# 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?*

* DriverPass is an organization that helps new drivers pass their driving exam through the use of on the road training, online classes, and practice tests.
* The purpose of this projects is to design a system for DriverPass to facilitate these needs. The customer should be able to take online classes and practice tests as well as schedule on the road training from the system.

### 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 should allow users to take online classes and practice tests as well as schedule on the road training.
* DriverPass has noticed a lack of adequate training for students preparing for their driving exam. They hope to solve this problem by creating an online system that is readily available to train students. This will not only help drivers pass their tests, but it will also create safer drivers.
* Required Components:
  + A web-based application front-end to facilitate constant availability. Preferably a serverless cloud setup that will automatically handle security and server maintenance.
  + A Database containing all of the necessary data to schedule appointments and keep track of student’s course/test progress
  + A user interface containing views for:
    - Data surrounding tests the customer has taken
    - Driver notes
    - Driver and student photo
    - Student Info (name, address, email, etc.)
  + Password protection
  + User privilege authentication (admin, user, etc.)
  + Appointment scheduling online and by phone for in person testing
    - Tier based system that allows user to select 1 of 3 packages.

### 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 system should allow users schedule in person drivers tests, take online courses/practice tests.
* The system should be available at all times with an appropriate device and internet connection.
* System should allow the secretary to schedule tests for customers who visit in person
* Before scheduling, the user should have to:
  + Pick from available packages
  + Pick an available time
  + Enter their info into database (name, address, email, payment info, etc.)
  + Enter a pickup/drop-off location (must be the same location for both)
* The system should pair each scheduled student with an available driving instructor
* The system should be flexible and allow certain packages to be disabled.
* System access should be delegated appropriately between organization members and users.
* The following measurable tasks provided in the interview discussion will facilitate the necessary requirements in the system design:

1. Build use case and activity diagrams while researching user interface design.
2. Build out a class diagram to define the system hierarchy.
3. Meet with the customer to approve class interface design as well as use case, activity and class diagram designs.
4. Begin developing interface upon approval from client.
5. Build out the system database and link to the user interface.
6. Add business logic layer to define user roles and security.
7. Deliver the system to the client and hold a sign-off meeting upon approval.

## 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 run on a website as a web-based application.
* The system should sufficiently fast enough to allow the projected amount of users to access the website without experiencing excessive wait times.
* The system should be updated any time the DMV makes changes to driving laws and regulations.

#### 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 front end should run on any modern operating platform with an internet connection (Android, iOS, Windows, Mac, Linux).
* The back end should be cloud based and will utilize:
  + A database to maintain customer records
  + A secure payments API to handle online payments
  + Security protocols managed by the cloud service provider

#### 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?*

* Each user will register with a unique username and a password. Input will be case sensitive.
  + If the user enters an invalid username/password or the username is already taken, the system should immediately prompt the user to make changes before they can register.
* The system should notify the admin of a problem immediately in order to minimize system downtime and preserve the accuracy of data 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 will allow users to register, modify, or remove their account without changing any code. These operations will update the associated database.
* Platform updates will require changes in the system code and will require a software developer and/or system analyst
* The IT admin needs to have control of all user accounts to reset them if a password is forgotten and restrict access if an account is no longer 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?*

* The user must have a valid username and password to log in.
* Data being sent between the client and server should be encrypted to prevent unintended access.
* To prevent “brute force” attacks, the system should impose a maximum number of login attempts before locking an account and requiring an administrator to unlock.
* The system should allow the user to reset the password via email. This process can either be automated or done by emailing an admin.

### 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 users to update/remove their account.
* The system shall allow users to create, modify and cancel appointments for in person driving lessons.
* The system shall allow customers to take practice driver exams/classes online.
* The system shall show a user’s progress in the online courses and exams.
* The system shall allow administrators to update user passwords and restrict accounts.
* The system shall interface with the DMV to be notified of updated rules, policies and sample questions.

### 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 should display online test progress, as well as driving instructor information including notes and contact info. The interface should allow customers and employees to communicate.
* The users include customers, the business owner, an IT officer to maintain the system, and a secretary.
* Customers should be able to take tests, take classes and make appointments.
* The owner should have access to all accounts and should be able to see appointments as they’re scheduled
* The IT officer should have full access to the system
* The secretary should be able to create and modify appointments.
* All users should be able to interface with the system through mobile or desktop.

### 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?*

* Every user has a device capable of interfacing with the system
* Every user has an internet connection
* The cloud based back end is within budget
* The cost to build the system is within budget

### 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?*

* Due to variances in laws between different countries, the tests and classes are only useful to users within the United States.
* The ability to schedule in person driving lessons is only useful to users who live within a reasonable distance of an instructor
* The design team only has a limited number of people who can only produce a certain amount of work in the time given.

### Gantt Chart

Chart, waterfall chart

Description automatically generated