# 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 overall purpose of driver pass is to develop a system that is easy to use and access that helps students prepare for their driving exam through online classes, driving appointments, practice tests and study material to help improve their chances of completing the driving test.

* Offer in person and online training options - the client wants to offer a way to schedule driving appointments through their app with their basic package. As well as offer a way to schedule in person lessons about DMV rules and policies and finally offer a method to access online classes with material including practice tests.
* Different ways to access data - A method to access data online from mobile devices and computers with the ability to download reports and information to allow work to be done using excel.
* Track user data - A method to track users reservations and cancellations so each driver will know who they are working with
* Different levels of access to program - Client wants different levels of access to the program, such as administrative role to allow the changing of user data if something goes wrong in scheduling or someone's account is locked. An IT role that can make changes to the system as needed and a secretary role that allows the modification of appointments on users accounts. Finally a user role that allows the individual to edit their appointments as they wish.
* Stay up to date with DMV changes and requirements - The client wishes to be in contact with the DMV and receive regular updates about changes they make regarding the Driving curriculum.
* Different packages and options - The client wishes to have a method to set up new packages and remove old packages that are at capacity.
* User profile management - A customer should be able to reset their password and schedule the appropriate things according to their package. As well a user should be able to edit their personal information and it updates in the system.
* Cloud storage management - The client wishes for the system to run off the web and utilize a cloud for data management. They wish for it to back up and security to be as hands off as possible so they can focus on running their business.
* Progress tracking for students - The client wishes for customers to view their progress and achievements they have accomplished on previous tests.

### 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 wants to help improve passing rates of students taking the driving exam, they aim to do this by providing the necessary tools and supplemental material needed to help students achieve this. They want to bring flexible packages to the customers to allow them to select what they need to ensure their success through in person driving lessons, online tests and online lessons about DMV material.

What the system wants to achieve:

* Flexible training methods - offer online training material including tests and lessons through their app and offer in person driving lessons that the user can schedule whenever they want.
* Easy access and use - Allow for the use of the app through multiple platforms such as mobile and personal computers and allow the access of the system with online and offline use.

Components needed for DriverPass:

* Training options- The app must support online scheduling of in person driving lessons and the ability to access practice exams and resource material that is up to date with DMV requirements
* Scheduling - The app must be able to handle scheduling from the user which includes setting a time, modifying the time and canceling appointments. This should be able to be done through their app or through the secretary role which allows a person to call the business.
* Different levels of access - The system must have an admin role that has complete access to the system, an It role that can make changes and modify the system, a secretary role that can schedule and modify appointments and, a user role which can schedule and modify appointments for themselves.
* Remote data access - The app must allow the downloading of data and it must be able to be used in a program like excel so work can be done offline.
* DMV updates - The system should be able to be updated easily when new DMV requirements are received, all relevant information should be changed so data is within compliance of new DMV standards.
* Cloud based storage - The app should utilize cloud based infrastructure to handle user data and provide a hands off minimal approach to security of users.
* Progress of accomplishments - A method for users to see their progress of tests and their high score of previous tests taken.
* Packages - The app should have the ability to offer different packages that each offer different features within the app.

### 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?*

* When complete the system needs to offer flexible training options which will allow students to schedule and manage their own appointments. While allowing the user access to different resources and tests both online and offline that are up to date with DMV standards. DriverPass should have different levels of access through the various roles outlined and maintain a high level of security through cloud based storage. DriverPass should be easily customizable through different packages that can be removed or changed based on availability or demands.

Measurable tasks:

* User account management - Allow users to register for an account with their personal information and allow changes to be made as necessary
* Roles and security - Establish different levels of access and make sure each permission is set accordingly. The Admin role should have full access to the system, while IT should have the ability to make changes. Secretary should be able to schedule appointments and make modifications while the user role should only be able to interact with data and scheduling with themselves.
* Training material and progress tracking - Online resources and practice tests should be available to the user and progress should be tracked through the app to display highscores or completed tests.
* Appointment scheduling - Users should be able to schedule and modify driving appointments through the app, when a user does this a driver should be assigned to that appointment so schedules are known and employees are given accurate information
* DMV updates - When a new DMV requirement is released old information should be updated and replaced so customers receive all up to date information
* Package management - Different packages should be able to be added, edited or removed easily through the proper roles, packages should have a way to stop being available if it is at capacity.
* Cloud based storage - The program should be run through a cloud that will store user data and backups to ensure as much uptime as possible.
* User interface - The dashboard should be easy to navigate that will display test scores, driving appointments and accomplishments they have made through their studying

## 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 program should run in a web based environment and be able to be run within all the popular browsers, such as Chrome, Firefox and Safari.
* The overall speed of the program should not require a user to wait more than a few seconds for something to load while the program is not under maximum user capacity.
* Overall the program should check for updates each day during non peak user hours, this will prevent as many interruptions as possible and make sure its information is the most current available.
* Overall the system should be able to support a large user base and its capacity should be able to be upgraded easily with little effort.

#### 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 overall should run on all 3 of the major platforms, Mac and Windows have a lot of users and would reach most users in the market but the amount of Linux users are on the rise and would be foolish to not have the ability to corner that market.
* The program will require a tool to handle user data, a relational database would be ideal, something like MySQL could handle user data while not putting too much strain on the servers.
* If something like Node.js were utilized the app could use API Handlers to manage user data easier again reducing strain on the network.
* For hosting the application It would be best to use a cloud based service, larger companies like Google and Amazon offer relatively cheap hosting rates compared to buying your own infrastructure.

#### 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?*

* In order to distinguish different users it is best to use an email or username and offer a way for multi factor authentication for better security.
* Things like usernames do not have to be case sensitive but passwords should be case sensitive to heighten security of the app.
* The system should inform the admin when issues are happening connecting to the network, someone has failed their login attempt a large number of times and when overall the program is experiencing latency issues beyond the usual delays of regular use.

#### 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 IT admin should be able to add/remove/modify a user without making any code, this can be done through a web based interface and added during the initial development phase.
* The system should be able to handle platform updates with regular compatibility testing while server tools should be updated every few months to make sure nothing breaks.
* IT admins should have full control over user profiles, package editing and disabling, and should be able to monitor logs for activity.

#### 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?*

* Users should be able to login using their username and password, a password should use secure practices and require a minimum number of characters, including a special character and a number. 2 factor authentication should be encouraged but not required.
* While logging in the data should be encrypted to ensure that no personal data is leaked and remains confidential.
* To prevent brute force attacks a user's account should lock within so many failed attempts and alert an admin about the excessive failed attempts.
* if a user forgets their password they should be able to reset it through their email. If requested a user will receive an email link to reset their password that expires after a certain time such as an hour.

### 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.”*

* **User Management:**   
  1. The system shall validate users information when logging into it  
  2. The system shall allow users to reset their passwords if they forget them with email  
  3. The system shall have different access based on roles with admin, IT, secretary and user.
* **Scheduling:**  
  1. The system shall allow a customer to schedule and cancel any lessons they may have through the app  
  2. The system shall allow the secretary to create or cancel any reservation the customer requests  
  3. The system shall assign drivers for reserved lessons and a car suitable to their needs.
* **Packages and progress:   
  1.** The system shall allow customers to select what package best fits their needs .  
  2. The system shall display customer progress on tests, and worksheets they have taken.
* Reporting and system logs:  
  1. The system shall log modifications done to reservations by user and secretary  
  2. The system shall create a report of all user actions that has occurred within a certain time frame when requested by an admin
* DMV integration:   
  1. The system shall update its material to keep up to date with all recent changes in regards to driving test requirements.
* Communication:   
  1. The system shall have a way for a customer to contact staff if there is a problem.  
  2. The system shall send reminder emails to the customer of scheduled appointments.

### 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 needs to be intuitive to use and user friendly to navigate while being available on desktop and mobile devices and offer features that can assist people who have trouble with reading text through a device.
* **different users:   
  1. Customer:**   
  Register and login to their account  
  Schedule and cancel lessons  
  View their progress and scores of tests  
  select a package most suitable to their needs  
  contact staff is an issue happens  
  **2. Secretary:**   
  login and manage customer reservations  
  register a user over the phone and create a profile for them  
  assign a driver and car for lessons   
  schedule lessons for users  
  **3. Admin role:**   
  Monitor overall system logs and activity  
  Manage packages for the app  
  Manage user account permissions and information  
  Create activity reports
* Both users and admins should be able to interact with all of these features through 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?*

* Users are assumed to have basic internet knowledge and know how to interact with a web interface. while secretaries and admins will receive training for advanced features.
* Customers are assumed to have connection to the internet and a supported browser for the system, and staff will have devices that meet minimum requirements to handle requests.
* Users will have their own email address and be knowledgeable on how to use it.

### 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 most likely be launched on a web browser before the mobile app is developed.
* The system will only be able to handle a user base and features based on their budget. A smaller budget will limit the maximum user size and different features.
* Current timeline in the transcript limits the amount of time for testing and this may result in bugs and limitations on features.

### 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.*

