# 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?*

* This project is for one of our clients, Driverpass. The purpose of this project is to provide driver training for Driverpass’s customers by making them able to take online classes and practice tests and reserve on-the-road training with the driving instructor with three pre-defined packages if needed.

### 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 wants to take advantage of a void market where students can be trained for the driving test before they go to the DMV.
* Driverpass wants us to build a system that enables their students to book online classes and practice tests, and the ability to reserve on-the-road training with the driving instructors if needed.

### 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?*

* Students should be able to book online classes and practice tests and if needed reserve on-the-road driving lessons among three available pre-defined packages with Driverpass’s instructors once they register or log in to their account.
* Users with administration roles should be able to access, modify and update student and employes information, and able to automatically reset user passwords in accordance with their position and authority.
* Users with administration roles should be able to disable the three pre-defined driving lesson packages if they don’t want any more customers to register for them.
* The system should run on all kinds of devices and platforms using cloud for memory, backup and security 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?*

* The system should be able to run in most of the web-based environments.
* The system should have a loading time of under 3 seconds.
* The system should be updated every month as needed with only 3 hours’ downtime per update.

#### 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 should run on most platforms such as windows, macOS, Unix, Linux, etc.
* The system should run on most browsers such as MS edge, chrome, Firefox, safari, etc.
* The system should adjust its UI automatically to run on mobile browsers.
* The backend will require database to store and manage data efficiently and can use tools like MySQL, PostgreSQL, MongoDB, etc.

#### 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?*

* Different users will be distinguished by the unique username which acts as a primary identifier and only passwords are case-sensitive.
* The system should inform the admin when significant issues arise such as system crashes, network connectivity failures, security breaches, user-reported issues, and configuration changes.
* The system should notify the admin through push notifications, email alerts, SMS messages, and system dashboards if any errors occur in the system.

#### 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 let an authorized person to be able to add, remove, and modify the user and admin accounts in the system without changing the code.
* The IT admin or developers responsible for maintaining the system should monitor platform updates so that they can make necessary adjustments to the APIs, designs, and features to make the system compatible with the new changes.
* The IT admin needs access to the system settings, user account management, software installation and management, and system database.

#### 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 user will require a username and password to log in to the system which will be matched with the database to authenticate.
* The connection and data exchange should be secured by using encryption protocols like TLS (Transport Layer Security) which encrypts data in transit and with multi-factor authentication.
* The account should be temporarily blocked from further login attempts if there is a “brute force” hacking attempt happens, or user exceeds more than 5 failed attempts.
* The temporarily blocked account should be unblocked after user verifies their identity through multiple authentications.
* If the user forgets their password, they can request the password reset link which is provided to them in their email address associated with their 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 validate user credentials when logging in.
* The system shall allow the user to reset the password by clicking on “forget password” and send reset link to user’s verified email.
* The system shall lock the user’s account after five failed attempts to sign in by the user.
* The system shall provide students with the list of three driverpass packages when they first log in to the system.
* The system shall update the real-time booking inventory when students reserve, cancel and reschedule their driving lesson and notify the driver instructor through SMS as well.
* The system shall send a confirmation email whenever students modify their reservation.
* The system shall send a reminder email to students about their upcoming appointment with the driving instructor one day before the scheduled appointment.
* The system shall track the activities of students when they make changes to the reservation and when they make progress in online classes in practice and update it in their profile dashboard.
* The system shall provide all the activities and details of each student if driverpass employee or administrator wants to access it.

### 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 user interface shall be web-based which can adapt to different screen sizes such as desktop, mobile, iPad, etc.
* The student register and log-in interface shall be different than the driverpass employee and admin interface.
* After logging into the system, the student interface shall show their profile, link to access their course materials, progress, upcoming appointments and exams, options to modify their driving lessons, and instructors’ feedback.
* After logging into the system, the employee interface shall show the list of all the students with their upcoming exam or driving lesson. The employee should be able to click the name of each student to go through their detailed activity, progress, and ability to modify their reservations and account itself.
* The user interface shall be web-based which can adapt to different screen sizes such as desktop, mobile, iPad, etc. and different browsers such as MS edge, chrome, Firefox, safari, etc.

### 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 will log into the system through web browser and have internet access.
* The user will have an email address and phone number to create and verify their accounts.
* The server, memory management, and store management will be handled through the cloud service providers which will be online 24/7.
* The change in DMV rules and guidelines will be implemented in the course materials by the employees.
* The driverpass driving instructors will be informed about the scheduled appointments and any modifications made by the students via employees working in the driverpass office.

### 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 must be built within 16 weeks (start date: 01/22/2025 – end date: 05/10/2025)
* The project must be completed within the allocated budget and cost should be tracked throughout the timeline of the project.
* The system should always maintain its quality by following the coding standard, and identifying and mitigating other potential issues that arise.

### 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 project

Description automatically generated*