# 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 is Liam, the owner of DriverPass, assisted by his IT officer, Ian.
* DriverPass is a company dedicated to assisting its customers with passing driver’s license exams.
* DriverPass needs a system built to facilitate their business, to include the following:
  + Register and track users
  + Study materials to better chance at passing tests
  + Take practice tests in an online portal
  + Register for classes
  + Allow customers to buy a package of their choice

### 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 provide services to enable more people to pass their driver’s license tests by providing a multi-pronged approach consisting of study materials, practice tests, and practical driving training.
* DriverPass needs an app, a server, and a backend management tool or menu to be able to maintain and update the app.
  + The system needs to keep track of customers
  + The system needs to allow for registration and package purchasing
  + The system need to provide access to online options for practice tests and study materials
  + The system needs several access levels for different types of users
  + All information in the system should be up to date with the DMV and their standards and requirements
  + The system will need methods to manage in person appointment scheduling and training

### 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 must have different assignable roles with accompanying privileges.
  + Administrator should have complete access over the entire system
  + Employees should be able to make changes for users on most aspects of the systems such as appointment reservations and account details
  + Customers should be to create and manage details about their account, including purchases of packages, making and changing appointments, and accessing appropriate resources
* The system must allow the making, canceling, and modifying of appointment reservations.
* The system should track available driver instructors and students and who is assigned to who.
* The system must allow for multiple package types for customers to choose from. These packages must be flexible so they can be modified for business demands later if necessary. (Feature does not need to be present initially, but Liam would like the ability to at least disable individual packages)
* The system needs an automatic password reset system.
* The system must ideally interface someway with the DMV standards and regulations to notify if there are significant changes to the laws and regulations for driver’s licenses.
* The system should be a web-based app hosted on a cloud service provider.
* The system should have a function from admins and employees that allows pulling logs to see system activity.

## 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 must be a web-based app, and as such should run at a quick, stable speed.
* Stability is essential, since customers need constant access to learning materials, practice tests, and scheduling capabilities. As such, updates should be regular and frequent to ensure that there are no bugs or instabilities in the system, but they should be as non-intrusive as possible.
* The system must also stay constantly updated with new DMV changes and information to make sure that DriverPass is offering the most up to date training possible.

#### 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?*

* As a web-based application, the app should be able to run on any device and any web browser, particularly the big ones like Chrome, Microsoft Edge, Firefox, and Opera.
* The backend system is hosted on the cloud, and will require no specific physical system.
* A database will be required for cloud hosting to handle everything from customer account information to learning material hosting.

#### 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?*

* The system should use an authentication method for users based on email and passwords set up at account creation.
  + Both of these should require case-sensitivity in order to add deeper, more thorough security to the user accounts
* Admins should be notified if multiple failed attempts are made to access an account, or if the password recovery features fail.

#### 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?*

* No code changes should be required to add, modify, or delete users. The database should be able to handle all of that without any hard coding required.
* Because it is cloud based, the system should have a smooth update process. The client-side app should not require any changes, and instead updates can be rolled out on the server side.
* The IT admin will need access to the entire system, specifically user account, passwords, and details.

#### 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?*

* A user will need to have created a valid account to log in, and must provide the email and password selected at creation.
* Connection security can be maintained with common internet encryption protocols, such as HTTPS protocol and SSL/TLS encryption.
* To prevent “brute force” hacking attempts, a user should be locked out after 3 failed password attempts. From this point, the admin should be notified, and the user must either reset their password or wait a certain amount of time before they can attempt to log in again.
* There will be a password recovery/reset feature that utilizes e-mail authentication to ensure that it is the proper user asking for the password reset. Two-Factor authentication is also an option to add to the system to further increase security.

### 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 when logging in.
* The system shall allow users to edit their details and passwords.
* The system shall allow users to view and purchase packages.
* The system shall allow users to make and change driving appointments.
* The system shall allow administrators and employees to edit user information.
* The system shall allow administrators and employees to change available packages and disable them if necessary.
* The system shall allow administrators and employees to print logs and reports to see system activity.
* The system shall store and allow access to study materials and a testing environment for practice exams.
* The system shall be always available online, with the option to download certain resource for off-line study.
* The system shall be able to accept updates to account for both bug fixes and DMV updates.

### 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.)?*

* Interface is a web page in the form of a web-based app on mobile devices or computers.
* Main screen shows a logo, company information, and prompts users to register or login.
* External Users:
  + Online test progress window
  + Customer information box(first name, last name, address, city, state, zip, phone, email, etc.)
  + A driver notes section
  + A special needs box
  + A driver photo and a Student photo
  + A menu to edit their account, including resetting their password.
  + A menu to schedule driving lessons
  + A menu to buy different packages
  + A menu to access learning materials and tests
* Internal Users:
  + See progress of individual students
  + A menu to edit a student’s account information
  + A menu to set, confirm, and edit appointments for students
  + A menu to print logs and reports
* Admin:
  + Full system access, with abilities and menus to create, edit, and delete users
  + A menu to access system settings and statistics
  + A menu to print logs and reports

### 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 customers possess a phone or computer to access the app with.
* It is assumed that the customers have gone through proper legal channels to acquire driving permits and such as required.
* It is assumed that the system will remain accessible at all times for customers.
* It is assumed that customers possess proper internet connection to use the system.

### 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 is limited by its reliance on internet connection and cannot be accessed it without one.
* The system is limited in the amount of time that can be scheduled for appointments, because DriverPass only has 10 cars and 10 drivers.
* The system is limited by DMV regulation and policy.
* The system is limited by the production timeline. Further desired features will need to be implemented at a later date.
* The system is limited by DriverPass’ insistence on a web-based app in a cloud architecture.

### 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.*



