# 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 purpose of this system design is to create a web-based platform for DriverPass that provides driver training through online classes and practice tests, as well as on-the-road training in order to help drivers pass the driver test at the DMV.

### 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 background of the proposed system is to assist drivers in passing their driver test at the DMV. DriverPass noticed many people fail their driving test at the DMV. This has revealed a need for better driver training. DriverPass hopes to accomplish this by providing on-the-road training, as well as access to in-person and online classes and practice tests.

This system will:

* Provide clients with access to online classes and practice tests
* Enable clients or administrators to schedule, cancel, or modify appointments for in-person on-the-road training.
* Allow an administrator to access the system from anywhere
* Allow an administrator to reset account passwords, or revoke access to the system.
* Allow an IT officer to access and maintain the system.
* Allow clients to purchase one of three instruction packages.
* DriverPass will ensure that they remain compliant with DMV rules, policies and procedures by receiving a notification when the DMV makes an update.
* Clients will be able to see their progress in online classes and results of their practice tests online
* Clients will be able to see driver notes, as well as the times for their lessons.
* Clients will be able to reset their password automatically.

### 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 will provide clients with the ability to:

* Create an account.
* Log in to an account
* Add or modify information
  + First and last name
  + address
  + phone number
  + state
  + email address
  + credit card information
    - credit card number
    - expiration date
    - security code
  + pick up and drop off location
* Purchase one of three packages:
  + Package one:
    - Six hours in a car with a trainer.
  + Package two:
    - Eight hours in a car with a trainer
    - An in-person lesson on DMV rules and policies.
  + Package three:
    - Twelve hours in a car with a trainer
    - An in-person lesson on DMV rules and policies.
    - Access to an online class will all content and materials and practice tests
* Schedule, modify, or cancel a reservation for in-person driving lessons with one of ten drivers online.
* Take online classes and practice tests.
* View class and practice test progress and results.
* View driver notes and lesson times
* Rest password

The system will provide administrators with the ability to:

* Schedule, modify or cancel reservations for clients
* Add or modify client information
  + First and last name
  + Address
  + Phone number
  + State
  + Credit card information
    - credit card number
    - expiration date
    - security code
  + pick up and drop off location
* Reset passwords for clients.

The system will provide the head administrator with the ability to:

* Disable packages when no longer required.
* Add or remove new administrators.
* Reset passwords for administrators.
* Generate and print activity reports on who made, modified, or canceled a reservation.
* Update online materials
* Receive updates from the DMV when changes are made to the DMV requirements

The system will provide the IT officer with the ability to

* Access and maintain the system

## 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 run in a web-based cloud environment.
* Load times for users should not exceed 2-3 seconds.
* User should be notified of load times exceeding 3 seconds.
* System should be updated monthly or as needed.

#### 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?*

* System is web-based and as such it will work on Mac, Linux, or Windows operating systems.
* Browser development will be considered for
  + Internet Explorer
  + Google Chrome
  + Firefox
  + Opera
  + Safari
  + Microsoft Edge
* System will be hosted on a cloud server
  + Amazon Web Services
  + Microsoft Azure
  + Google Cloud
  + IBM Cloud
  + Oracle
  + Ect.

#### 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?*

* System users will be distinguished by a username or e-mail and password
  + Usernames and e-mail must be unique
  + Passwords must be case-sensitive
* System will distinguish users based on assigned role
  + Client, Administrator, Head Administrator, IT Officer.
* System will lock out user and notify administrator of log-in issue after 5 failed login attempts.

#### 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?*

* System will allow clients and administrators to create accounts.
* Users will be able to modify own account data through form submission/POST requests.
  + Name, address, phone number, state, credit card information, pick up and drop off locations.
* Users will be able to delete own account
* Head Administrator will be able to delete accounts or revoke user access to the system
* User browsers are expected to update continuously. This will typically not affect backend code or user experience.
* In the event that a browser update affects system behavior, an update or patch will be made.
* System updates will be done as features and bug fixes are completed through agile scrum development.
* Updates will be deployed only during off-peak hours to mitigate user impact.
* IT Officer will need full access over accounts to update user passwords or remove access of former employees.

#### 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?*

* User is required to provide unique username or email and case-sensitive password to access account.
* Network requests will be made through Hypertext Transfer Protocol Secure (HTTPS) to provide a secure communication between client devices and back-end applications
* Sign-in form submissions will be made through HTTPS POST requests
* Sensitive data (credit card information, address, ect) shall be encrypted before transmission across networks.
* Incorrect log-in attempts exceeding 5 shall result in user account being locked preventing “Brute Force” hacking attempts.
* Password reset requests shall be handled by the user. These requests will require entering an e-mail address attached to an account. If a matching account is found a password rest link will be forwarded to client email.

### 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 upon log in
* The system shall be web-based.
* The system shall allow modification of data via internet only.
* The system shall track user activity in regards to reservation modification.
* The system shall provide detailed activity reports in regards to reservation modification.
* The system shall initially list three DriverPass package types
* The system shall allow individual packages to be disabled by the head administrator.
* The system shall accept client details for account registration
* The system shall allow users to reset passwords
* The system shall notify administration upon updates of DMV rules or guidelines
* The system shall allow client to view instructor feedback as well as appointment times.
* The system shall allow administrator to update or modify practice tests and educational materials.

### 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 include the following pages
  + Home Page
  + Account registration
  + Course material access
  + Driving lesson registration
  + Student interface
    - Student information
      * First name
      * Last name
      * Address, city, state, zip code
      * Phone
      * Email
    - Test progress
      * Test name
      * Time taken
      * Score
      * Status
        + Not taken
        + In progress
        + Failed
        + Passed
    - Driver notes
      * Driver comments
      * Lesson times
        + Start hour
        + End hour
    - Special needs
    - Driver photo
    - Student photo
* The users of the interface and their access will be
  + Owner (head administrator)
    - Ability to print activity logs
    - Ability to update user passwords
    - Ability to modify administrator access to system.
    - Ability to update learning materials
  + IT officer
    - Ability to modify system
    - ability to update user passwords
  + Secretary (Administrator)
    - Ability to access driver schedule
    - Ability to create, cancel, or modify appointments.
    - Ability to create or modify client accounts.
  + Customer/students (client)
    - Ability to create or modify own account
    - Ability to create, modify, or cancel appointments
    - Access to learning materials
    - Access to driver notes and appointment time
* System is web-based, so interface interaction will occur through desktop or mobile web browsers.

### 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?*

* Assume client has reliable access to internet.
* Assume client is reasonably technologically literate.
* Assume client has access to e-mail services
* Assume DMV system is consistently kept updated with current rules and requirements.

### 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?*

* System will not function if cloud services are not available.
* Time and budget constraints will determine the number of staff assigned to project.
* Current skill of staff may impact release date.

### 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 computer

Description automatically generated*