# 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, wants to provide students with access to online practice exams and on-the-road training to better prepare them for driving tests.
* The system will offer multiple learning packages to users that the user is able to choose from, including:
  + Online classes
  + Practice tests
  + On-the-road training
* The system will stay up to date with current and new DMV rules, policies, and sample questions for practice 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 recognizes the need for better driver training when observing the number of people that fail their driving tests at the DMV.
* The system should be web-based.
  + Cloud server (serverless architecture so client can focus on running the business)
* Notifications from DMV about rules, policies, and sample question changes and updates.
* User appointment reservations.
  + Lessons last 2 hours.
  + Reservation should include day and time of lesson.
  + Record car and driver the user is scheduled with for tracking purposes.
* Customers can also call into business to get their information put in, which can then be seen in the system.

### 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?*

* Users can create an account, choose, and purchase a package, and set/modify/cancel appointments.
* Users can create reservations for driving lessons.
  + Lessons last 2 hours.
  + Reservation should include day and time of lesson.
  + Pick from multiple different packages. Client has three packages:
    - Package One: Six hours in a car with a trainer.
    - Package Two: Eight hours in a car with a trainer and an in-person lesson where they explain the DMV rules and policies.
    - Package Three: Twelve hours in a car with a trainer, an in-person lesson where they explain the DMV rules and policies—plus access to their online class with all the content and material. The online class also includes practice tests.
* Authorization and Authentication for user roles
  + The owner has full access to all accounts.
    - i.e., tracking, resetting passwords, blocking users from databases and system
  + The owner wants the ability to disable packages from being sold to customers if necessary.
  + The IT officer have access to system maintenance.
  + The secretary has access to modifying appointments and user accounts.
  + Users can schedule, modify, and cancel appointments.
* Able to access data from anywhere, online, and offline.
  + Will not be able to update data offline.
* Must use a cloud-based server.
  + Server contains database of user accounts and their appointment information.
* User interface created using DriverPass’ layout which includes:
  + Logo
  + Online test progress
  + User information (first name, last name, address, city, state, zip code, phone number, email … etc.)
  + Driver notes
    - Lesson Time
    - Start Hour
    - End Hour
    - Driver Comments
  + Special needs
  + river photo
  + Student photo
* Available online to both desktop and mobile devices.

## 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 will need to run on all browsers and support compatibility with pc/mac and mobile devices.
* The application will be cloud based and can adapt a 99.9% uptime guarantee which will allow about 2 minutes a day dedicated to updates and maintenance.
* The use of RESTful APIs will allow the program to be scalable to promote performance while reducing overloading and crashing.
* The application should be able to run offline and collect all the required data, while updating and connecting to the server when online.

#### 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 should be able to run on any platform that is compatible with the browsers that the system runs on. This can include browsers like edge, google chrome, safari, opera.
* The Back End will require a database. The database could be serverless to allow IT more opportunity to focus on updates to the server for better stability.

#### 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?*

* All usernames should be unique. Case-sensitivity should be limited in usernames so usernames are not the same with just a different case (i.e. tristanmaloy vs TristanMaloy should throw an error).
* The system should inform Admins when there are multiple failed attempts to login amongst multiple users at the same time. This can alert the admins of a potential hacker.
* Admins should be alerted when the system goes offline, as well as when any modifications were made to appointments such as reservations and cancellations.

#### 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?*

* There should be classes specific to making changes to users.
  + IT and Secretary should have access to all users
  + Users should have access to modifications of their account only
* The system is web based and connects to a cloud to update data.
* IT admin will require access to help maintain and modify the system.
* 99.9% uptime guarantee to allow only 2 minutes per day of downtime dedicated to updates and server maintenance.

#### 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?*

* Program utilizes RESTful APIs for authentication to grant or deny access based on user account.
* Use HTTPS for secure data transfer by encrypting data as it travels from the client to the server.
* User accounts will be protected with strong passwords that require upper and lower case, numbers, and special characters for higher security.
* Accounts will also require a passkey or two factor authentication to deter “brute force” hacking.
* If a user forgets their password, they can send a single use “reset password” link to one of their primary forms of communication (mobile cell phone or email).

### 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 have authorization that supports multiple roles including admin, IT, secretary, and user.
* The system shall allow users to make and maintain appointments.
* The system shall offer multiple packages for the user to choose from.
* The system shall support reporting via excel.
* The system shall include registration information such as user PPI including address and payment information.
* The system shall share data such as pickup location, drop off location, and any comments that the user or driver may have about the appointment.
* The system shall update when DMV updates their compliance, rules and policies.

### 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 will include
  + User information
  + User photo
  + Driver photo
  + Special needs
  + Online test progress
    - Completed and current tests
  + Driver notes
* Input form where the user or secretary inputs user information.
* Contact page
  + Page for users to contact company
  + Page for company to contact user.
* UI needs to be adaptable to the platform the user is connecting through (mobile or desktop).
* All roles not including users should have access to all user information (users only have access to their own information).

### 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 updated mobile technology that is compatible with current and future updates of the program.
* There will be language options for non-English speaker.
* Users will show up at every appointment on time.

### 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 program will only be updated when online
* Timeline supports limitation to be 100% complete with launch by May 10th.
* Budget was confirmed or discussed.
* Application will need to be compliant with DMV policies and rules.

### 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 screenshot of a calendar

Description automatically generated*