# 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 is DriverPass.
* The client would like to fulfill a hole of many driving test applicants failing their driving exam. They want to accomplish this by creating a system where people can sign up to take practice exams and even in person practice driving sessions with a driving instructor.

### 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 wants the system to be able to allow users to create an account and sign up for a package over the phone.
* The users should be able to view their account online and view the status of their past, current, and upcoming courses and exams and road tests. This information should be available offline so a downloadable copy of these reports should be available to the user.
* This system will help solve a problem with 65% of students failing their driving exam since they did not have the materials to study to prepare for the exam.

### 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?*

**Objectives**

* The client wants to have access to all the data in the system from any location on PCs and mobile devices. The system will need to be able to format all the data into a spreadsheet and allow the system admin (Liam) to download this report when needed.
* The system will require different users with different levels of access. There should be customers, employees, IT Admins, and system admin.
* The system admin needs to have the ability to reset any user’s password and needs to be able to de-activate accounts.
* Needs to keep records of reservations and actors (who did what to a reservation). Actions that will need to be tracked are create reservation, modify reservation, and cancel reservation. The name of the actor will also need to be captured. The system needs to have the ability to make this into a report upon request of the system admin.
* The employees will need the ability to be able to create new customer accounts. This is required for customer registration when they contact this service. They also require the ability to make or modify reservations for customers. When registering a customer, the system needs to require first name, last name, address, phone number, state, credit card number, expiration date, security code, customer pick up location, and customer drop off location (which will be the same as pick up location per the system admin).
* The drivers will need to be able to access the system and enter notes for the customer.
* The customers will need the ability to access their online account to be able to make or modify reservations.
* The reservations will need to include the name of the customer, the date and time, the assigned instructor, and the vehicle that will be used.
* The system will have three packages available initially and the system admin will need the ability to easily remove or re-add these packages to their service.
* There will be connections to the DMV’s database to ensure that the system has the most up to date information from them.
* Needs to be run in the cloud.
* The customer portal needs to contain the following information to display to the customer: tests in progress and taken. The attributes for test need to be the following: test name, time taken, score, and status. The customer information to be displayed are first name, last name, address, city, state, zip code, phone number, and email address (these are just some). It should also contain the customer’s photo and the assigned driver’s photo. If any special needs are required, that will need to be displayed. If the driver has left any notes for the customer, it must also be displayed in that portal with the lesson time, start and end hour, and the driver’s comments. The company’s logo needs to be displayed on the top of the page. The company’s contact info should be available in the page as well. It should also display when the customer is logged off as well.

**Goals**

* Collect requirements from the client.
* Build use case and activity diagrams.
* Research user interface designs.
* Develop the class diagram.
* Collect the client’s approval of the diagrams and interface design.
* Build a database table and link to the interface.
* Build business logic.
* Test system.
* Deliver to the client and sign off.

## 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 need to run in any browser on PC or any desktop and laptop.
* The system will need to run on mobile browsers on smart phones or tablets.
* It should not take more than 10 seconds to load the web page and for the customer to sign into their account. It should not take more than 10 seconds for an employee to create a new account. It should not take more than 10 seconds for the customer to receive a response from the system when they try to create or modify a reservation.
* The system needs to update the fastest possible so that current information is available to the system admin, employees, and customers.

#### 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 a Microsoft Windows platform.
* The database should be based off Microsoft SQL.
* Users will likely be managed using Windows Active Directory.
* A Windows platform would be easier to handle as it will not require too much command line management and most of the tasks can be performed through the UI.
* The system admin’s office software will work better with a Windows platform since they are both Microsoft’s products (Microsoft Excel for downloaded reports).

#### 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 system will need to have different levels of users. Going from lowest to highest: customer, employee, IT admin, and system admin.
* Every user will require a unique ID as many users will likely contain the same first and/or last name.
* The system should alert the admins of a problem if a user has been locked out of their account, if the system has failed to update or when it has not updated after some time, when connection to the DMV’s database has been lost, or when the system loses connection to the database.

#### 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?*

* The admins will need to be able to modify user accounts for employees and their permissions and information which can be done easily in Active Directory if that is used to manage employees.
* The IT admin and system admin should be given the ability to manage any user in the system, including customers.
* The IT admin will require the ability to manage users and the ability to manage the server and database and apply updates 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?*

* The user will need to log in using a username and password.
* The log in page will need to use an encrypted connection between the client and the database to ensure the information passing through is not compromised.
* If the account experiences a brute force hacking, the system will need to lock the account out and instruct the customer to contact the company for further assistance. The company will have to unlock the account from their side after verifying with the customer that it is safe to do so.
* If the user forgets their password they should be able to easily reset it by contact the company, using a “forgot my password” link if they have provided an email address, which will make the system send an email to the customer’s email address with instructions on resetting.

### 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 the user’s credentials when logging into the system.
* The system shall generate a unique user ID for any new user created.
* The system shall create a new login for customers when their accounts are created and send them their username and temporary password to their email with a link to the website and instructions on getting signed in.
* The system shall check in the database when a reservation is made to ensure that there are enough resources available (drivers available and vehicles available) to fulfill the reservation request.
* The user shall alert the customer and the employees (upon the employee looking at the customer account) if the customer’s credit card expires or when they have a past due balance.
* The user shall have periodic reminders for the customer to make sure their contact information is up to date about once a year.
* The system shall display the required information on the customer’s portal.
* The system shall update the database with any reservation changes as soon as they are made to ensure accurate information.
* The system shall notify customers to refresh their web page (or automatically do it every x minutes) while making reservations if the web browser was idle for too long. This is to ensure that the information that the customer is seeing is updated in the event where an open time slot is no longer available due to another user taking it while the web page is open showing that time slot but just because the web page has not been refreshed. The system will still verify the time slot is available and if no longer available, it will return an error message to the customer stating that the selected time slot is no longer available.
* The system shall load the customer’s information upon logging into the customer portal.
* If a customer’s account is locked out, the system shall notify the admins.

### 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 users will need to interact with the system using a web browser.
* The employees will have separate page for employee log in.
* The employee portal will have the ability to search for customers, modify customer’s information including reservations, create new customers, and block/unblock customer accounts.
* If the employee is a driver, they will have similar access as the employees but cannot modify the customer’s information or reservations or block/unblock. They will be able to search for customers and see which ones are assigned to them and which have upcoming reservations with them, they will be able to modify the vehicle selection as needed, and they will be able to add notes to customer’s accounts which will be visible on the customer portal.
* If the employee is an admin, they will have all the functions of the employee plus the ability to manage and create/delete employees, delete customers, download reports, modify packages, and modify the company contact information that is shown on the company’s web page.

### 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 require the cloud service where the platform will run to have reliable uptime.
* The users will need internet access and an up to date (or not too outdated) browsers. This applied to mobile device users.
* The users will have at least one working phone number and at least one email address where they can be reached.
* The customer will show up to pick up location on time and be available during full time of session.
* The system will have reliable connection to the local DMV’s database for any updates.

### 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?*

* The system will be limited to applications that Microsoft SQL will support.
* The client wants minimal involvement with the architecture of the system so it must run in the cloud where those items will be taken care of by the cloud service.
* The system can only be accessed via a web browser.
* The system will only have three packages initially due to time constraints and per request of the client.

### 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 screenshot of a social media post

Description automatically generated*