# CS 255 Business Requirements Document Template

## 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?*

* We are working with our client DriverPass to help them design a system to handle their needs as a company.
* DriverPass is a company that hopes to provide students and other new drivers access to online practice exams as well as on the road training to better prepare their clients for their driver certification tests.
* We will work with DriverPass every step of the way to make sure that we have a full understanding of their desired functionality, appearance and mission.
* Through this understanding we will be able to present a design to DriverPass that includes all their requests and desires.

### 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 sees a void in the new driver industry and wants to take advantage of that in order to help new drivers prepare for the driving test they take with their local DMV.
* DriverPass feels new drivers do not receive a comprehensive enough training, and often fail the test multiple times before finally being granted a license.
* They are hoping to offer multiple services through this product including online classes, practice exams and on-the-road training.
* Their hope is that their product will aid and enhance the educational experience before people go for their first driving test and in turn have an increased probability of passing it on the first attempt.
* The system will need to support administrative, secretary and user accounts. Users should be able to access and edit their own accounts. Administrative should be able to access all accounts and make changes when necessary, and secretary accounts should have the ability to view all user accounts for scheduling without the ability to make edits to personal information of the user.

### 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?*

* Users should be able to access data online and offline.
* Users will only modify data while online
* DriverPass needs to have the ability to control access behind the scenes to control employee access depending on role
* Customers should be able to schedule a reservation for driving lessons online
  + There should be a consolidated schedule to accommodate reservations online, over the phone or in person
  + Calendar will show when drivers are available and which driver/car is available at the given time
  + When a driver is booked, another user should not be able to select that exact time slot with the same driver
  + When registering for a driving lesson, user should be prompted to include an exact pick up and drop off location (these locations need to match)
* User needs to have the power within their account to modify or cancel appointments online
* An “About” section of the website should explain the services offered and the three current packages that exist for the user to select from when signing up
* Set a quantity of purchases available for each package to start so that DriverPass is not overwhelmed initially
* There will need to be a secure registration portal that either could be filled out by the secretary or the user online
  + Information needed from the customer includes, first and last name, address, phone number, state, credit card information
* DriverPass needs to be linked with the local DMV to ensure that all educational materials, rules and regulations are all as up to date as possible
  + DriverPass would like to receive a notification when any updates are released by the DMV
* Within the user profile they should be able to see a log of any driving lessons they have taken, including the times and any driver comments
* User should also have access to any in progress or completed tests, as well as the score (in progress, failed, passed) or the percent completed

## 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 will be web-based, and compatible with major internet browsers (chrome, safari, edge, Firefox)
* Storage of data and security has been requested to be based in the cloud so that additional backup and security efforts are not needed
* Users should be able to log in and access their accounts, even on public devices, on any device with a web browser and internet connectivity
  + Since we will be supporting access on web browsers, we will need to ensure that the site is compatible on mobile browsers and is able to resize for a mobile screen and remain fully functional at that size
* With ideal user internet connections response times when using the system should be no more than 20 seconds
* The system should automatically and regularly review the DMV website for updates to material we coach on, and when an update is available a notification will be sent to the administrator that an update is available for review and release to the user

#### 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?*

* As stated above we need to support major browsers including chrome, safari, edge and Firefox
* The system should be able to run on all major operating platforms (windows, macOS, Unix etc.) where the aforementioned browsers are supported in order to support as wide of a user base as possible
* DriverPass has requested operation via the cloud and therefore will not require any additional tools or databases as these are built in functionality to the cloud
  + Security and database management are all handled by the cloud

#### 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?*

* All users will have a unique user ID and password
  + Login credentials will be case sensitive, with a minimum length and required use of at least one number or special character
  + User IDs cannot be replicated, once selected by a customer that exact ID will be off limits for any other customer at registration and the system should notify the user immediately if the ID they have chosen is already in use
  + Two factor authentication via text message or email will be an option at registration, with the ability change the decision within user settings
  + Password reset will occur via user email recovery link, and can be sent to the email address linked to the account one time every 5 minutes
  + If a user incorrectly attempts to log in more than 5 times, or the user attempts to change the password more than 3 times in a single day, the account will lock, and a warning alert should be sent to the administrator for suspicious account activity, allowing the admin to follow up with the customer and ensure that nothing is amiss, or help them access their account if needed

#### 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?*

* Any accounts that are tagged as an IT admin account should have the ability to add, remove and modify users within the system without a change to the source code
* IT admin will also have access to all user and secretary account information and activity
* IT admin should be able to make website changes to products, availability, descriptions etc.
* IT admin is NOT able to write or edit source code
* System will adopt to platform updated by looking for and running updated during non-peak hours of usage 2x/week (DriverPass may request we change this frequency once more user data has been established and recorded)

#### 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 will login with either their User ID or email and their password
  + Note: as stated above two factor authentication is available to the user at account creation or in their user setting, and is optional but highly recommended
* If a user forgets their password there is a link they can select that will automatically send a unique password reset link to the email they have provided (as long as that email is tied to an existing account)
* The connection is safe and secure between the user and the server via use of a SSL, which is a basic security feature that creates an encrypted link to protect sensitive data sent between the user and server
* In the event of a potential “brute force” hacking attempt the end user should be temporarily blocked out of the system and the admin should be notified
  + In order for an account to be reinstated after it has been flagged for brute force attack the admin will have to personally send them a specialized account reset link after verifying their identity

### 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 verify user login credentials and allow access is credentials are correct
* The system shall allow end users the ability to view packages and services, complete a secure purchase of a package, schedule/edit/cancel in person behind the wheel training, make profile changes, track educational progress, access online content and classes based on purchased package, and log out of their profile
  + The system shall show exam progress
  + The system shall show exam scored
  + The system shall show behind the wheel comments, notes and scores from the instructor
* The system shall allow secretary users to view customer accounts, driver schedules, collect payments over the phone/in person and apply them to user accounts, make changes to the driver schedule and void/refund purchases upon request
* The system shall allow IT admin users the ability to make changes to any user account, reset passwords, make website changes to products and menu selection, approve website updates initiated by a change in DMV information and review any potential user account warnings of suspicious activity
* The system shall notify the IT admin of suspicious account activity
* The system shall send email confirmation of receipt at the time of purchase to the user and secretary
* The system shall notify via email the user and secretary of any scheduled in person classes or behind the wheel and automatically update the calendar

### 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.)?*

* Anyone with use of a browser and internet connection should be able to access the website and create a user account
  + This means we need support for a user interface on the most commonly used browsers and support for those browsers in mobile use mode
* Employees of DriverPass will have access through IT admin accounts or secretary accounts when connected through a verified company VPN
  + Employees will not be able to access their employee admin/secretary accounts through the use of the public interface without first logging in/connecting to the VPN
* The interface should have a landing page for external users where they can see information about the services and are prompted to login or create an account to have access to more features
* The interface should be fully accessible through the use of a mouse, track pad, touch screen, keyboard navigation and screen reader use
  + Additionally, the website should pass all automated accessibility testing and not contain any severe or high defects

### 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?*

* I am assuming that users will have reliable internet access and browser access on a device
* I am assuming that users have an email account they can readily access and link to their DriverPass account
* I am assuming that DriverPass will allow us a reasonable budget to meet their requests and system requirements
* I am assuming I have a team of people capable of building these requirements within the supplied timeline

### 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?*

* Depending on the give budget, this could be a limitation for my team to produce the content that is being asked of us
  + Additionally, budget may constrain the number of team members we are able to assign to this project and from there affect the timeline constraints negatively
* We could run in to issues with the number of browsers we need to support, as well as access to the browsers needing to be supports on mobile and desktop devices
  + This is a monumental task that my team may lack knowledge on, or we may not have the money to get the right person on board to accomplish this feature
* User functionality will not be possible without an internet connection
  + DriverPass mentioned a desire for users to be able to download materials for use offline, this could introduce issues where people could share or republish material owned by DriverPass and we would not have a way to prevent the user from doing this

### 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.*

