# 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.
* The purpose of this project is to help new drivers pass their driving tests.
* The client wants this system to provide an interface to prepare new drivers with the training and capacity to pass their driving exams by giving students online and offline access to training material as well as real hands-on training with experienced driving trainers.

### 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 the system to offer customers a variance in packages which offer different benefits of increasingly inclusive training material and trainer involvement. The system should be able to support a calendar where customers can make appointments, cancel appointments, change appointments, and allow packages to be modified and/or disabled by the IT admin. In other words, the functionality and administration of the system should be as flexible as possible to the client’s and customer’s needs.
* The problem that DriverPass wants to fix is that too many new drivers are failing their driving exams, written and/or on-the-road and DriverPass wants to fill the void in the industry on this type of training.
* The different components needed for this system are the cloud, online study materials, a mobile app to correspond with the desktop application, the requested packages, login credentials and protocols, secure transactions to support credit card information security, DMV updates, calendar scheduling support and collaboration, multi-platform and multi-user support, data consent policies (because of possible and likely registration by teenagers with a parent/legal guardian), progress tracking, and student notes/comments.

### 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 be able to support a student’s registration, secure payments transactions, online and in-person training, training progress, exams, and follow-up such as exam scores, feedback, and further inquiries. Ultimately, the system should increase the passing rate of student driving exams.
* The measurable tasks that need to be included in the system design to achieve this are secure HTTPS protocols, secure login credential requirements, user account control that allow various levels of administrative roles/access, live and isolated online calendar scheduling for multiple users, updates from DMV including an alert system where the user can receive emails for important DMV updates, a status bar to measure the test progress (such as taken, in progress, passed, or failed), map/address support to easily identify pick-up and drop-off locations for the trainers/customers, and blacklisting support to be able to block any user chosen by the administration.

## 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 a web-based application run from the cloud.
* The system should be able to run at the speed of fiber optic and broadband cable internet which are the latest industry standards for online access.
* The system itself should only be updated for security, structural, and/or functionality purposes such as updating web certificates and secure protocols, refactoring code or updating version-dependent libraries, adding or removing modules, updating plugins, or re-structuring the system’s behavior.

#### 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 all major platforms such as Windows, Unix, and major mobile devices which will be accounted for by designing the application to run in the cloud.
* The back end would require a database for customers, drivers, their personal (and payment) information, packages, appointment schedules, user credentials, metadata for transactions, student/driver photos, and student/driver notes and comments.

#### 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 distinguish between different users by utilizing the user registration information to determine whether the user is a customer. The owner and IT admin will be assigned roles that allow for the highest levels of administrative access for maintaining and modifying the system. The drivers and secretary will have a similar role as a regular user with additional administrative rights such as being able to schedule appointments, contact customers, and responding to customer inquiries.
* The input will only need to be case-sensitive for logging in with the username and password. This is important for establishing secure credentials and validating input as this is one of the first lines of defense in securing the system.
* The system should inform the admin of a problem immediately with a notification email and an alert upon administrative login to the application.

#### 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 user will be able to automatically reset their password if they forget their password so yes changes can be made to the user without changing code. Additionally, the administrator will be able to block access to a user (i.e., former employee) and be able to reset any user password from the back end.
* The application will be running on the cloud so it will not be necessary to make platform updates to the application as this is all taken care of with the cloud service.
* As far as changes within, the system will keep an activity log of all changes being made to the system and who performed the changes. This will allow an activity report to be printed to easily identify those accountable.
* The IT admin needs the highest level of access to be able to modify user roles and permissions, perform system maintenance and updates, reset any user passwords, making and cancelling reservations, viewing who modified the reservation last, and ability to block access to users.

#### 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?*

* For a user to login, the user must call DriverPass and give their personal information including first name, last name, address, phone number, state, credit card number, expiration date, security code, pickup location, and drop-off location (which should be the same as the pickup location).
* The connection and data exchange between the client and server will be secured by implementing the HTTPS secure protocol and by validating web certificates.
* If there is a “brute force” hacking attempt on an account, the account will be blocked temporarily, and the password for that account will be automatically reset. Once the user creates a new password and logs in with the new credentials, the account will be reinstated.
* If the user forgets their password, the user will be able to either call DriverPass to have the password reset by the IT admin, or the user can click the prompt “Forgot your password?” which will automatically send a link to allow the user to create a new 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 validate user credentials upon login.
* The system shall allow users to modify their personal information via their profile.
* The system shall allow users to purchase driving packages and view schedules.
* The system shall allow administrators to manage user accounts and reset user passwords.
* The system shall allow administrators to disable packages to make them unavailable to users.
* The system shall temporarily disable a user account after 5 unsuccessful password attempts.
* The system shall log all changes by users with the ability to print and export the log as a report.
* The system shall allow appointments to be made and cancelled.
* The system shall allow administrators to block access to users.
* The system shall implement the HTTPS secure protocol to protect sensitive user data.
* The system shall validate web certificates.
* The system shall run on the cloud to provide multi-platform portability and elasticity.
* The system shall alert administrators and users of the latest DMV updates.
* The system shall track the progress of student drivers participating in the program.
* The system shall improve the overall ability for student drivers to pass their driving exams.
* The system shall be accessible on a mobile app that synchronizes with the cloud.
* The system shall provide visibility to drivers and trainers for pickup and drop-off locations.

### 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 different users for this interface will be the owner, administrators, secretaries, trainers, student drivers, and parents/legal guardians.
* The users will need to interact with the interface through the web browser and/or mobile app.
* The student drivers will need to be able to view their personal information, driving schedules, pickup/drop-off locations, purchase packages, view their progress, make and cancel appointments, make notes or comments, and view DMV updates.
* Parents/legal guardians will have all the same interface needs as student drivers.
* The driver trainers will need to be able to view their personal information, driving schedules, pickup/drop-off locations, view packages, view trainees progress, make and cancel appointments, reply to/make notes or comments, and view DMV updates.
* Secretaries will need to be able to interface with user accounts to create or modify personal information.
* Administrators will need to access user accounts to create or modify personal information as well as reset user passwords, interface with packages to disable them if needed, maintain DMV updates, and view/modify the back and front end of all other features and functionalities available to all other users.
* The interface for the web-based application and the mobile app should closely match in design and functionality.
* The interface will need to run smoothly and be user-friendly because student drivers can be of any age or background, and they may not be computer savvy.
* The interface should be available to users 99.5% of the time, with the exception being site maintenance.

### 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 is assumed that users have access to either a computer or mobile device to access the web-based application and/or mobile app.
* It is assumed that user have access to internet capable of at least broadband speeds because the application will be developed on the cloud and an optimal browsing experience requires ample internet speed.
* It is assumed that the cloud services will successfully back up the application.
* It is assumed that administrators will keep up to date with secure protocols, web certificate validations, version-dependencies such as plugins or libraries, and unused user accounts and packages.
* It is assumed that there will always be student drivers who seek help in passing their driving exams, and it is also assumed that there will always be trainers for those student drivers.

### 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 administrators will only be able to disable packages, but not create nor modify them.
* The system cannot be accessed without an internet connection or some sort of access to a web browser or mobile app from a computer or mobile device, respectively.
* The system cannot administrate the driving exams themselves: it can only assist in passing them.
* The packages are constrained to how much people see value in passing a driving exam and their capacity to pay for the training. This is not something people typically save up for or count on. Also, since the audience is for anyone who wants to learn how to drive, the price must be reasonable for any social status. This may translate to a limited budget for site maintenance.
* If budget becomes a problem because of overpriced packages, then it may be hard to keep trainers employed which would defeat the program entirely.

### 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.*

