# 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

* The client is DriverPass, a company whose goal is to better train new drivers to pass their driving test at the DMV.
* The purpose of this project is to create ways to teach new drivers through online lessons, practice tests, and on-the-road training.

### System Background

* DriverPass wants the system to provide online lessons, practice tests that are updated by the DMV, and on-the-road driving hours with their driving instructors that need to be scheduled.
* The problem the client has seen in society that they want to fix is that many student drivers fail their driving tests at the DMV. They want to provide a better education platform so new drivers can pass the test and become better drivers.
* There are quite a few components needed for the system. The system needs a website for their students to learn through lessons and take practice tests. The website also will show driver notes from on-the-road sessions.
* The system also needs an interface for the secretary to enter new registration information that was collected from new students over the phone.
* The owner also wants a way to keep track of what drivers are assigned to which students and when they are driving.
* There needs to be a scheduling component for students to schedule driving lessons with a specific car and instructor.
* The owner also wants a way to download reports.

### Objectives and Goals

* The system, once completed, will register new students to the website over the phone after calling the secretary.
* The website will provide lessons and practice tests with status information for those lessons and tests, along with driving session information that will be provided by the driving instructors.
* Students will be able to purchase different packages on the website for more driving session time and more access to the lessons.
* Password resets can be facilitated by the admin who has full access.
* Students will be able to schedule driving sessions with instructors from the website or over the phone.
* The system’s practice questions, policies, and rules will also be updated by the DMV.
* The system will manage its security and backup through a 3rd party, the company made it clear that they didn’t want to manage these two aspects of the system.
* Some measurable tasks that need to be included in the system design to achieve these functions are: Creation of use case diagrams and activity diagrams. Creation of a sample user interface. Creation of a class diagram. Get approval from the owner to continue. Creation of the actual user interface. Database construction and linking. Construction of the business logic: security, role, and right layer. Delivery of the system.

## Requirements

### Nonfunctional Requirements

#### 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 shall run as a web-based application accessible by major browsers and designed to work well with mobile platforms as well as desktop computers.
* The system shall be run on cloud servers hosted by a major cloud service provider such as Microsoft Azure or Amazon Web services.
* The system shall run fast, with no user action taking longer than 2 seconds to process.
* Platform dependent updates shall occur according to the industry standards. The DMV will automatically update the system as soon as new rules, policies, and practice questions are added. Any feature or maintenance updates to the system by the admin shall occur at a time when the website isn’t being used which can be determined by usage patterns or simply 5am on a weekend.

#### 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?*

* Since the system shall be a cloud-hosted web application, the system can be accessed by any operating platform with a web browser.
* The system will be run on a Microsoft Azure hybrid cloud platform, with all but the database to hold the user account information running on cloud servers.
* The user account database shall be run on a Windows machine running Windows Server.
* The back end will need a database to hold the student’s information, driving reservation information, and instructor notes / times of actual driving lessons.

#### 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 a role using role-based access control to limit the functions they can perform while using the system. Valid roles will be: student, secretary, driver, admin, and owner.
* The input the user provides will not have to be case sensitive. Any pieces of data that require lower or upper case can be formatted by the application before adding them to the databases.
* The system shall inform the admin of a problem if there’s a password reset, if the cloud provider is experiencing an outage, if there are scheduling problems, or if a student, driver, or the owner is having some kind of technical difficulty.

#### 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?*

* Yes, the system will be able to add, modify or remove users through an interface accessible to the secretary or owner that’ll perform the desired action on the underlying databases. Scheduling information can be add/ removed / modified by the student or the driving instructor in the same fashion.
* If there is a major update to the underlying platforms of the system that require the code to be changed, the admin will have to alter the code to keep the system functioning.
* The IT admin shall have full access to all aspects of the system to have the ability to maintain the system as 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?*

* A valid username and password shall be required for a user to log in.
* The connection between the client and the server shall be secured using SSL encryption.
* To prevent brute force hacking attempts, the user will only have a set number of times that they can try to login. If it’s clear that there has been a breach, the user will be required to reset their password, and recover the user’s data, the data may have to be re-entered, and lesson/test progress may need to be reset.
* If the user forgets their password, there shall be a way to for them to contact IT for a password 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.”*

### 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 system shall provide a website where students can take lessons and practice tests, either on a personal computer or mobile device. They shall be able to access lesson progress and test results.
* The system shall, on the website, provide a way for students to schedule, cancel, or modify their in-person driving sessions. They shall also be able to see driving instructor’s notes from previous driving sessions. The system shall also allow students to schedule driving sessions over the phone. If over the phone, the secretary shall have an interface where they input the appointment data to the same database as if the student scheduled online.
* The student shall have the ability to display any special needs information, and provide a photo if desired.
* After a student registers, the system shall, on the website , allow students to choose from one of the three education packages.
* The owner shall have the ability to disable any of the packages.
* The system shall provide an interface for the secretary to register new students on the website with their relevant personal information.
* The system shall provide an interface for the drivers to display their availability, get matched with a student, and input driver notes that link the student’s sessions .
* The owner shall have access to an interface to view reports he can download from the site in a format that is compatible with Excel so he can be provided with data of the workings of his company.
* The owner shall also have the ability, in the same interface to view printable activity reports of reservations, and the students and drivers involved in the case that something goes wrong that he needs to review.
* The admin shall have a way to access user accounts to issue password resets or to delete accounts of employees that have been let go.

### 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?*

* Each student will have a personal computer with broadband internet access, or at the least, a mobile device with internet access.
* Another assumption is that all employees involved will have access to work computers or mobile devices that have broadband internet access .

### 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?*

* Security and backups have to be maintained by a third party as the client doesn’t want to have to deal with these two aspects.
* The system must be web based, and the client prefers the system to be run on the cloud.
* The timeframe is longer than it could be as we only have 4 team members.

### Gantt Chart

*Chart, timeline, waterfall chart

Description automatically generated*