# 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 POC: Liam
* Purpose:   
  The purpose of this project is to design a functional system that gives a student a way to train for a driving test. Liam is the client coming to us to give us a concept he wants to bring to life and wants to see as an option for students to access online for practices test. This will help the students become more comfortable with training material and get them ready for the real exam. Liam also mentioned in the DriverPass Interview that he intends to use DriverPass Staff as assistances for the training while online.
* Big Picture:  
  Use an online webpage interface to setup test practices, lesson plans to guide learners, ways to interact with DriverPass Assistance, On/Offline learning.

### 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?*

* System To Dos + Components:
  + Accessibility On/Offline
  + Use of cloud-based server to make save changes when offline
  + Limited access by employees to student information
  + Give employees capabilities to schedule or make reservations for customers who inquire
  + Give customers the ability to schedule or make reservations online.
* Problems:

Large quantity of students currently failing tests available to the public.

### 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?*

* System Capabilities + Measurable Tasks:
  + Access On/Offline while using cloud-based server
  + Keep log of edits in student files as well as other data
  + Give access to employees and customers to schedule or make reservations on the web page
  + Fully functional lesson plan packages
  + Give customers the choice to access customizable setting like updating account information and adding a card and making changes to their password
  + If changes are made to DMV test material the customer should be notified of the changes and then the packages should reflect the new changes
  + Standard web page interface for customers to access On/Offline testing materials and also to schedule lesson plans and make reservations for real tests
  + Fully functional online testing that updates and tracks progress and when finished gives them a grade.
    - Will indicate:
    - Student Name
    - Length of time taken to complete test
    - Overall Score and Status
      * Overall Score will be indicated as Passed, Failed, Currently In Progress, Did Not Finish, or Not Started
  + Before and after testing, give the students/customers access to feedback the driver left on the lesson
  + Be able to keep the same driver if preferred by the customer

## 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?*

* Since this application will be running via a web-based server, the planned route of attack for hosting will be Linux which will be able to host multiple different browser clients.
* With the workload required by the application when it comes to the access needed from the DMV testing material and then also relaying the new data back to the DriverPass for appointment scheduling.
* The application should also be able to make changes to the database portion of the application when ever progress is completed on test, driving practice lessons, and other features alike.

#### 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?*

* Ideally the web-based application will run on multiple different browsers which have a broad reach for any user base. Listed below will be the planned supported browsers that most anyone has access to.
  + Safari for Mac OS
  + Google Chrome
  + Mozilla Firefox
  + Microsoft Edge
* As far as the back end of the application support, there is a needed database portion that will be able to choose between a SQL or NoSQL which when choosing either, it may depend on the circumstantial needs of the application.

#### 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 will be given their own username and password and will be used for authentication.
* There will be a given number of attempts allowed for incorrect password attempts, also the system administrator will be notified of too many fail attempts.

#### 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 be able create, add, delete, and remove accounts from the DriverPass application, as well as make changes to their accounts.
* Within the browser, update will happen continuously in the background, and this won’t affect the backend database portion.
* Platform updates will be made only when needed if the site behavior is in question, this will happen in the background
* IT admin access will be granted for all scenarios in accounts. They will be able to make changes to passwords and also remove accounts if 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?*

* Accounts will be password protected and will use two factor authentication to verify accounts for extra protection. A valid username/email and password will be required to log in.
* Between client and server data exchange the server application will use HTTPS for network requests and HTTPS POST requests for sign in form submissions.
* For signs of “brute force” hacking, the system would implement attempt counts for password attempts over 4 times and then will notify the system administrator if the reset password function was not used.
* If a user forgets their password, they can make a request to reset it, but will be met will verification steps. They will need to enter the email that is used with their account and the system will cross verify the email and then can send a reset link to that email. Then the user can reset.

### 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 be able have a full functioning two factor authentication system to validate user credentials when logging in.
* The System shall be accessible offline, and the application will be web-based.
* The System shall have the ability to log the progress of the user while using all it functions like lessons, exams, etc.
* The System shall have the correct and up to date DMV compliant guidelines necessary for studying purposes.
* The System shall also offer different types of learning courses for the application of DriverPass.
* The System shall request the users’ credentials for the registration of their account. The information requested will be their full name, their current residence, a cell phone number, and the payment method they would like to keep on file in which they intend to use for purchasing of learning courses.
* The System shall give the user the ability to make password resets via their email address on file if they have forgotten their password.
* The System shall provide preset instructors for students when they become assigned to the course as well as give the student feedback.

### 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 needs of the interface of the application will be a few different pages that will be dedicated for their specific needs like: the login/register page, the home page, the account profile page, the learning course page, the event coordination page for reservations, and lastly the DriverPass Staff customer support page.
* The different users of the interface will be the student who is also the customers, and they will be able to make their own account, have access to the learning courses, and also have access to the event coordination page to make reservations as well as make a cancellation. Next, the DriverPass Instructors and they should be access to student progress logs to be able to see the students progress on course work that are assigned to them, and also account information. Next the DriverPass Owner and they should be able to oversee any account and also set permission to any other staff account. Lastly, the DriverPass Administrator and they should have the ability to make changes to reservations, and also have access to students accounts to make changes if needed.
* In its current state and plan the user will interact with the interface via a web-based server which is accessible through a web browser. If a device has access to a supported browser, it can get on the application. That means Mobile, Tablet, PC, or any other embedded device.

### 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 user should have unlimited access to the application with being available both on and offline. They should also have access to any of their information whenever then need it.
* Another assumption I will note is that the compliant guidelines that the DMV supplies are updated frequently.
* The user base is assumed to be people who are trying to actively obtain a license and need a method of learning the required information.
* It can be assumed that at some point the Owner of DriverPass will want to further the development of the product and port the application over to a mobile phone application that will work with all phone operating systems.

### 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?*

* One limitation you could expect with a web-based application that relies on a network connection, you run the risk of loosing access due to loss of a network connection.
* The limitations due to budgeting and time can come down to team members you have for development. If you would like a well-polished product you need to be able to employ skilled team members to create the product you want.
* As far as technology is concerned, if you have incompetent employees on the development team, this will limit your development if they aren’t familiar with the technology needed to develop the product.
* One limitation I could see being an issue is the DMV compliant guidelines and the fact that they need to be regularly updated so the students are learning the most recent information. This could be come a flaw if not followed closely.

### 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.*

Chart

Description automatically generated