# CS 255 Business Requirements Document

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?*

* DriverPass (client) wants to develop a system to schedule driving lessons and practice tests online.
* The “Big Boss,” the IT officer will have full access to make changes and maintain the system.
* Secretary, and the users will be able to schedule, and modify reservations.

### 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?*

* *Develop a system to help prepare for the DMV driving test.*
* *Schedule reservations.*
* *Modify reservations.*
* *Track progress.*
* *Cloud based so the company can focus on the business side, and less on the technical side.*

### 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?*

* Offer three package options for the user.
* Track how many of the 10 cars are scheduled, and be able to disable packages, as needed.
* Package one will be for 6 hours in the car with a trainer.
* Package two will be 8 hours in the car with a trainer, and in-person lessons on DMV rules.
* Package three will be 12 hours in the car with a trainer, in-person lessons, and full access to lessons and practice tests, online.
* System should be able to retain a record on the user’s progress.
* Receive notifications on when there are any changes to the DMV.
* User cannot make changes to record when offline, to prevent duplicate records. Changes are available to make online, over the web.
* System should securely retain registration information, such as: first and last name, address, phone number, credit card number, expiration date, and security code.
* Format should be in accordance with the company’s template (sketch).
* System should be provided via a cloud service.

## 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 should be web-based system with a cloud database. The client’s vision is to be able to access record from anywhere. Most popular operating systems have a browser.
* The cloud database will allow security, and maintenance to be managed externally and allow access to a user’s data with minimal interruptions. It is also a cheaper option since most cloud services only charge per call to the database.
* The system should be updated twice a month. This would include any bug fixes or added features.

#### 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?*

* Both the system (and most likely the cloud database) will run on Linux. This is a cheaper option and since the application is web-based users will be access the system online via API. This means the user will not have to access the system directly so no fancy GUI (usually associated with a Windows server) is necessary.
* The cloud database will be used to securely store the user’s login information, and driving records which is accessed by the system.

#### 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?*

* Usernames and passwords will be case sensitive.
* Passwords will be encrypted using a hash table so nothing can access the password without the private key.
* Two factor authentication will be used anytime the user accesses the system from an unknown device.
* Admin will be informed anytime there are a substancial amount of failed login attempts, that lock the profile. The user will need to reset the password themselves or call DriverPass for support.

#### 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?*

* IT sysadmins will need administrative privileges that grants full access to the system, and its network.
* Changes to the user will not need a code change since the user’s data will be stored in the cloud service. Changes will only be made to the stored data.

#### 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?*

* Two factor authentication for new devices.
* The Linux server configuration will ensure a connection between the client and server via secured internet protocol.
* Important data such as passwords and personal identifiable information (PII) will be encrypted and accessed between the server and the cloud database, per login. The server will use the private key to recognize the users password to ensure a plain text version does not exist within the code.
* If multiple unsuccessful attempts are made for a user or a “brute force” hack attempt are detected the profile will become locked, and admin will be notified. If it is just a forgotten password the user can reset using two factor authentication or by calling support. The user will be locked out until their identity is verified.

### 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 allow new users to create an account.
* The system shall validate user credentials when logging in.
* The system shall allow the user to change personal information such as address, username, password, etc.
* The system shall allow the CEO/Owner to access and download all student records.
* The system shall allow driving instructor to place a note within a record after a driving lesson.
* The system shall allow the user to schedule an appointment with the driving instructor.
* The system shall allow IT/admin to reset a user’s password.
* The system shall allow a secretary to make an appoint on student’s behalf.
* The system shall allow the CEO to lock a package option.
* The system shall confirm payment provided by a user.

### 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.)?*

* Users will interact with the system through a browser application.
* The interface needs a database to store user information.
* The user should be able to provide payment information, schedule appointments, take lessons, practice exams, and select one of the 3 package options.
* The different users for this interface will be the CEO, Admin, Secretary, IT Officer, and the users (customers).

### 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?*

* One thing not addressed above is whether a user has an operating system with a common browser, compatible with the system application.
* Do the driving instructors know how to operate the system.
* Will Admin and IT know how to manage the system, and will they be provided on the job training.
* Users know how to navigate the system.

### 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?*

* A trade-off for having a free Linux based database is that IT will need to be familiar. If not they must be trained on Linux servers or hire personel who are already.
* How will network traffic differ throughout the days of the weeks. If there is more users logging in on certain times of the day can the cloud database handle it.
* If the database goes down how much time will it take to restore. The longer the third party takes for restoration, the longer the system will be down.

### 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.*

