# CS 255 Business Requirements Document Template

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 client for this project is Liam, the owner of DriverPass, and his IT officer Ian.
* The purpose of this project is to create a better system for training students looking to pass their driving tests to be able to obtain their drivers licenses.
* Some features Liam and Ian would like to see are online classes and practice tests, a system to book on-the-road lessons, with cloud systems that can also be reviewed but not updated offline, a way to track user changes made in the system, functionality to reset user passwords, a way to add or remove different types of lesson packages in the future, and connection to the DMV to stay updated on any new tests or rules the DMV may require.

### 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 has a vision for a system that will help them to better provide driver training services in order to take advantage of a void they see in the current market. They are aiming to fix the problem of the high number of people who fail their driving tests at the DMV due to improper or lack of training.
* Some important components the system must have include access to data from anywhere with the ability to download reports and work with them offline in a program like Excel.
* Security measures and tracking capabilities so any alterations made to the system can be traced back to the user making the changes.
* Allowing customers to make online reservations for driving lessons that identify the driver, time, and car they have been scheduled to be with as well as a progress bar so they can see previous tests passed as well as upcoming tests they need to take.
* A system for handling payments, sending out emails, and text reminders for upcoming appointments will also need to be included.
* For all these components to come together a database to store and organize data, a user interface for customers to access and make reservations, security measures to protect data and restrict access, and a means of securely handling payments will be necessary to complete this project.

### 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 this system is completed, it should be able to carry out all the functionality the client has laid out in the previous sections of this document. Some measurable tasks that will be used to decide whether this system design has achieved its goal will start with having a fully functional database to store and organize data.
* Next a creation of a working user interface that will allow customers to access the system to make reservations, cancellations, or reschedule lessons, as well as select from the different packages being offered.
* Another important measure will be a safe and secure payment processing system and security measures to ensure not only client financial information but also their personal information remains secure.
* A system for tracking capabilities so the client knows who is making or modifying reservations as well as a log of activity reports are necessary for a system of accountability.
* A system that allows customers to view their scheduled appointments that includes data like the driver, time, and car they are scheduled with must be functional as well as a system for email and text reminders.
* Without all these components fully functioning the system cannot be considered completed.

## 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?*

* In the in-person conversation with DriverPass no specific environment that the system will run on was discussed. Since the client requested that data be available both online and offline a possible combination of web-based and application could be used.
* The system needs to run fast and seamlessly for both the client DriverPass as well as their customers.
* While no schedule for updates and maintenance have been discussed yet it was implied that DriverPass will need to retain a developer to make and changes to the program after is has been completed by us.

#### 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?*

* While specific platforms have not been addressed yet, to reach the largest number of customers it would be best for this system to be able to run on multiple platforms including Windows, Unix, Mac, as well as both Android and Apple mobile platforms.
* For the backend system tool needed would need a database to support the application and store and organize its data.
* The proper tools need to be considered to meet the technical needs of the system to ensure it performs well.

#### 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 client has requested that the registration process should begin with a phone call, and then the customer gives DriverPass their information.
* This information would include their first name, last name, address, phone number, state, and their credit card number, expiration date, and security code.
* DriverPass has requested a feature to reset customer passwords so it seems implied that some form of a system requiring a username and password will be used for customers to access their accounts in the system.
* While this was not discussed a system for case sensitivity is usually more secure. It will be important to design the system to alert an admin if any problems arise including a security breach, system technical difficulties, users forgetting their passwords, etc.

#### 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?*

* It was not specified by DriverPass about whether they wanted the ability to add/remove/modify users without changing the code, however they did request being able to add/remove/modify different lesson packages in the system, so it might be ok to assume they would like that functionality in other areas of the system.
* The system should be designed for adaptability to platform updates including OS updates, new tools, and technologies, etc.
* The IT administrator will probably need full access to all accounts and system functions in order to maintain it. The IT admin should be able to do things like reset passwords, block access for terminated employees/grant access for new employees, and other necessary changes to 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?*

* Most applications use a combination of usernames and passwords as a system to allow users to login to their profile for a system. There are other methods of authentication including biometric verification, two-factor authentication, or verification code authentication via text or email.
* In order to secure the data exchange between client and server you can use encryption to protect the data. This could involve different protocols like HTTP or TLS which are methods to encrypt the data. You can also use firewalls, VPN’s, and regularly update the system to patch newly discovered exploits or security vulnerabilities.
* If a “brute force” hacking attempt is detected by the system, an automatic response could be activated that locks out or blocks an account after a number of failed login attempts occurs. This is the normal method used to prevent such attacks.
* If a user was to forget their password, the system will have a process for requesting a reset pf the users password. This generally involves sending a reset link to an email address the user has previously specified.

### 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 the client to access data from anywhere, online or offline, and to download reports and work on them using Excel.
* The system shall have security measures in place, including the ability for certain employees to reset passwords and block access for terminated employees.
* The system shall have tracking capabilities, allowing the client to know who made or modified a reservation, and to print an activity report if something goes wrong.
* The system shall allow customers to make online reservations for driving lessons and identify the driver, time, and car they are scheduled with.
* The system shall handle payments in a secure fashion.
* The system shall send out email or text reminders about upcoming lessons.
* The system shall validate user credentials when logging in.
* The system shall encrypt data transmitted between the client and the server in order to protect it from unauthorized access.
* The system shall block an account that is under a “brute force” attack or other hacking attempts.
* The system shall have a process in place for resetting user passwords if they were to forget their 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.)?*

* The needs of this interface include ease of use, responsiveness, and security.
* Customers are a set of users for the interface that will need to be able to access and make reservations for driving lessons. They will also need to be able to view their reservation history, make payments, receive email or text reminders, and view the current progress of their tests/lessons.
* Employees are the other set of users for the interface that will need to be able to access and update customer information, schedule driving lessons, and view reports. They also need to be able to have different levels of access and permissions based on their position in the company.
* The user will interact with a variety of methods based on the clients request that may include a mobile or desktop application as well as a web based client.

### 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?*

* Some of the needs that were not specifically addressed but are assumptions about the users include whether they will be using a desktop or mobile phone and using either an application or web browser for access.
* The specifics of the security measures that will be used.

### 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?*

* Some limitations that may be present in the current design include technical limitations like the technologies or tools used to build the system. An example of this could be what specific programming language or specific database the system will use.
* Resource limitations will also be an issue in regard to the various types of hardware being used by both DriverPass and the customers. The system needs to be as efficient as possible to work on devices with the lowest amount of hardware resource.
* Funding can also be a resource limitation as the client will need funding not only to pay for the development of this system but also the maintenance after it has been implemented.
* There can also be time limitations to develop and implement this system as DriverPass may want to get a system like this running before any competitors try and do the same thing.

### 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.*

Timeline

Description automatically generated