# 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, DriverPass, is a driver’s education business seeking help in designing and developing a system solution. This new system will focus on providing flexible training classes and practice tests as well as on-the-road training services to help students better prepare for their driver’s test.

### 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?*

* There are holes and voids that DriverPass has found in the market of driver’s education, ultimately leading to higher and unnecessary amounts of failed tests. To solve this, DriverPass is proposing to develop a web application and system that will focus on providing easy to use and accessible training material and instructor-led sessions to better prepare students for the driver’s test and hopes to lower the amount of failed tests. This system will be accessible to users via a web application, in which there will be user authentication to allow for users to dynamically track their individual progress.

### 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, when completed, should allow users to access their accounts via user authentication and keep track of their progress, register for ne sessions, access online material, and access practice tests from any computer or mobile device. To achieve this, here is a list of features as described during the interview with the client:
* Access to data from any computer or mobile device
  + Downloadable reports compatible with excel
* Add user authentication and user permissions based on role
  + Owner – Full Access
  + IT Officer – Full Access – Responsible for system maintenance, modifications, etc.
  + Secretary – Appointment Creation and Modification Access
  + User – Appointment Creation and Modification Access (user only)
* Data Tracking – Tracking modifications by date and name (EX. Who modified a reservation, who cancelled, who last modified something) – Basically an activity report.
* Add Session registration for new users (Accessible for users to create via online or through a phone call)
  + Name (First and Last)
  + Address
  + Phone Number
  + State
  + Credit Card Number
  + Pick-up and Drop-off locations
* Add reservation system
  + Users Name
  + Assigned Car
  + Assigned Driver/Trainer
  + Scheduled Time
  + Scheduled Date
  + Date of the processed booking
* Add three package options (All sessions are two-hour sessions)
  + Package One – Six hours with a trainer
  + Package Two – Eight hours with a trainer and in-person lesson going over DMV rules and policies
  + Package Three – Twelve Hours with a trainer, an in-person lesson going over DMV rules and policies, and access to all online material and practice tests.
* Add a package enable/disable button on each package to allow for each individual package to be enabled or disabled for purchase.
* Add a notification tab when DMV has updates on all documentation (Policies, Rules, Sample questions)

## 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?*

* This system should incorporate a cloud-based web environment in order to optimize performance, utilize real-time updates and data, and include immediate availability of information. This includes the following:
* Real-time appointment scheduling, preventing duplicates, instant availability checks, and instructor viewing.
* Immediate feedback, displaying test scores upon completion.
* Frequent updates, including the ability to modify driving packages and ensuring ongoing compliance with DMV regulations.

#### 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?*

* To ensure that this system is accessible to a wide range of users, this system should be incorporated not various platforms (Windows, Mac, and Unix-based systems). For more accessibility, it should also incorporate a web-based option as well to reach an even wider range of users.
* Additionally, this system will require a few dedicated databases to handle user information, payment methods, employee information, and appointment details. With that, backend frameworks can be utilized to ensure that the development process is efficient and smoothly incorporated, connecting both the front and backend of the system smoothly.

#### 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?*

* This system will utilize specific login routing and login methods to ensure that each user is provided the data that fits the permissions of that user. To do this, it is best to incorporate case-sensitive passwords to ensure security is present, while not requiring case-sensitive usernames. This will ensure a balanced experience for the user, adding ease of use, while incorporating important security measures.
* Additionally, for admins, the system will inform any and all admins of any issues that might arise such as, but not limited to, payment issues, user detail issues, employee access issues, etc. This will utilize real-time updates to ensure that admins are notified immediately and can swiftly correct any issues, ultimately ensuring an effective and efficient operation.

#### 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 will allow for user updates (add/remove/modify) to happen without the need to change code by incorporating and utilizing a user management UI within the Admin Management Panel. This panel will be a separate web-page only accessible to admins, where necessary changes can be made including user data. This system will utilize version control software and various programing practices to ensure that the system remains up-to-date. Finally, the IT Admin will have administrative access, providing access to tools like the Admin Management Panel, where they will be able to monitor performance, make necessary changes, and resolve any technical issues.

#### 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 login side of the system will require the user to register a unique email, username, and password in order to create an account. Multi-factor Authentication can be implemented and opted-in by the user via their profile to add security to their account. Additionally, the connection for data exchange will happen on an HTTPS connection, incorporating a valid SSL encryption cert as well as include data hashing for select information with the database to ensure that all data exchange from client to server side is secure. In the case where an attempted “brute force” hack, the account should lock down after a few failed attempts and an email and/or text will be sent to both the account holder and the admin team notifying them of suspicious activity. For users who forget their password, there should be an option to reset the password, which will then ask for the email/phone number that is connected to the account the user is trying to login to. From here, a link will be sent to that email or phone number, where the user will then enter the received validation code and reset their password.

### 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 login information.
* The system shall allow for appointment scheduling without issues.
* The system shall provide and offer three different package levels.
* The system shall allow instructors to update users feedback information and test scores.
* The system shall showcase all tests taken by the user and the status of those tests.
* The system shall allow users to update their information such as name, email, password, payment methods, etc.
* The system shall showcase real-time scheduling availability.
* The system shall allow admins to remotely access data.

### 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 should incorporate a user-friendly, highly accessible, and responsive UI that is accessible to both mobile users and desktop users (via desktop app or web browser). With that, the design of the interface should be designed with mobile access at the forefront and designed from there. Users might include students, instructors, Admins, and other various employees of different permission levels. The student will have access to purchase packages, take practice exams, view test results and performance feedback, etc. The instructors will have access to view and update schedules as needed, update test results and feedback details, and update their availability. As for Admins, they will need access to monitor and update all user information, receive updates about user issues, monitor performances, update scheduling, etc. The user will interact with the system via either a downloadable mobile app or mobile web browser, or via a desktop app/web-based application on a browser.

### 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 primary areas missed within my design above were areas such as detailed security measures, detailed accessibility plan and implementation for disabled users, and offline functionality running in the background. It is assumed that users will have a basic understanding of how to navigate a web page or mobile app. It is also assumed that the user has a working, stable internet connection to access the application. Finally, it is also assumed that the chosen cloud provider will handle real-time updates and other features run on the cloud provider, as well as provide a stable data storage area.

### 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?*

* This system does include a few concerns that may arise. One major concern is that the system depends heavily on the users ability to maintain a stable internet connection, which may result in loss of users that have a poor internet connection Another concern that may arise is whether the system can handle high volume traffic. High volume of traffic from users may cause performance to slow down and may also lead to a possible server crash if not monitored carefully. Additionally, we have constraints that pertain to resources such as time, budgeting, and availability. A limit on funding may cause a loss on incorporating necessary advanced features that may help the system in the long-term, and limited time can hurt the team in their ability to manage and support the system efficiently and effectively.

### 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 blue rectangles

Description automatically generated