# 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 wants to create software to train students through classes learning to drive through the DMV. The software is to help decrease the amount of students that fail the exams.

### 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?*

* The system handles internal and external users so at least two different interfaces. The external users which are students should be able to select a driving program and schedule classes that include a car and instructor. Also the students can call or go inside the DMV to select a program and schedule classes. Internal employees like assistants can schedule walk-in students and students that call on the phone. The assistant will collect personal information like name, address, age, and billing information. The admin can review reports of what the internal employees are doing and track who is setting up, modifying, and deleting appointments and external users. There is the potential for the programs to be modified or deleted by the admin. This is something that is not easily achievable without code alterations. The software should be able to allow users internally and externally to download data in order to view records offline through storage. The software is to assist with allowing students to sign up to driving programs that will allow them to pass the test at the DMV.

### 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 can show who signed up for driving programs and which programs were chosen. What can be measured is to see if the driving programs have any positive effect on students passing the exams versus students who do not take the program training. What could also be measured is if any of the three programs produce better results, the more time spent in the program, the better the results in passing. The company will then be able to examine if they need to modify or eliminate programs that are not successful in passing students.

## 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?*

* How fast the software can run and how it responds with active users at once
* Use tools that validate recommended performance speed and standards
* Responses should be less than 7 seconds for transactions over the network
* Web-based application, should also be responsive(mobile friendly) and accessible anywhere via PC or phone
* 99% uptime rate
* Database backups

#### 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 application has front end client (UI) and a backend (server) along with a relational database
* Users would be using different devices so Linux is an open source platform that could be used to develop the application which can then be containerized so that the application can be used on any device regardless of personal user hardware
* Verify that techstack can integrate or meet DMV protocols and standards (API supported)
* OS and the versions that are supported with tech stack

#### 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?*

* Validation checks would be implemented on form and input fields for data accuracy like password strength, valid email, certain amount of characters or special characters
* Input does not need to be case sensitive, there will be a function to remove whitespaces and make text lowercase before using this data in database
* Form information would be sent to the server and the server would check if the user already exist or would need to be created as a new profile.
* In the database there will be a user\_role column that determines if the user is an admin, driver, or regular user.

#### 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?*

* an admin interface that allows to CRUD a user
* System is cloud based and performing updates affects up/downtown so consider how often updates will occur
* IT admin should have access to cloud services, database, and the software
* There could be a feature for changing modules without changing the code (if time allowed for feature to be built)
* Support multiple languages
* ADA compliant

#### 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?*

* All data within the system needs to be protected against malware, data breaches, and unauthorized access
* Any payments made need to be PCI compliant using payment gateways
* User profiles would be stored in a database. 2FA should be implemented in regards to achieving an extra layer of security
* Require strong passwords with validation checks to meet requirements
* The database can authenticate a user based on their role signaling what the users have access to see and do within the application (CRUD)
* Limit login attempts if wrong password is entered too many times
* Secure database access to IT admins
* Use security services such as anti-virus, malware protection performing recurring scans of the system
* Log IP addresses that access the application and check them daily
* Routinely clear out inactive user profiles after X amount of time

### 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 respond to user GET actions within 7 seconds.
* The system shall allow access from PC or mobile devices online from anywhere
* The system shall allow downloads of data for offline use
* The system shall allow users to create a new account or sign in
* The system shall validate their credentials and the credentials should be encrypted from the database
* The system shall allow admin user to CRUD accounts
* The system shall allow users to create and manage driving reservations
* The system shall notify admin when a user makes a reservation change
* The system shall allow secretary to create reservations on behalf of users
* The system shall log who, what, when, and why when it comes to reservation alterations, additions, deletions.
* The system shall record what driver, car, time, and date is associated to the user(driver)
* The system shall allow 3 packages to choose from
* The system shall allow an admin to disable a package that cant be used to register
* The system shall ask for first name, last name, address, phone, state, payment details, pickup and dropoff locations in order to make a reservation
* The system should connect to DMV and send notifications back in regards to DMV policy changes
* The system shall track driver comments and progress of class in regards to pass, fail, in progress
* The system shall allow users to access a contact page to contact support for questions and concerns
* The system shall notify admin of reservations, user changes and deletions
* The system shall notify IT of maintenance issues

### 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.)?*

* Login/Registration page to create an account
* Create admin, secretary, IT, user roles
* Admin can view and modify user profiles, user reservations, driver details, notes, comments, and identifying information
* Users can view their personal profile, change reservations, add reservations, driver details
* IT user can access the system as admin
* Secretary can add users, modify reservations, delete them but cannot modify user profiles and driver details
* These features should be PC and mobile friendly

### 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 system supports multiple languages and disability needs
* All Users know computer basics
* All Users have reliable and high speed internet

### 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?*

* Working offline and how that integrates with updating data online
* Information being upload to the system, certain file types that are not supported
* Time seems short to build all aspects in interface and connect the database
* Supporting database backup costs and how long information is retained
* Browser incompatibilities or restrictions

### 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.*

