# 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?*

* This project is devised by DriverPass and its owner Liam. He hopes to take advantage of untapped market potential with an app for training student drivers. The goal is to provide online classes, practice tests, and on-the-road training.
* What Liam wants is a managerial system that has roles, privileges per role, and database interfacing, as well as a customer-friendly webapp interface for booking training sessions or accessing online courses.

### 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 a webapp that functions on a secure cloud which allows customers to do online coursework, book in-person trainer sessions, manage these sessions, and receive feedback from the trainer. It is also important that course progress is displayed.
* There needs to be administrative interfaces for the owner, admin, and secretary roles (detailed in objectives and goals).

### 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 needs to track changes for accountability purposes, have a system for resetting passwords, and have a system for discontinuing access from discontinued accounts.
* Roles are owner, administrator (modify, maintain, etc), secretary (call, answer calls, make appointments), and end user (make appointments, cancel, modify).
* The system needs to have access to data from anywhere online through any computer or mobile device. Downloading reports and information for work at home is important.
* For the end user, there needs to be a system to handle reservations for in-person sessions.
* Multi-package, flexible trainer session booking system.
  + In the future, customizable package booking system.
  + In the present, three packages. Package 3 includes an online class with all the content and material, and practice tests.
* Per-package session planning (two hours per session, booking across multiple days, scheduled between ten cars).
  + Ability to enable or disable a package from an admin/owner role.
* End user password resets as an automated system
* Scheduling system needs first name, last name, address, phone number, state, credit card number date and code, pickup location, drop off location.
* Automated internal notification system for DMV changes and updates
* Cloud-based web-app; Displays online test progress, information on the user, driver notes, special needs, driver photo, student photo.
* Test progress shows test name, time taken, score, and status: tests not taken, in progress, passed, or failed
* Driver notes shows lesson time, start hour, end hour, and driver comments for each session
* A webpage should be present with a student information input form, and a page needs to be made for contacting DriverPass. DriverPass also needs a way to contact the student.

## 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?*

* DriverPass will be largely a web-based application
* DriverPass will be hosted via cloud services, i.e. Amazon Web Services.
* The app will be accessible through mobile apps or browser.
* The system should have real-time performance.
* The system should use cache to save assets to the local device.
* The system should be lightweight and will need some storage for databases recording user information (mostly bool values for each course completed, hex IDs for user IDs and course IDs, log in information), and user uploaded photos.

#### 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 web application should be hosted via a cloud server or a Linux or Windows server environment.
* Website can be constructed from JavaScript and HTML or any number of other frameworks and languages.
* The server must be attached to a database to save and query user data.

#### 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?*

* User information is keyed by a unique username and an email address for verification. There will be a case sensitive password to log in.
* If the user forgets their password they should be able to email themselves a reset link.
* If a user continues to fail their password or tries to log in from a radically different location, the user should receive a security notice, as well as an administrator.
* If the database is not receiving queries from any users for any duration, the administrator should be notified in case of a downage.

#### 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 needs to be able to create an account with our system
* The user needs to be able to provide an immutable primary key username
* The user needs to be able to provide and augment the value of a password
* The user needs to be able to add, update, and modify their email address and phone number
* The user may want to update and modify a profile
* The user may want to deactivate their account or delete it outright
* The user may want to upgrade their membership
* The administrator may want to change any of the values associated with a user’s account
* The administrator may want to flag users as employees
* Employees may want to access customer information
* Employees with granted permissions may want to alter some of the customer’s information
* Employee roles and permissions should be managed by the administrator
* Employee accounts should be able to be disabled by the administrator
* The system should be arranged to have automated backups occur regularly for the databased and webapp.
* A test environment should exist to QA test builds before release, i.e. general platform updates.
* The releases should be transitioned in such a way where platform updates should not result in downtime, but there should be a notification system for announcing downtime if required.

#### 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 needs to provide their login username and password to create an account, and to log into the account anytime they need.
* There should be an email and phone number verification system which sends an automated six digit code.
* HTTPS should be used as the send and receive protocol because of how it handles encryption, for data exchange between client and server.
* There should be a maximum login attempts allowed before the account is locked to prevent brute force hackers
* There should be an automated password reset system to send a link to reset to a verified email address or phone number

### 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 require a login to access. If a user has no account they may register one.
* The system shall validate the user’s information such as email addresses or phone numbers with a verification code, and shall ensure that the password meets minimum security requirements before creating an account.
* The system shall display a login page before it is successfully logged into.
* The system shall display the home page with DriverPass’s logo on top, online test progress on the left hand side, the customer’s information on the right hand side, driver notes below the online test progress, special needs beneath the information, a photo of the driver, and a photo of the student.
* The system shall allow reservations to be made for driving lessons, including providing the ability to schedule times and dates.
* The system shall allow for purchases of superior packages.
* The system shall be connected to the DMV and provide up to date rules, policies, and sample questions for customers.
* The system shall allow customers to take online practice tests, which will update the online test section of the home screen.
* The system shall give reports with limited information to employees for review.

### 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 layout should be clean, sleek, intuitive, and consistent with environmental standards for each supporting platform.
* The interface must be scalable for users on mobile apps or on conventional computers.
* The UI should be able to adjust to new screen sizes and aspect ratios, so the functionality and presentation of the UI translates to various devices better
* User access should be controlled by roles and permissions. New accounts should be customers until they are given access by an administrator by a role change to employee.
* All users must be able to log in, register, and reset their password at will.
* The site should store sessions on a device to reduce the need to log back in from the same device at the same location
* Users should be able to log out and should be able to deactivate their account
* Users should be able to control their payment methods and modify them or remove them or add new ones
* The drive scheduler should be intuitive and there should be a calendar page to display scheduled drives

### 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?*

* Users have access to a device which is capable of running an app or using a modern browser
* Users have an internet connection
* Users have an email address
* Users have access to their email address

### 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?*

* Internet access is required to use the application
* Clients in different regions will find the site less responsive due to internet speed issues, especially if many assets are stored and used by the site, or the site is complex
* Not every device and platform will work with our app
* Some devices may need to use browser to access our site
* Not all browsers will be able to access our site, especially when we use scripting, cache, cookies, or other advanced features necessary to function

### 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.*

