# 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?*

* Client: DriverPass
* Purpose: Better support student drivers for passing their driving exams as more than 65% fail to pass.
* Features: Online courses, live instructional courses.

### 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 their system to perform the following:
  + Offer appointments for live instruction courses.
  + Offer in-person courses/on the road training.
  + Offer practice tests for students to prepare for the real exam.
* The problem DriverPass wants to address, and fix is the lack of new drivers passing their driving exam and repurpose how driver training is handled compared to previous iterations.
* Components for the system include the following:
  + 10 cars and 10 drivers
  + Instructors
  + A web-based application that stores user data (i.e., basic information, course information, etc.) that are current with DMV regulations.
  + An online reservation system for offered packages.
  + Backend and database layers which would be included in the system.
  + Reporting for reservations including the ability to create, modify an existing reservation, or cancel.
  + Offline access to these reports.
  + Multiple system roles including Owner, IT, Officer, Secretary, and customer/students.
  + Appointment scheduling for in-person driving lessons.

### 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?*

* A user should have the ability to create an account.
* A user should be able to reset their password if need be.
* A user should have the option to choose between 1 of 3 offered packages.
* A user should have the ability to create, modify, or cancel an existing reservation.
* A user should have access to online course materials from any device connected to a network.
* A user should have the option of taking a practice exam at any point.
* The system should track user progress on practice exams.
* The system should store user data and allow modification of user information.

## 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 needs to run in a cloud-based web environment.
* The load times should be fast for users, between 1 and 2 seconds.
* The system should provide feedback when the load time exceeds 3 seconds.
* The 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?*

* Given the system is cloud-based, it should run on all platforms (Windows, Mac, Linux, etc.).
* Browser development should be implemented for mainstream browsers (i.e., Chrome, Firefox, Microsoft Edge, etc.).
* The backend will require a database (DB) to store user data and information.
* The backend will also require a web server to help process and manage certain requests and responses.

#### 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 in the system DB will be uniquely ID’d via password-protected accounts.
* A user’s username and password will be part of authentication.
* A user in the system will be assigned a role designated to their authorization level within the system (i.e., a user will not have the same authority as an IT level role).
* User input will be case-sensitive for better protection on a security level.
* A limit on incorrect usernames and/or password attempts will lock an account for a specified amount of time for better security purposes.

#### 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 to a user will be made on the backend to avoid having to modify or change code.
* The system should handle and adapt any platform updates without any issues.
* An IT admin will require access to the DB and web server to maintain and/or modify the system as needed.

#### 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 password is required for a user to login to their account.
* To secure the connection or data exchange a two-faced authentication process will be implemented.
* A user will be locked out of their account for a specified amount of time after a set number of username/password attempts that are incorrect combinations.
* If a user forgets their password, a “forget password” option will notify an admin to allow that user to 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 a user’s credentials when logging into their account.
* The system shall distinguish the difference in user role levels (i.e., whether the user is a basic user, or admin user).
* The system shall allow password resets for a user upon request provided proof of username and/or email.
* The system shall allow a user to attempt login over a set number of incorrect username/password combinations, otherwise the user will be locked out of the account and an admin will be notified.
* The system shall create an account based on a user’s entered information.
* The system shall allow access from anywhere and any device if it is connected online.
* The system shall display package options to the user to choose from and then purchase.
* The system shall allow an admin level account to disable a package that has reached its capacity.
* The system shall track a user and who they are matched with in terms of driver, car, and time.
* The system shall remain connected with the DMV to be updated with new information as needed.
* The system shall display user information, exams, and course progress.
* The system shall display notes provided by a driver.
* The system shall display user photos and driver photos.
* The system shall allow a user access to online learning tools as needed.

### 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 user interface will include the following directories:
  + Home Page
  + Registration Page
  + Course Materials
  + In-Person Lessons Page
  + Student Information Page (This page will contain test progress, driver notes, contact information, etc.)
  + DriverPass Contact Page
* The following are the system access levels:
  + Owner – full access to the accounts, can update/reset passwords.
  + IT Officer – full access to the accounts, can update/reset passwords.
  + Secretary – access to scheduling/reservations including creating, modifying, or canceling reservations.
  + Customer/Student – access to account creation, access to learning/course material, and access to scheduling/reservations including creating, modifying, or canceling reservations.
* The application is web-based therefore interaction will occur via web browser. This could be mobile versions of browsers on phone or tablet, or computer based. There is no current app version of DriverPass for Android/iPhone.

### 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?*

* All users have access to the internet 24 hours a day, 7 days a week (24/7).
* All users will understand website navigation.
* Admins have the skill to access all functions and features as needed.
* Customers/users will be on time for lessons every day as scheduled.
* Drivers will be available when a lesson is scheduled.

### 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?*

* With only 10 cars, each car needs to be properly maintained and up to date on repairs, oil changes, etc.
* Issues with internet connection can cause delays and/or downtime with the website.
* A limit on packages offered occurs due to the limited number of cars available.
* A user may not have updated their browser to properly run the website.
* Meeting and maintaining all requirements and functions asked by DriverPass within budget and time range.

### 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.*

