses, provided by DriverPass.
* The system should allow customers to reset their own account password.

### 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.)?*

* What are the needs of the interface?
  + Must allow customers to make reservations for driving lessons.
  + Must allow customers to participate in online classes and have access to updated DMV requirements and resources.
  + Interface should be accessible on a number of devices, i.e. mobile devices, and computers.
* Who are the different users for this interface?
  + Customers interested in services provided by DriverPass.
  + Administrators who need to view changes to customer accounts and reservations.
* What will each user need to be able to do through the interface?
  + Customers need to be able to add/cancel/update reservations.
  + Administrators need to be able to view changes to reservations.
  + Customers need to be able to select which package they would like to reserve and view all package options.
  + Administrators need to be able to download reports.
  + Administrators need to be able to utilize the interface for resetting passwords and adjusting access.
* How will the user interact with the interface?
  + Users will interact with the interface via online browsers on computers or mobile devices.

### 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?*

* What things were not specifically addressed in your design above?
  + Minimal discussion was held, aside from Liam’s sketch, about the actual navigation of the system from the customer perspective. The design should be intuitive for both the customers and administrators respective of their given access.
* What assumptions are you making in your design about the users or the technology they have?
  + Assuming all customers have access to the browsers this system will be available on.
  + Assuming all customers and administrators will be able to easily navigate the system.
  + Assuming IT support will be able to maintain the system as needed.

### 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?*

* What limitations do you see in your system design?
  + There are a limited number of instructors, vehicles, and time slots that a customer can reserve. The system needs to be efficient and effective enough to accurately display updated information about any of these options already being reserved.
  + Unreliable internet connection.
* What limitations do you have as far as resources, time, budget, or technology?
  + Time to complete system is between January 22nd through May 10th.
  + Budget will be dependent on what DriverPass is able to pay.
  + Technology limitations can include resources the customers have access to, such as older mobile devices that may not support the browsers our system will be installed on, to the hardware DriverPass currently has access to.

### 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.*

A close-up of a gantt chart

Description automatically generated