# 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?*

* DriverPass is a company that needs a new system that will aid student driver training through online information and classes combined with in-person lessons and in-car driver training.

### 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?*

* The system will aim to help improve student driver training so that the driver test failure rate will go down.
* The system will need to be able to track scheduling, canceling, and modifying appointments for student drivers, and it will need to maintain reports tracking information on the students’ basic information and progress in the training. It will need to be able to access the DMV to maintain up-to-date policies and rules.

### 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?*

* Design goals:
  + Online reservation system
    - Sign up for the training programs
    - Schedule, cancel, modify appointments
    - Ability to pay online
  + Online library containing all relevant information the student drivers will need to study and that will automatically update from the DMV as changes are made
  + Online classes the students can take to cover the material
    - Online practice test system will be included in the classes
  + Online accessible records system that stores all relevant information for the student driver and the in-company users
    - Student Driver information will include name, address, phone, and credit card details as well as user security permissions
    - In-company user security permissions will be stored and be maintainable by the IT officer and owner.

## 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 should be a web-based service that runs off a PaaS (platform as a service)
* The system needs neither top-of-the-line speed nor does it need to be bare minimum. A middle-of-the-road approach should be sufficient to handle the requirements.
* The system should be updated as soon as possible when errors or vulnerabilities are discovered. Other than that, there is no current future update schedule.

#### 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 all major operating systems.
  + Using a browser-based approach written in JavaScript should cover the major browsers
* Databases:
  + A user database needs to be maintained.
  + A driving lesson database for reservations and appointments needs to be maintained.
  + A learning materials database needs to be maintained.

#### 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 have unique user ID’s based on email/phone
  + Either can be used to login
* Information will not be case-sensitive except for passwords as an added layer of protection
* I.T. admins should be immediately notified via text/email whenever an issue arises with the system

#### 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?*

* User information will be maintained in the User Database
  + Allows changes to users without having to update the code
* The system will be modular and employ abstraction layers to allow it to be updated easily
  + Modularity will allow pieces to be added and taken out relatively quickly
  + Abstraction will allow frontend and backend to communicate without needing to be inextricably connected
    - Updates can be performed on either side without adversely affecting the other

#### 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?*

* Access will be encrypted end-to-end
  + Login:
    - Requires username and password
    - Multifactor identification will increase security but with the option to allow for a trusted device
      * Email
      * Phone number (text or call)
    - Temporarily lockout the user if the credentials are entered incorrectly too frequently.
      * Can be bypassed with the multifactor ID via email and text
    - User enabled reset for passwords allowed with multifactor identification
  + Access to the modify databases will only be allowed to the authorized users
    - Owner and IT administrator will have full access
    - Secretary will have access to modify the customer database to assist with registration and appointments
    - Customers will have access to their own personal entries via the website user interface

### 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 credentials when logging in.
* The system shall allow the creation/deletion/modification of user accounts.
  + The system shall allow the owner and I.T. admins to create/delete/modify any type of user account.
  + Customer Accounts:
    - The system shall have a customer registration page.
    - The system shall allow other employees to create/delete/modify any customer accounts.
    - The system shall allow customers to create/delete/modify their individual customer account.
    - The system shall maintain customer information.
      * First and last name
      * Address
      * Phone number
      * State
      * Credit card information
        + Card number
        + Expiration date
        + Security code
      * Customer photo
    - The system shall allow the scheduling/cancelling/modifying of appointments for hands-on driver education sessions by customers and employees.
      * The system shall allow modification of the driver education packages.
      * The system shall maintain a record of notes by the driving instructor.
      * The system shall maintain a record of pickup/drop-off locations for each appointment.
    - The system shall maintain a record of any special needs by the customer.
  + The system shall allow the creation of driving instructor accounts.
    - The system shall maintain a driver photo for each driving instructor.
    - The system shall maintain notes the driving instructor has on each customer.
  + The system shall allow users to automatically reset their passwords.
* The system shall maintain a database of instructional information for the customers’ access.
  + The system shall allow the customer to browse the study material at leisure.
  + The system shall allow the customer to access practice tests if they are included in their current package.
    - The system shall maintain a record of the status of the tests, whether they have been attempted, how far the customer has progressed, whether it has been passed or failed.
  + The system shall check for database updates from the DMV on a daily basis.
* The system shall track all changes made to any part of the system and be able to compile them into respective reports.
* The system shall allow the downloading and uploading of reports for the owner to work on.

### 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 will need to support different types of users
  + The owner and I.T. admins will need to have full access to the entire system allowing them to make any changes and troubleshoot as needed.
  + The secretary and any other regular employees will need to be able access the customer database to allow them to create/delete/modify customer information and appointments.
  + The customer will need to be able to create and access their own account to update their personal information and appointments.
    - The customer will need to be able to access the training material and take practice tests if they are available to them.
  + The users will access they interface via web browser whether they are on a mobile device, laptop, desktop, or tablet.

### 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?*

* It is assumed that the users will have a decent level of technical knowledge to be able to successfully navigate the site and work within the system.
* It is assumed that the customers will have internet access if they are electing to sign up for the package(s) that includes study materials and tests.
* It was not addressed that the customer will need to have a minimum of a driver’s permit in order to participate in the driving sessions.

### 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 by being online only. If the online service goes down, there is not a way for anyone to access it until it is restored.
* Requiring the system to be cloud-based limits what can be done for customization. It will also increase the cost of maintaining even if it does reduce technical overhead for the I.T. admins.
* The development of the system will be restricted by whatever features are available on the selected cloud service.

### 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 boxes

Description automatically generated with medium confidence