# 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?*

* In this interaction, we are meeting with DriverPass representatives, Liam (owner) and Ian (IT officer)
* This project was started after Liam noticed low pass rates of the DMV exam.
* The purpose of this project is to provide the client with a program that they can roll out to their customers.
* This system will provide end-users virtual training on topics that will help them pass DMV exams.

### 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?*

* Too many people fail their driving tests at the DMV. DriverPass wants to help people become more prepared for their driving tests through online training and in-person driving practice.
* By hosting this training virtually, it will be more easily accessible to end-users because it can be accessed from anywhere and practice driving sessions can be reserved according to their schedule.
* The system should include accounts available for administrators, drivers, secretaries, and students.
  + The administrator accounts should have the highest level of access, with the ability to help other users access their accounts, make changes to exams and schedules, update class content, and disable packages.
  + The driver accounts should have access to view the schedule and session information, and upload notes.
  + The secretary accounts should be able to add customers to the system, make changes to existing customers, and schedule appointments for students.
  + Students should be able to access their account data, view driver notes, schedule sessions, purchase packages, and access course materials (if they have purchased them)

### 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?*

* This system should be available online, and have certain features available to download for offline use
* The system should be secured through a username/password authentication, where the owner has access to all accounts for the purpose of changing privileges, resetting passwords, and removing accounts.
* End users should be able to automatically reset their passwords.
* Notifications should come through in some form whenever the DMV updates rules, policies, or sample questions.
* There needs to be a booking system that allows end users to schedule 2-hour driving appointments.
* The system needs to identify and keep track of driver, time, and car associated with each driving appointment.
* When a customer buys a driving package, the system should keep track of the benefits remaining within that package until the benefits are completely used up.
* Packages should be able to be disabled by the system administrator to prevent future purchases if needed.
* There should be pages dedicated to the following:
  + Driver notes and comments for after a driving session
  + Online testing page that shows past tests with their status (not taken, in progress, failed, passed), time of test, and score.
  + An input form for student information
  + A contact page for both contacting students and contacting DriverPass

## 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 shall be web-based, and friendly to both desktop and mobile devices (Summerfield, 2023)
* The system shall load pages in under three seconds (An, 2018)
* The system shall be updated as needed, but approximately every thirty days (Calvello, 2019).

#### 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 shall run on Windows, OS X, iOS, Android, and Linux (StatCounter, 2023)
* The system shall have a database for storing customer and business data (Teamleader, 2021)
* The system shall integrate with accounting software (The Webgility Team, 2022)

#### 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 shall identify non-logged in users through an anonymous ID. (Segment.io, Inc, 2023).
* The system shall identify logged-in users through a user ID (Segment.io, Inc, 2023).
* The system shall require users to create an account using an email address and password to log in (Segment.io, Inc, 2023).
* The system shall track passwords with case sensitivity and email addresses without case sensitivity.
* The system shall contact the administrator when:
  + There are issues with network communications.
  + OS updates are available.
  + User accounts need maintenance (issues where solutions are not automated)
  + General system maintenance is required
  + Firmware and software patches are required

(Gite, 2022)

#### 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 shall be able to add, remove, and modify users without changing code.
* System updates shall become available to accommodate platform updates when they occur.
* The system shall have scheduled maintenance updates require downtime.
* IT admins shall have a high level of access, including the ability to:
  + Create, delete, and edit user accounts
  + Push out software updates
  + Access and create safeguards for company databases
  + All IT infrastructure and back-end programs

(Jaeger, 2023)

#### 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 shall require an email address (username), password, and completion of 2-factor authentication through an SMS one time password for a user to log in (Twilio, 2023)
* The system shall use session encryption with a SSL protocol to maintain a secure connection between clients and the server (SSL Support Team, 2021).
* The system shall lock out an account from a specific IP address for some amount of time during a brute force attack. This will prevent:  
   1. The attacker from accessing the account from their current IP address  
   2. Denial of service for many user accounts   
  (Esheridan, 2023) (Dedov, 2023)
* Forgotten passwords shall be handled by sending the user a unique, 16-character temporary password to log into their account. Once the password has been entered, they will be prompted to set a new password (OneLogin, 2023).

### 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 have downloadable reports.
* The system shall schedule clients appointments based on driver availability and client input.
* The system shall pair bookings with available drivers and cars.
* The system shall notify driver and owner when a client books a session with them.
* The system shall send the client an order confirmation after a session is booked
* The system shall process payments through a credit card vendor
* The system shall cancel, edit, move, and add appointments as needed.
* The system shall validate user credentials when logging in.
* The system shall send a reminder to clients as their session approaches, if they have notifications turned on.
* The system shall process orders when a customer purchases a session or a package.
* The system shall update remaining benefits when part of a package is used by a client.
* The system shall have quiz/testing templates for admin to create practice driving exams.
* The system shall autograde exams taken and save the score.
* The system shall track user changes to the system.
* The system shall generate activity reports
* The system shall keep track of student progress and test statistics, and display them for the student to see (test name, time taken, score, and status)
* The system should keep track of test status, classifying each test as not take, in progress, failed, or passed

### 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 interface shall be straightforward and easy to navigate for first time users through experienced users.
* The home page for logged-in students should include online test progress, driver notes, special needs, driver photo, student photo, and student account information.
* There should be a separate page for entering student account information.
* There should be a page for contacting students (and for students to contact DriverPass)
* The DriverPass logo should be located at the top of the website interface.
* The users shall be grouped as students, drivers, administrators, schedulers, and IT administrators.
* Students will be able to:
  + Login
  + Change their password
  + View purchased materials
  + Book and cancel appointments
  + Attend classes
  + Take exams
  + View exam progress
  + View their exam scores
  + View and edit their personal data
  + View, edit, add, and remove payment methods
  + Purchase packages
  + View driver notes
  + Contact admin
* Drivers will be able to:
  + Login
  + Change their password
  + View upcoming appointments
  + Leave notes on past driving sessions
  + View their car and student name for upcoming sessions
* Administrators will be able to:
  + Login
  + Change their password
  + View schedule
  + Add, remove, and modify sessions
  + View and edit student data
  + Add new student, driver, and secretary accounts
  + View driver notes
  + View student purchase history
  + View student activity (exam data, available purchased services, drive history)
  + Download reports
* Secretaries will be able to:
  + Login
  + Change their password
  + View schedule
  + Add, remove, and modify sessions
  + Add new student users
  + Modify student data
* IT Administrators will be able to do:
  + Everything that Administrators can do
  + Perform system maintenance and troubleshooting
  + Maintain system connection to database
  + Manage some backend functions, like disabling packages.
  + IT Administrators cannot edit backend code.
* The interface shall be interacted with through a browser for all users. There should be a web-based mobile and desktop version of the site available.

### 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?*

* It’s assumed that all users have internet-connected devices such as a personal computer or a smart phone
* It is assumed that all users have access to high-speed internet
* It is assumed that users have basic computer navigation skills
* It is assumed that users have the ability to read site contents
* It is assumed that all users and drivers are within the same time zone

### 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 is only accessible via internet-connected web browsers
* The system should be designed, built, tested, and delivered between Jan 22 and May 10 (less than three months).
* No budget is mentioned, but this may be a limitation.
* If there is an issue with the database that hosts customer and company data, most functions of the web site will not work.
* No user can receive system notifications if they are not logged into their account.

### 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 picture containing text, screenshot, number, parallel

Description automatically generated

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