# 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 project is for our client DriverPass. The purpose of the project is to provide online training, mock tests, and on-the-road training if needed for people who are looking to get their license or those who have previously failed their driving test so that DriverPass can reduce DMV test failures.

### 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?*

* Our client is asking us to make them a website application that provides online driver’s training to customers and manages appointments for in-person lessons.
* DriverPass observes a need for better driving; they intend to fix this with their online classes and practice tests through this website.
* The system will be held on multiple servers over the cloud and be accessible online.
* There should be four different access levels for each kind of employee to make sure employees only have access to what is necessary for their role.
* The client wants to receive updates to the DMV requirements.
* The client wants to be able to disable a package when they no longer wish to provide it.
* The client wants to be able to track the history of all changes made to reservations.
* The client wants to be able to view the driver's notes and have them visible to customers.

### 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?*

* The system should provide the **customer** access user with the following functions:
  + Create profile
    - The user can create a profile for the website that includes:
      * First name
      * Last name
      * Address
        + State
      * Phone number
      * Credit card information
        + Expiration date
        + Security code
        + Credit card number
      * Pick up and drop off locations
  + Choose package
    - Allow the user to choose a package, which will affect what study material they have access to.
  + Take a class
  + Taking a test
  + Request for on-the-road training
    - Allow the user to set a time slot and day
    - The user can choose a driver
    - User can set a pickup location
    - The user cannot choose a date and time when a driver already has a reservation. (no double booking)
  + Cancel on-the-road training request
  + Modify on-the-road training request
    - Users can modify the day, time, pickup location, or driver.
  + Password reset
  + Check class progress
    - Shows the customer's progress in class or classes.
* The system should provide the **full** (admin) access user with the following functions:
  + Access permissions
    - Edit user permissions to give or revoke access to certain functions
  + Download reports
    - Accessible from a mobile device or PC
    - Reports should be downloadable in any format.
  + Access requests
    - Show requests received from customers that include this information:
      * Customer name
      * Time requested
      * Pickup location
      * Driver requested
      * Car being used
    - Printable activity report for any changes to requests
  + Manage drivers
    - Each driver has a profile that includes:
      * Name
      * Appointments
    - Driver profiles can be modified
  + Manage users
    - Lists of customer profiles
    - Customer profiles can be modified
  + Manage packages
    - Disable packages
  + Manage cars
    - Each car has a profile that includes:
      * Car number
      * Appointment history
  + DMV notifications
    - Users should receive notifications when the DMV makes changes to requirements in real time.
* The system should provide the **secretary** access user with the following functions:
  + Create profile
    - The user can create a customer profile (see customer access section)
  + Manage requests
    - Shows a list of requests
    - User can make an appointment (no double booking)
    - User can edit appointments
  + DMV notifications (see admin section)
* The system should provide the **driver** access user with the following functions:
  + Edit notes
  + Manage requests (see secretary section)
  + DMV notifications (see admin section)

## 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?*

* Pages should load within 2 seconds.
* The system should support many users making inputs at the same time.
* The system should run as a web-based application.
* The system should be updated in real time.

If the pages don’t load promptly, students may get frustrated and quit, which is why load times need to stay short. One way of ensuring load times don’t drag out is by making sure the system has the resources to handle thousands of user inputs at the same time. With all the users simultaneously trying to schedule lessons, take tests, and edit existing reservations, it's important that the system updates in real time. This way, we can avoid double booking, and everyone knows what times, drivers, and cars are available at any given time.

#### 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 will be hosted on the cloud (maybe Linux).
* All data will be collected in cloud storage.
* The system needs to be accessible from a computer or mobile device.
* The system should only be accessed with an internet connection.

The client specifically asked that the system be run on a cloud platform, so back-ups and security are handled by a third party. The client also needs somewhere to store data since they don’t have access to those kinds of resources without a provided service from a third party, and the cloud offers storage with backups and security. The client requested that the application be accessible on a computer or mobile device; some people may only have access to one of them, so it is important for the system to support most browsing devices for accessibility purposes. The system shouldn’t be accessible offline since this will risk duplication of data.

#### 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 should keep track of all reservations made or changed.
* The system should update specific users when the DMV changes its requirements.
* IT should be notified about server outages, crashes, and data breaches as they happen.

Tracking what reservations are made and changed allows the admin to stay informed on what their schedule will look like, so the manager can make sure drivers get to where they’re supposed to be on time and make sure they have enough cars to handle the number of drives scheduled. The system needs to send notifications to all users except customers so the staff know about any DMV requirement changes so they can adjust tests, on-the-road training , and courses as needed. Since accidents do happen, IT needs to be notified when any sort of problem occurs with the website, like a server crash, so IT can work to get the web app back up and running.

#### 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 system should support the latest version of popular web browsers.
* The system allows admins to remove packages that are no longer offered.
* The system should allow users to create and edit their profiles.
* The system should allow admins and secretaries to edit reservations.
* The system should allow admins to modify tests and other course material.

The system should be updated to support the latest version of all common internet browsers for full user availability. Allowing the admins to remove packages prevents customers from enrolling in classes that are no longer offered; the Availability of drivers may change, so some packages may need to be removed to reflect that. The website should have a registration page for customers to create their login and profile, and specialized invites should be emailed to employees to allow them to create their login and profile, so no changes to code need to happen. There should also be a page dedicated to editing user profiles so they can change their address, payment information, password, or phone number if needed. Admins and secretaries should have the ability to add and modify reservations, as drivers may call out sick or change their availability after a reservation has already been made. The system should also allow admins to change the course material since DMV requirements may change.

#### 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?*

* Each user should have different usernames and strong passwords.
* A special link can be sent via email or text to allow a password reset.
* The system should have a set number of login attempts.
* An admin should be notified if too many login attempts are made.
* The system shouldn’t store or show full card numbers.
* Sensitive data should be encrypted at rest.

All users have unique usernames and passwords to identify who is logging in and what kind of access they have. People can forget their passwords, so to let customers safely reset their passwords, links can be sent to their phones or emails so they can click on them and change their passwords. For employee password changes, those can be made by admins. The system should only allow for a set number of login attempts; this can prevent people from trying to guess someone’s password to get into their account. The admin should also be notified if too many login attempts happen on a username so they can track suspicious activity. In the event of a cyber attack, obscuring card information could prevent customers' cards from being stolen.

### 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 customers to create a profile.
* The system shall allow customers to select a training package that determines which materials they can access.
* The system shall allow customers to take online classes and practice tests.
* The system shall allow customers to request, cancel, and modify on-the-road training lessons.
* The system shall allow customers to reset their passwords if forgotten.
* The system shall allow customers to view their class and test progress.
* The system shall allow administrators to edit user permissions and manage user accounts.
* The system shall allow administrators to download and print reports from any device.
* The system shall allow administrators to manage driver profiles, car profiles, and disable lesson packages.
* The system shall allow administrators and other users to receive DMV notifications when new requirements are released.
* The system shall allow secretaries to create customer profiles and manage lesson requests on behalf of customers.
* The system shall allow drivers to manage their assigned requests and add notes for each lesson.
* The system shall allow the IT officer to reset or block user accounts when necessary.
* The system shall allow students to view driver comments and lesson times after lessons are completed.
* The system shall provide a contact form or page for customers to reach out to DriverPass staff.
* The system shall allow the admin to view which driver, car, and customer are assigned to each reservation.

### 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 interface runs through a web browser.
* It will have a student registration and login page.
* The student home page will display driver notes, student information, special needs, online test progress, as well as a photo of the student and the driver they were assigned.
* After an admin logs into their home page would show student data, reports, as well as packages.
* For admins, there will be a page to manage employees and their information/access.
* For the secretary, there will be a page for creating student profiles and managing reservations.
* The online test score page should show the test name, the time it took to take, the score they got, and the current status.
* There will be a contact us page where DriverPass contact information is shown.
* For the drivers, there will be a page for contacting students and leaving notes.
* For students, there should be a page for choosing a package.
* For users, there should be a page for editing profile information.
* There should be a page for password resets.

### 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?*

* All users have internet access.
* The DMV will provide a way to send notifications on requirement changes.
* New packages may need to be added or modified later.
* DriverPass will want to add features later.

It is assumed that all users will have reliable internet access since the system is entirely web-based. The design also assumes that the DMV will provide a method for sending updates or notifications when requirements change. Because Liam mentioned wanting to customize lesson packages and potentially add new system features in the future, it is assumed that DriverPass will request package adjustments and additional features after the initial release.

### 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?*

* DriverPass has a budget.
* DriverPass has a time constraint.
* Only developers can add or modify modules.
* The system cannot be used offline.

DriverPass has both budget and time constraints, which limit how many features can be developed in the first release. Staying within these limits keeps the client satisfied and prevents extra costs for our company. Only developers can add or modify system modules, as Sam explained during the interview, meaning future changes will require technical support. Finally, the system cannot be used offline, since Liam agreed that offline access could cause duplicate data and tracking issues.

### 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 graph with multiple colored bars

AI-generated content may be incorrect.*