# 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, and it is represented by Liam, DriverPass owner, and Ian, DriverPass IT officer
* DriverPass is a new company that wants to take advantage of a shortage in helping students pass their driving test at the DMV
* The purpose of this project is to identify DriverPass’s business requirements to facilitate the development of a system capable of providing DriverPass students with tools to help them pass their driving exam and test
* DriverPass will prepare students for the driving test by providing them with access to online practice exams and on-the-road training if requested
* DriverPass wants to build a system that meets these needs

﻿

### 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?

To help DriverPass meet their needs to help students pass their driving test at the DMV, they require a system that provides access to online practice exams and on-the-road training upon request. The system should:

* be accessible online using a cloud service
* be designed for desktops and mobile devices
* allow the owner to print reports
* support user accounts based on roles
* allow users to make reservations using their accounts
* be flexible enough to allow the owner to disable packages considering that future releases will allow the owner to add, modify, and delete packages
* show notifications when the DMV issues an update
* be designed based on the sketch provided by DriverPass

### 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 will incorporate the following user roles: owner, IT, secretary, driver and student
* The system will allow a student or secretary to create a user account using first and last name, address, phone number, state, credit card number, expiration date, security code, and pick-up and drop-off location
* The owner will have access to user accounts to reset a password or suspending an account
* Students should also be able to reset their passwords online
* Students will make, modify, and cancel reservations using their online account
* Students will have the option to choose the date and time for the driving lessons
* The system will also allow students to choose between three different packages
* The system will track user activity involving making, canceling, and modifying a reservation
* The system will also record the driver, vehicle, and session the students is matched with
* A report of said student activity will be available for print by the owner
* The system will subscribe to DMV updates and show the owner, admin, and secretary notifications of such updates
* The system interface will include a driver's notes sections that show lesson time, start hour, end hour, and driver comments
* The interface should include a registration page that meets DriverPass' input requirements for creating a student account
* The interface should also include a contact us page that shows company information and a contact form

## 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 accessible over the internet using a web browser
* The system will be hosted using a cloud service so that technical requirements are reduced to a minimum.
* The maximum time it should take the system to respond is two seconds. That is a common execution time amongst web applications according to PINGDOM (2021).
* Time restricting requests, such as uploading and downloading large files will work in the background, but the system will still respond and notify the users of their progress within the 2-second limit.

#### 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?*

* Because the system will run on the user’s browser, the constraint is all modern browsers. The platform constraint for accessing the system online is the browser. Even though browser behave slightly different on different operating systems, the constraint remains the browser.
* The system will be accessible from desktops and mobile devices using a browser.
* The backend will run on a cloud platform, such as AWS.
* The system will store its data online using a database.
* Using the system offline requires internet access to download 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 be scalable to handle many registered students
* Users of the system will be assigned roles and capabilities to determine their privileges in the system.
* The system will notify the owner and other admin roles of DMV changes regarding exams and driving tests.
* The system will restrict access to paid content until payment is received
* The system will generate accurate reports representing the various activities made by students.

#### 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 owner, secretary, and IT roles will have limited access to managing students’ profiles.
* The owner will be able to reset passwords and deactivate accounts. The owner will also need access to activity reports
* The secretary will be able to create student accounts offline using the minimum requirements required by DriverPass
* The IT role will need access to activity reports to verify accuracy
* The IT role will also need access to system logs to monitor the system’s health

#### 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?*

* Because the system will support payment and registrations, an SSL certificate will be required to keep communication between the client and server secure.
* Users are required to enter their username/email and password to gain access to the system
* Sessions will authenticate the user as they move through the system
* Users can reset their own passwords online or the owner can assist users in updating their passwords offline
* Any account experiencing a brute force attack will be temporarily suspended and the user will be required to update their password.
* The system will identify abnormal resource usage and notify the IT role
* The owner of DriverPass has requested that he is given capabilities to reset students’ passwords. In a situation where his account gets compromised, all the users of the system will be at risk. The security measure will be that a student is sent an email with instructions to reset their password.

### 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 support five user roles: owner, IT, secretary, driver, and student
* The system shall allow a student or secretary to create a user account using first name, last name, address, phone number, state, credit card number, expiration date, security code, and drop-off pick-up and locations.
* The owner shall have access to any user account to reset their password by sending an email with instructions.
* The owner shall also have the capability to suspend user accounts.
* All users of the system shall be able to reset their passwords online.
* Students will make, modify, and cancel reservations using their online account
* Students shall have the option to choose the date and time for the driving lessons
* The system shall allow students to choose between three different packages
* The system shall track user activity consisting of making, modifying, and canceling reservations.
* The system shall document the student’s driver, vehicle, and session they were matched with
* The system shall generate reports of the mentioned student activity and make them available for print and offline use by the owner.
* The system shall subscribe to DMV updates and show the owner, admin, and secretary notifications of updates pertaining to practice exams and new guidelines on written exams and driving tests.
* The system interface for students shall include a table showing lesson time, start hour, end hour, and driver comments
* The system interface shall include a registration page that meets DriverPass' input requirements for creating a student account
* The system interface shall include a contact us page that allows system users to contact each other.

### 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.)?*

* Five type of user roles have been identified so far: (1) owner, (2) IT, (3) secretary, (4) driver, and (5) student. User roles should be served an interface that is appropriate for their capabilities and privileges.
* There should be a registration page with form fields designed for students to register and the secretary to input manual registrations for students using the minimum required information by DriverPass.
* The system should have a messaging system in place to allow drivers, students, and DriverPass staff to contact each other.
* A login page will also be required for the users to gain access to the system
* When a student logs in to their account, they will see two columns:
  + The right column will contain a box the shows the student’s information, the box below that will show a student’s special needs, and the last box will show the driver’s and student photos aligned vertically.
  + The left column will show the student’s online test progress, which includes previous and current tests. The test will show name, time taken, score, and status (could be not taken, in progress, failed, or passed). Below the test progress will be a table showing the drivers’ notes, which include driver comments, start hour, end hour, and lesson time.

### 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 IT role has the technical knowledge to access system logs to abnormal activity and identify brute force attacks
* The system will meet the client’s business processes to help students pass their driving exam and test
* The system will use any cloud service that can deliver the client’s requirements
* DriverPass identified the attributes for students, which are first name, last name, address, phone number, state, and their credit card number, expiration date, security code, and pickup and drop-off locations. I assume that the owner, drivers, IT, and secretary would not need their credit card information on file. The drivers would need an attribute for their driver’s license., but confirmation from DriverPass would be required.
* The system needs a login page because DriverPass just mentioned a registration page.
* DirverPass did not mention how they want their cars to be tracked in the system, but they did mention that each driver is assigned to a car. We can give drivers an additional attribute that represents the vehicle assigned to them. However, tracking the cars seems appropriate, but confirmation from DriverPass is required.

### 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 limited to online access using a web browser.
* Server configuration is bound by the cloud’s service provider settings.
* Our limitations in developing a secure system that also meets DriverPass’ business requirements depend on our expertise and budget.
* The current version of the system is limited to the hardcoded driving packages. Future updates are expected to make adding, deleting, and editing packages non-technical.
* The technological limitations are browser support, programming language capabilities, and server capacity.

### 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.*

**

**Reference**

PINGDOM. (2021). *Website load time IN 2021: How fast is fast enough?* Retrieved September 11, 2021, from https://www.pingdom.com/blog/website-load-time-in-2020/.