# 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 wants a web application developed to manage and schedule training for driving students, preferably in a cloud environment to minimize company interaction with errors and security, and maximize the time for business requirements.
* DriverPass needs the system to register customers with the company, schedule driving appointments with trainers, allow customers to purchase consolidated training packages, and make training and scheduling data accessible and reportable.

### 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 is trying to help customers who are having difficulty passing the DMV tests for receiving their drivers license. They want to offer a system to manage and schedule training both online and in person, and report that information to both the company and the user.
* Onboard new customers via phone, or through a web interface
  + Capture customer’s First Name, Last Name, Address, Phone number, State, Credit Card information, and pickup and drop-off location
* Access company information from any computer or mobile device
  + Ability to download company information to home devices for working at home
* Assign user roles to allow or restrict different types of system access, such as
  + Administrators should have full access to all systems; able to restrict access for others
  + Schedulers should have the ability to make and change reservations
  + Customers should have the ability to change passwords and schedule appointments
* All record modifications made should be tracked, and a clear report should be able to be generated from the activity logs
* Training status should be tracked via the web portal
* Notifications should be generated when the DMV makes changes to policies

### 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?*

* Ability for users to register online or over the phone
* Users need to be able to schedule appointments or cancel them online
* Users are able to see their online test progress, driver notes, and driver information
* Users are able to purchase packages offered by DriverPass
* DriverPass users able to disable or enable training packages
* DriverPass users allowed to manage scheduling for users, including changing, creating, and cancelling appointments
* DriverPass users allowed to download company data and reports offline
* Application should log all changes made to records

## 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?*

* DriverPass will consist of a web-based application, consisting of a front and backend
* System should be updated at least monthly to be compliant with the goal of limiting cyber threat vectors
* System will require enough resources to maintain user accessibility at all times. Being setup in a cloud environment, virtual machines can be spun up and spun down as demand increases or decreases, and allows for variability in server performance.

#### 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 site should be accessible from all platforms that support modern internet browsing capabilities, which includes mobile devices. The site should recognize a mobile browsing experience and tailor it accordingly through interface changes.
* A database would be required to store user testing information, account information, and other tracking necessities like audit reporting and financial 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?*

* Users will be assigned unique usernames to correspond with database table entries based off their full name, as well as different roles associated with their accounts as well. Usernames will not be case-sensitive, but the associated passwords will be. Users will also set 3 challenge questions.
* Admins should be notified when a login has failed after 3-5 tries, or when the logging system discovers that a user’s role associated with their account has changed to a higher tier.

#### 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?*

* Changes will be made without changing code through the development of simple, built-in tools in the site for administrators to use. These tools will allow actions to be taken on the backend database without any direct code modifications made.
* The system will have a connection to the DMV through their news portal, wherein changes made to their portal will trigger an email to our staff that the DMV has published something.
* IT Admins will require access to create/manipulate user accounts, directly access backend systems (database, auditing system), and have the ability to login and manage the cloud provider hosting.

#### 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 the user to login, they will be provided a unique username either through a conversation on the phone or via the web portal. The user will then be sent a temporary password to their provided email address, which they will change after login.
* To secure the connection we will utilize certificates over the latest version of TLS. This will help secure data-in-transit between the client and the server.
* Users will have 3-5 attempts to login to their account. If they fail to do so within that many tries, their account will be locked. To fix this, they’ll have to call the office during business hours and answer challenge questions, or click a link to reset their password via an automated help service, where the user types in their unique username, and the service sends a temporary email to that user’s email address.

### 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 ensure and verify that usernames are unique for each new user
* The system shall provide the faculty notifications upon DMV changes on their website
* The system shall provide 4 different user roles: System Administrator, Staff, Helpdesk, User
* The system shall provide a scheduler that matches users with drivers on the specified days, along with car and appointment time
* The system shall provide the ability to update backend databases from any device with a modern browser, or download that data.
* The system shall monitor changes made and write them to a secure database that hosts all user record changes
* The system shall allow users to make available reservations that don’t conflict with other reservations that is has in its table
* The system shall record user test and class scores and make them available for viewing
* The system shall enable administrators to disable driving packages
* The system shall provide an automated service for resetting forgotten passwords and sending them to email

### 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 provide different requirements depending on the user. For regular users:
  + Toolbar on the top with quick links
    - Home Page:
      * Their test progress
      * Their current contact information / address
      * Driver notes left from previous drives
      * Special needs the driver has
      * Photo of the driver
      * Photo of the student
      * Link to online training
    - Link to Calendar with upcoming training dates and times
    - Financial page, including package information and payment status
* Admins/Staff/Helpdesk will see a page with a table of users along with possible actions, such as modify, delete, create, and also view and modify the scheduler through a calendar interface
* Admins/Staff will be able to see a page where full records can be pulled for users

### 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?*

* Future packages may be required by the owners which may require specific changes
* All users will have a modern device that allows for using modern browsers (edge, chrome, firefox, etc).
* System failures and backups will be handled by the cloud provider
* Data will be encrypted on the backend
* System will be accessible at all times unless notified of an outage by the cloud provider

### 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?*

* Time doesn’t allow for more flushed out feature set, such as changing out payment packages
* Cloud resources can become expensive quickly, so an aggressive auditing for scaling out will need to be in effect to not over-provision resources
* Limited amount of drivers/cars
* Changes will need to be made whenever the DMV comes out with changes for drivers

### 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.*

