# 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 is DriverPass. Liam is the owner, and Ian is the IT officer.
* The Client wants to create an online learning system that allows users to train for their driver’s test. The system will allow users to create their own learning plan that is tailored to their specific needs from already defined packages, as well as track their progress.
* The system should also allow DriverPass to interact with its users through direct feedback, and update lesson plans if the source material were to change.

### 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’s goal is to “take advantage of a void in the market when it comes to training students for the driving test at their local department of motor vehicles.” It will allow users to enroll in virtual training as well as behind the wheel training until they can pass their tests.
* The system will allow DriverPass to better understand their users by collecting common errors in tests, as well as provide up to date information by connecting directly to the DMV.
* The system will need to mainly be web based, with some offline capability, mostly to generate reports when needed.
* The system will need different access levels as well. At least one for the main user and one for the administrator.

### 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 goal of they system is to allow users to learn and practice with tests to be proficient enough to pass their exam at the DMV. DriverPass will likely use this information to see parts that are commonly struggled with and have their users pay extra attention to those parts.
* We can break down the components needed for DriverPass and the user.
* DriverPass:
  + Report manager: used to deliver data analysis.
  + Dashboard: used to view performance of users
  + Admin portal: used for admin tasks like resetting passwords and deleting accounts.
  + Lesson management: used for creating and changing packages.
  + Driver feedback: used for comments from the driver about the users.
  + DMV Management: used to gather updated information from the DMV.
* User:
  + Account management: used for changing passwords, updating information.
  + Testing service: used to take tests.
  + Lesson service: used to access online lessons.
  + Behind the wheel reservation: used to reserve time with a driver for behind the wheel practice.
  + Dashboard: used to view important information, remaining lessons, and upcoming reservations.

## 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 system is to be web-based, using Chrome as the primary platform.
* The scheduling system needs to be close to real-time in order to prevent duplications or double bookings.
* Reports generated should take no longer than an hour but have flexibility depending on the report.
* The underlying system should also scale as the user base grows.

#### 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 system will be compatible with windows, using Chrome as its main platform.
* The system should be mobile friendly with Android as the main target, and iPhone as the secondary.
* The system will employ REST for any needed microservices.
* The system will be based on a Linux-back end with a secure database storing user information and key information captured from the users to run reports.

#### 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 use case sensitivity on passwords but not on the usernames. The username will be a valid email address. Only one account can be tied to each email address.
* The system will have something like a heartbeat monitor that pings every minute, alerting the admins if the system goes down.
* The system will alert admins if a user enters the wrong password too many times, leading to a locked account for security purposes.

#### 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 will allow users, along with their roles, to be curated within the platform.
* The system will allow for the occasional update with minimal downtime. This will be needed at the minimum for security updates.
* The system will be based on an extensible platform allowing us to add more disk storage, memory, or other things as needed.
* IT will need access to the server, as well as admin access in order to solve any problem that may arise.

#### 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 system needs to be using HTTPS instead of HTTP.
* Users will be required to register their email as a username and activate it using the link sent to them in their email.
* Users will be able to recover their account if they forget their username or password.
* Two factor authentication is something to be considered.
* The system will have a time out period for multiple sign-in attempts from the same IP address.
* The system will lock an account that has failed multiple sign in attempts, displaying a message to contact an admin to unlock the account.

### 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 try to validate a user when logging in.
* The system shall enforce the security policy during a successful or failed sign in
* The system shall have a reporting function.
* The system shall allow users to edit their profile.
* The system shall allow users to review current course subscriptions.
* The system shall allow users to reserve driving slots.
* The system shall allow users to see available driving slots.
* The system shall allow users to alter previously scheduled driving reservations.
* The system shall allow the scheduling system to work across multiple time zones.
* The system shall allow driving instructors to view reservations with them.
* The system shall allow instructors to interact with users through direct chat, message boards, grades, etc.
* The system shall allow content to be maintained when the DMV updates its procedures.
* The system shall collect data to inform DriverPass on commonly missed questions.
* The system shall provide users feedback on tests and quiz’s they take.

### 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 be greeted by their dashboard upon logging in.
* Users shall be able to review their current coursework.
* Users shall be able to access the driver reservation system.
* Users shall be able to take tests from the main dashboard.
* Users should be able to view current test progress.
* Users shall be able to update their account and add any special needs they have.
* Admins shall be able to see all students and driver schedules, without seeing any personal information.
* Admins shall be able to run reports and export data into a csv as needed.

### 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?*

* Users will speak English.
* Users have a valid email address.
* Users have access to a web browser, through a desktop, laptop, or phone.
* User has stable access to the 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?*

* The system can only update while connected to the internet.
* The reservation system only works in the United States.
* The client wants the first usable system ready in 4 and a half months.

### 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.*

A screenshot of a calendar

Description automatically generated