# 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

* The client, DriverPass, has come to us for assistance in creating their web application to aid aspiring driver’s as they prepare for their exams. DriverPass offers drivers in training, hand on driver training along with in-person lessons. They desire to offer their customers access to online lessons and practice exams in accordance with current DMV testing all while enabling their users to schedule their learning with ease. The purpose is to assist DriverPass by making an application that is accessible and easy to use for customers to gain the experience they need to pass their exams.

### System Background

* There are a considerable number of drivers that have difficulty obtaining their driver license due to inability to pass their driver exams. Many of the drivers on the road today likely failed their driver exam at least once before obtaining their license. DriverPass believes that part of this struggle is due to the lack of proper practice and training. That is why DriverPass seeks to provide the practice and training required to pass your driver examination with confidence. DriverPass is working toward providing aspiring drivers three levels of training. These levels include on-hand driving experience under the supervision of trainers, in-person verbal lessons to prepare for written exams, and online access to lessons and practice exams. DriverPass desires make this extremely accessible to users through multiple platforms.

### Objectives and Goals

* The application will use a backend cloud-based server to meet the client’s desires
* The application will be accessible on all web and mobile devices
* Application will allow for multiple users with differing levels of control and access
  + Users will include but are not limited to Boss, IT officer, Secretaries, Customers
  + Customers will require differing access depending on package and activation status
* Customer creation will be accessible in the application, customer will have password for secure login
* Customer information will be required and stored including first name, last name, address, phone number, state, credit card number, expiration date, and security code
* Customer will be able to reset password on their own through confirmation of some form either via confirmed email or phone message upon creation
* Customer will be able to select, and purchase from offered packages on application
* Customer packages that have been purchased will provide access to the correct content and will track the status of the package as the customer uses the allotted service
* Customer will be able to set and adjust reservation times and locations
* Secretaries will be able to set and adjust reservation times and locations for customers
  + Secretaries will require access to customer package and activation status
* Reservations will be assigned a car and driver if there is one available for that time and location
* Application will track the status, location, time, and driver of each car
  + Number of cars will be set, but adjustable in case of expansion
* Application will provide online lessons and practice examinations that are in accordance with the current DMV standards
  + Customers will have access if the provided package has been purchased and is currently active
* Application interface will provide multiple pages, that are easy to navigate through to access the various functions of the application
  + The development team will work in close collaboration with the client to meet the interfaces aesthetic desires of the client
* Application will be connected to the DMV to receive notification when alterations have been made
  + Notifications will be accessible by the Boss and IT officer so that the proper action may be taken from there

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* Back-end service will be provided by cloud-based service provider
* Notifications will be received directly from DMV upon updates to policy and forwarded to administrative users
* Administrative users will have access to course material to upload current material
* Reservation schedules will update every 5 seconds

Rationale: Performance requirements are important for any system as they refer to speed, storage, and maintenance of the system. This client desires that they use a cloud-based server and moreover the application needs to be accessible on multiple platforms. Staying up to date with current DMV standards is vital to the success of this application. Thus, notifications will be pushed to the correct administrative users when changes in policy have been made. Furthermore, these users will be able to make the appropriate changes to course material for customers. Another important aspect of this application is reservation scheduling. To stay up to date and reduce scheduling conflict the schedule should update every 5 seconds.

#### Platform Constraints

* Application shall be compatible with any computer or mobile device with internet connection
* Database will be maintained by cloud service provider, proper connection through the correct APIs will be made to the cloud servers for access to information

Rationale: Platform constraint reference any operating system limitations along with any back-end adjunctive aids that may be requires. This application will be run on a cloud-based server and thus will require and API. API stand for application interface and it basically acts as a liaison between the client side of the application and the server side of the application. Thus, the database limitations will depend on the cloud service selected. The API will then allow access to information within the server side. This application should be compatible with all computers and mobile devices with the only limitation being viable internet access.

#### Accuracy and Precision

* Application will distinguish four primary user types, Boss, IT, Secretary, and Customer
  + Application will further distinguish customer types based on package purchase and duration status
* Application will track and monitor customer package progress
* Actions made on the system including those involved with reservation scheduling will be time stamped with a user and maintained in an activity log
* If appointments are scheduled simultaneously for the same time slot, car, and driver no reservation will be formed and the users will be asked to try again
* A contact page will be available to users to contact with issues

Rationale: Accuracy and precision within a system is concerned with distinguishing between different users, input sensitivity, and correct notifications of when an error exists. This system will require multiple levels of differentiating and monitoring of users to properly run. The first level of differentiation will reside in the four primary users of the system, the boss, the technician, the secretary, and the customers. Customers will then need to be further distinguished based on any packages they currently have active. This will ensure that customers that do not have active packages to not have access to materials they should not. Likewise, it will ensure that customers who should have access will. These packages will need to be tracked based on the use of the customer as to recognize when they have utilized their package limit. The client desires and activity log be kept within the system and for this a suggested time stamped version has been made. Finally, scheduling is the primary area in which errors may arise within this system. To mitigate these issues, we have suggested a regular update of the schedule, provided an algorithm for simultaneous requests, and the addition of the contact page for error reporting.

#### Adaptability

* Application will allow ability to alter customer study material and practice examinations by correct administrative users
* Application and user access will adjust accordingly with customer package use

Rationale: Adaptability of a system is an important consideration since it is concerned with the ability to make changes or for the system to adapt over time. With this system it is very important that the course information for customers be adaptable as DMV policy may change over time. Thus, there must be some way to alter the course material. There will be access for the correct users to add, remove, or change course material for customers. This application also needs to properly adapt customer access in accordance with their active packages.

#### Security

* Account will lock and force password reset after 3 failed attempts at login
* Database security will be handled by cloud service provider
* Users will have the ability to reset their password via email provided upon account creation
* Logout will occur after 10 minutes of inactivity on the application

Rationale: Security is important in any system and that is no different with this one. Most of the security will be maintained by the cloud service provider but there are some suggested security measures to improve usability and security. Forced password reset should occur after three failed login attempts to limit vulnerability from brute force. Users will have the ability to reset their passwords vis the email used upon account creation. Finally, a logout timer will be placed to limit open access to the application.

### Functional Requirements

Note: *Administrators is any employee of the business. Allowing the Boss, the ability to restrict access from there down but administrators will be used to reference any of the employee user types.*

* The system login page should have a link to account creation page
* The system should allow three login attempts and force password reset after three failed attempts
  + The system should allow password recovery via email
* The system should log out a user after 10 minutes of inactivity
* The system should open a homepage matching that of login credentials Example: Secretary opens to schedule while new customer opens to package options.
* All pages within the system except login related pages will have an access bar at the top to all other user accessible pages within the interface
* All pages within the interface should be easy to read and navigate for the user with clear titles
* System will include page displaying and allowing purchase of package options
  + Administrators will have the ability to remove packages from the options available
* System will include course material page accessible to administrators and corresponding package customers
  + Course page should resemble client’s initial ideas
  + Display and track test history and progress
  + Driver notes section with time, start, end, and comment sections
  + Customer profile information
  + Course material should be accessible by administrators for addition, removal, or editing
* The system will include a page for reservations/schedule
  + Schedule will update every 5 seconds
  + All administrators and active package customers will be able to reserve time slots, after providing required information
  + System will track cars, drivers, customers, times, and pickup/drop off locations of all reservations
* The system should track all user activity with user ID and time stamp of activity-on-activity log
  + Activity log should be accessible by administrators
* The system should allow administrator the ability to edit privileges for other users
* The system should receive notifications directly from the DMV upon policy updates
  + Notifications should be pushed to administrators to take appropriate actions

### 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.)?*

* Users will be able to interact with the interface via computer input device or mobile devices
* Interface will be composed of multiple pages that may be navigated easily via a header toolbar
* Interface is required to allow easy access to package information and purchasing, profile information, reservations, course material, and contact page
  + Expanded interface for administrators is requires allowing access to activity log, user settings, notifications, edit package options, and edit course materials
* Interface will communicate with users via text on screen
  + Interface may allow for audio through speakers if required for course material

### Assumptions

* Electricity and internet are available to users
* Cloud server is operating effectively

### 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 will not function without internet connection
* The system will be inaccessible to users who have forgotten their passwords and do not have access the email the account was created under
* The administrators are tasked with overseeing user privileges
* Packages may not be edited or added to the system only removed
* Reservations will cap once the 10 cars have been booked to their limit

Chart, waterfall chart

Description automatically generated