# 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 owner of DriverPass, Liam, has observed that many students of driver’s ed fail their driving tests at the DMV, and that this proposed for-profit system from DriverPass may have a place in the market to help remedy this situation.
* The client, DriverPass, wants to develop and deploy a cloud-based web service (system) which provides driver’s education and driver training to customers (driver’s ed students) who are looking to eventually take their driver’s license test at a DMV.
* Customers of DriverPass will use the DriverPass web service to select one of three packages from DriverPass which allows them to choose either on-the-road training, in-person lessons on DMV protocols, online education, or a combination thereof.
* The purpose of this project is that through DriverPass’s training and education, the likelihood of students passing their driver’s ed testing at the DMV will increase.

### 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 I stated above, the owner of DriverPass, Liam, wants the system to provide a variety of adequate education and training choices for people who are looking to take their driver’s license testing at the DMV. This way they have a better chance of passing their DMV tests.
* The problem they want to remedy is that too many prospective students are failing their DMV tests, and the owner of DriverPass, Liam, has proposed a service (DriverPass) to do just that. The hope is that DriverPass will provide adequate training and education so that those who enroll in DriverPass will then pass their DMV tests.
* Different components needed for this system:
* The system needs to be web-based, preferably running off the cloud.
* The system must be cross-platform compatible, so that the owner, Liam, can access data online from any conventional device he chooses. He needs to be able to download reports that he can view and edit in Excel and other spreadsheet programs.
* Role-based access must be implemented at an administrative level for employees, with Liam having full access over all accounts. This way he can reset their password or block their access from the system if necessary.
* Tracking capabilities over all activities including reservations, so that Liam can print activity reports if necessary.
* Customers must have the ability to create, modify, and track reservations, using both the online service and a phone via secretary.
* The system must always be updated with current DMV rules, protocols, and policies. This way the tests, practice, and training are aligned with current DMV requirements and expectations.
* The system’s user interface must align with Liam’s model of what it should look like.

### 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 provide the customers of DriverPass with the ability to create and modify reservations, both online and over the phone. Given the condition that one customer’s reservation time doesn’t overlap with a different customer’s reservation time.
* Measurable tasks which need to be included:
* The customer must have the option to choose between one of three unique packages which suit their preference. The details of these packages were stated in the interview transcript.
* As I stated above, role-based access on the administrative level must be implemented properly. This is mandatory for the system to function properly according to Liam’s requirements.
* The user interface (dashboard) intended for customers, aligned with Liam’s expectations, must be designed and implemented. This interface is what customers will use when they login to the online service.

## 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 terms of its environment, the DriverPass system needs to run off the web, preferably over the cloud. This way it can be accessible through a variety of conventional devices which are capable of internet access. Those devices may range from a laptop computer to a mobile phone.
* The system should run at the fastest, most optimal speed for all its users that its cloud-based web service permits.
* The system should automatically check for updates daily, so that it constantly stays up-to-date and compatible with DMV regulations, along with its necessary host software.

#### 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?*

* Since the system will be distributed via a cloud-based service, it should be capable of running on any conventional platform (operating system) which is widely used by the public to access the internet. That includes Windows, Mac, Windows, Android, etc.
* Yes, on the back end, a database linked to Liam's provided interface blueprint is necessary. This database will contain all the user information that is displayed and requested via the interface blueprint.

#### 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?*

* Different users will be distinguished by login credentials. Each user, including staff and administrators, will be required to create their own unique login credentials. Those being e-mail and password.
* Users will also have role-based access to the system, so that administrators, staff, and customers have different levels of access to the system and its moderation.
* The inputs should be case-sensitive, so that credentials are more unique.
* After three failed log-in attempts, the system should automatically inform the admin via either an internal system message or via e-mail of the attempts. This way the security of the system is always in check for potential external threats.

#### 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?*

* Users at the administrative level should be able to make changes to user accounts without changing the code but should also be able to change the system's code if they choose to do so. For example, the owner of DriverPass, Liam, needs the ability to add/remove/modify user accounts at any time. However, the IT Officer, Ian, should also be able to modify the code if they choose to do so.
* The system should automatically search for platform updates daily. This should be a provided feature on the part of its cloud-based web service provider.
* The IT admin needs a high enough level of access to maintain and modify the system as needed.

#### 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 a user to log in, acceptable credentials are required. Those being unique e-mail and a case-sensitive password. 2FA (two factor authentication) should be optional.
* To secure the data exchange between client and server, use an encryption protocol. In this case, either SSL (secure sockets layer) or TLS (transport layer security) over HTTPS. Access to DriverPass's online service should be done entirely over HTTPS.
* If there is a brute force attack detected by the system, the account should automatically be logged out, locked out, and flagged until IT Admin has a chance to review the situation and decide what to do with that account.
* If the user forgets their password, a "reset password" link should be available upon visiting DriverPass's user login section. If a user chooses this option, they should then receive an e-mail which contains a newly generated password that they can use to log in with. Upon logging in, if they wish to change their newly generated password to something else, then they should have the option to do so under their account settings.

### 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 credentials when logging in.
* Allow users (customers) to choose from one of three packages.
* Allow the owner to access all data online from any computer or mobile device.
* Generate data reports ready for offline download by the owner. These data reports must be accessible by programs like Microsoft Excel.
* Allow full access to all user accounts by owner, so that they can be modified or removed at any time.
* Generate activity reports ready for print and download by owner. These activity reports will keep track of who made reservations, who canceled reservations, and who modified reservations.
* Allow customers to make, modify, or cancel reservations online.
* Allow the tracking and identification of cars, driving instructors, and reservations, so that the system can keep track of which user is matched up with a certain driver, time, and car.
* Allow for role-based user access. The owner, the IT Officer, the secretary, and the users (customers) will each have different levels of access and capabilities within the system.
* Allow for the disabling of a package if the owner doesn't want any more customers registering for it.
* Allow customers to register either over the phone or online.
* Allow customers to schedule appointments either over the phone or online.
* Allow customers to reset their password online.
* Automatically update to the newest DMV rules and requirements daily.
* Implement the owner's provided user interface.

### 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 system interface needs to be the dashboard that customers see when they log in to their account online.
* The blueprint for the interface was provided by the owner in the interview and needs to contain the following information: online test progress, information (first name, last name, address, city, state, zip, phone, e-mail), driver notes, special needs, driver photo, student photo.
* Online test progress shows the tests the customer took, including test name, time taken, score and status. Driver notes will include lesson time, start hour, end hour, and driver comments.
* The different users of the interface are Customer, Owner, IT Officer, Secretary, Driver.
* Customers must be able to enter their information and photo into the interface, as well as view online test progress. The Secretary must be able to enter customer information into the interface if customer registers via phone. Driver must be able to enter their notes and photo into the interface. The Owner and IT admin must be able to view the interface at any time and make changes if necessary.
* User will interact with the interface via their device of choice, which may range from a laptop computer to a mobile device.

### 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 main assumption is that the customer has reliable internet access so that they can access DriverPass’s website.
* The other assumption is that the customer's device has the capability to properly load, display, and interact with DriverPass's interface.

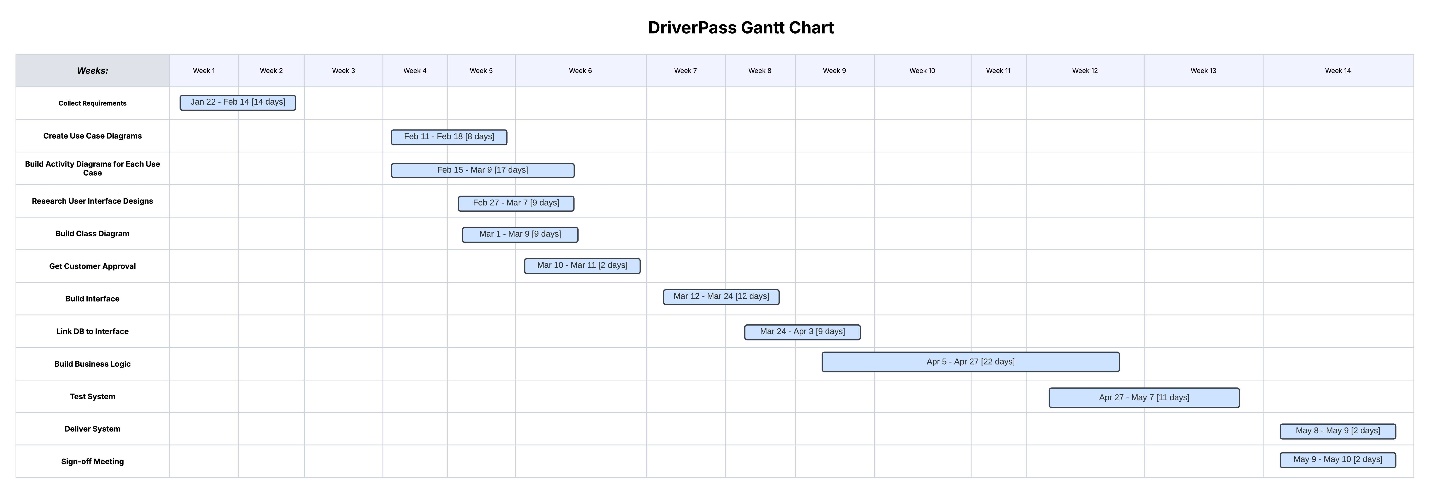
### Limitations

*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?*

* Neither a budget ceiling nor a timeline was established by Ian, the owner of DriverPass in the interview. However, a schedule was planned and established by the consulting company, and later a Gantt Chart was developed based on this schedule plan.
* Because of this, there technically would be no limitation on either budget or timeline other than what was established in the Gantt Chart.
* However, there are a total of 5 people working on the system design and implementation. Therefore, the number of staff and their knowledge is the only real limitation on the system.

### 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.*

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