# 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
* Problem: They need to address the need for better driving training experience due to high percentage of people failing their driving test at DMV.
* Purpose of the project: the purpose of this project is to provide a system to allow people experience a better virtual training with live instruction.

### 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 would like to offer a system to allow online appointment scheduling/rescheduling, along with online courses and in-person training.
* DriverPass is looking to solve the gap in training and driving skill development. The system will facilitate the driving skill training to improve DMV pass rates.
* Required components:

1. An application that stores course material, online instructions, DMV rule and regulations, stores user information and appointments.
2. 10 or more vehicles and instructors.

* Offline access to scheduling reports.
* Reservation report tracking (schedule, modify, cancel).
* Role based Access and authentication.

### 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?*

* Allow users to create accounts.
* System should authenticate the user with the username and password.
* Allow user to modify account and reset password.
* Allow user to view and select one of the available instruction packages.
* User to be able to view course material from any device.
* The system should keep track of users’ progress and support user as needed.

## 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?*

* This is a web-based system running on Linux and serves various browsers.
* The application needs to run network reliance activities such as accessing materials and send forms to make reservations and update user accounts.
* The system’s database should update on progress made on the exam materials, user account created or updated, reservations made/updated/canceled or completed and anytime DMV updated the requirements or the rules and regulations.

#### 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?*

* This is a web-based system which means it has not made for a specific platform and it is compatible on any platform (Mac, Windows, Linux). Also, it will work on web browsers (Chrome, Safari, Firefox, Edge).
* The Backend requires a database, and we have an option of SQL (MySQL, Microsoft’s SQL) or NoSQL (MongoDB).

#### 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 will distinguish users by the password protected accounts created by them.
* Unique username/password shall be used for authentication and role-based authorization.
* Access should be limited on few incorrect password attempts and inputs should be case sensitive.

#### 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 system should accept account creation from all users (customers and DriverPass staff) and be able to modify, update or delete their account after log-in.
* The user’s browser will update frequently, and these updated wills do not have any effect on the code unless is a major change than requires source code update.
* The system will be updated when there is a feature implementation or resolving issues (bug fixes) which being on Agile/Scrum development, will allow this as the system development is on smaller phases and it provides capability of making small changes to the code.
* For IT Admin to maintain the system an Admin should have full system access without limitation.

#### 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?*

* User Needs to have a valid username and password to log-in to the system.
* For a secure connectivity the network requests should be made through HTTPS to provide a secure connection between application and the client.
* The HTTPS post request shall be used to prevent sensitive data transmission when sign-in form is submitted.
* To secure the sensitive data the system shall use Cryptography to encrypt the data.
* Too many incorrect password attempts (3) should result in the account to get locked for certain time and it will notify the IT Admin to prevent brute force hacking and IT Admin will set up steps for the user to reset their account password and unlock their account.
* To reset password the user will submit the request and to approve the request an identifying piece on the account such as email address to send verification or answering security questions must be provided by the user.

### 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 should require user authentication and authorization. Authenticate user by username and password and based on the account type to decide on the access level (authorization).
* The system is web-based and offline access is only limited to downloaded course materials and account updated and modifications should only be accessed online.
* User activities such as making and canceling reservations and account modifications should be tracked by the system.
* The system shall provide detailed reports on all activities.
* The system should accept following customer information for account registration:

1. First name
2. Last name
3. Email Address
4. Billing Address
5. Phone #
6. Credit card information.

* User should be able to reset password on the system.
* The system shall provide DMV guidelines and materials according to those guidelines.
* The system should display and report user exam progress/grades and instructors feedback and suggestions.
* The system should allow instructors/staff to contact the users.

### 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 will include Home page, account registration page, log-in page, course access page, appointment/reservation page, user profile page and DriverPass contact page.
* The access levels by users are as follow:

1. DriverPass owner – Full access
2. IT Admin – Full Access
3. Secretatory – Access to schedules and reservation modification.
4. Customer – Access to course materials, schedule (make reservation, update info, and cancel reservations).

* The system is web-based so the interface is compatible with all browsers on any device type (desktop, tablet, mobile).

### 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?*

* DriverPass devices has met the requirements requested for the system such as operating system, Network connectivity, …
* We assume that the DMV guidelines are actively always updated and current and available to access.
* We could assume that most of the customer/students are younger generation who are tech savvy and prefer online accessibility than in-person classes.
* We could assume that the system in connected to the internet and the internet is available 24/7.

### 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 web-based and relies on network connectivity which means that if there is no network connection, then entire system will be down and inaccessible.
* The upfront cost to set the system which includes expenses on the servers, devices, network connection, database, maintenance, and human resources. These will have considerable upfront and ongoing costs.
* The budget limit will determine the number of staff and resources to assign for the project or whether we should outsource or acquire permanent staff.
* The instructional materials are reliant on DMV guidelines and there is a limitation on how fast the guidelines are updated as soon as they are changed.

### 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.*

