# 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 objective of the DriverPass program is to provide training services to students that are preparing to take a driving test. The system would allow students to take online practice tests, classes and then let them book a driving test.

### 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?*

* Request to build a system that manages the registrations for the booking system.
* Create online tests and virtual classes in the system.
* Request to create a 3-tiered system, where higher tiers would have better benefits.
* Integrate with online class modules and driving practice tests.
* Feedback mechanisms for students to review instructors and curriculum are essential.
* Allow permissions for different users such as students, office workers, and admins.
* Cloud based system to reduce server maintenance.

### 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?*

**Admin user:**

* Dashboard that manages layout of current enrolled students, instructor schedule, lists of upcoming tests.
* Add, remove, and modify user roles. (Students, instructors, secretary)
* Ability to update or modify courses and practice tests.
* Access to feedback reviews provided by users, and instructors.

**Instructor user:**

* View and manage schedules.
* Access student profiles to track progress.
* Communication method for teachers to reach out to students.

**Student user:**

* Booking system to reschedule or cancel driving lessons.
* Online practice tests where results are posted with feedback.
* Progress dashboard where it shows the scores and completed lessons.

**Office user:**

* System where scheduling can contact to change booking appointments.
* Notifications system for alerts, cancellations, and rescheduling.
* Same features as student user.

**System:**

* DMV integration where data for students can be fetched from the local DMV areas.
* Package based system where 3 tiers are offered.
* Contact Pages for inquiries and student support.
* Cloud based system to eliminate physical server maintenance.

## 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 platform will be a web-based environment that is compatible with various devices such as computers, tablets, and smartphones. The system should run quickly with loading times no more than five seconds. The system should be updated regularly, on a weekly schedule as this platform aims to keep the information on the website up to date and accurate.
* Web based platforms are essential due to the diverse compatibility of the world wide web. Every device, including certain refrigerators, is able to connect to websites. Cross platform is key for reaching every customer.

#### 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 web-based application will be accessible on any operating system that has basic web browsing abilities. This includes IOS, Android, and most computer operating systems that are still receiving security updates.
* The back end will require a database that will store user login passwords. This database will be encrypted and follow proper hashing procedure. The main database that stores user information such as test scores and progress will be stored on a third party cloud server service. Both of these servers will use a Unix based operating system such as Arch, or Debian.

#### 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 way to distinguish between different users will be the log-in page, based on the user’s credentials when they created their account. Their ID will contain a specific, unique generated Hash of their profile. This hash will be stored on the secure database. The username will not be case-sensitive, but the password will be. Different accounts will contain different levels of privileges, such as student, driver, employee, IT/Admin. When an unauthorized account gains access to privileges, or a highly authorized account logs in with an IP address, or time that is not near or of the business, the account will get flagged and locked until administrators inspect the situation.

#### 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 website will be developed with React Native using a Firebase as the user authentication. Using this third party database will not only work as a database, but all so an authenticator. This website gives the ability to make privilege changes to the accounts without having to make changes to the code. The IT admin needs to have the ability to change user’s permissions. They also need to be able to restrict accounts, create new packages, modify scheduling, and requirements.

#### 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?*

* The log in will require the user to complete the authentication screen, which will ask for the username and password.
* Usernames will be unique and tied to their email. Two step authenticators will require an email code that is sent to their email/phone number in order to process the user onto the website.
* Passwords will require at least 8 characters, combination of uppercase, lowercase, numbers, and

symboles.

* The system will lock a users account in the case of multiple failed login attempts, or logins from a suspicious IP address, that’s not normal to that of the user normally.
* User login credentials and sensitive data will be stored on firebase’s server. This doubles as a database and security system.

### 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.”*

* Ability to sign up to the website to become a new member.
* System requires an authentication service to validate the user's credentials during login.
* Users can check their driving progress compared to other times.
* Ability to book, cancel, change appointments.
* Administrator accounts with more functionality, with the ability to modify other accounts.
* Ability to modify packages and tests.

### 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.)?*

* WIth a multitude of different users accessing the webpage, everyone will log in through the same portal. The design will be rendered using modern javascript techniques using flex boxes. This will allow the website to scale accordingly on all devices, as each part will form into the screen according to the screen size.
* In case a user does not have an account the first screen will have an option to create an account. On this screen the user will be taken to another screen where they will fill out personal information and will be asked to verify their information.
* User dashboard, is where the user will see their test scores, upcoming appointments, study guide and online tests.
* The IT admin page will have a portal on their dashboard that will give them the ability to modify the roles of other users.
* The office workers are faced with the same portal but higher level modifications will be restricted for their accounts such as grayed out or not appearing at all.

### 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 assumptions for the users is they require a device and internet in order to access the websites and portal.
* Students are expected to be able to provide transportation to appointments.

### 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?*

* Time limitations will be an issue for technology. As appointments are supposed to be timely, outside forces could prolong the appointment such as human error, weather, emergencies, or even traffic. These could force appointments into taking longer than expected.

### 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.*

