# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

* DriverPass, a new client, looks to offer new driving students the opportunity to train and prepare before they take their driving test. The owner of DriverPass sees an area of opportunity when it comes to training individuals for their driving tests. 65% of students fail their driving test. They hope to address this by offering online practice exams and on the road training.

### System Background

* Liam, the owner of DriverPass, sees a neglected area when it comes to training individuals for their driving tests. He notes that some individuals fail their driving tests at the DMV. Rather than just self-study, Liam hopes DriverPass can help better prepare students for their test at the DMV and pass reliably, with confidence.
* DriverPass hopes to do this by offering tiered training packages that include live in-person training, classes, as well as online content and materials. All accessible through a web-based program.
* The system should also help the DriverPass team in their roles whether that is in scheduling, security, offering the most up to date DMV information, collecting data, or creating reports.

### Objectives and Goals

* For the user, the system should:
  + Create user profile and collect necessary information
  + Have a user portal that houses their personal and contact information, schedule, special needs, and resources. It should also include details for contacting DriverPass.
  + Select and change which lesson package they wish to use
  + Be able to schedule and reserve driving lessons
  + Have a reset password function if needed
  + Show sample driving tests previously taken, their results, and details of the exam, including:
    - Test Name
    - Time Taken
    - Score
    - Status (not taken, in progress, failed, or passed)
  + Provide an area for the student to leave driver notes
* For DriverPass, the system should:
  + Have various permission levels for employees and clients
  + At admin level, be able to help reset passwords and block access
  + Notify admin whenever a change is made to a user’s profile
  + Track reservations, including:
    - the time scheduled
    - Student
    - Driver
    - Vehicle
    - Pickup Location
    - Any edits or cancellations to the session.
  + Create reports on activities as well as track current client progress
  + Be able to create user profiles and collect necessary information
  + Create reservations for clients
  + Be able to review an individual client’s progress:
    - See their various driving tests (scheduled, in progress, or completed)
    - See results of these tests
    - See any driver comments left by the student
  + Regularly check for updated DMV information
    - Receive notification of when and what updates occur

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* System should run as a web-based system via the cloud
  + Storage and security should be taken care of via 3rd party cloud-based service selected
* System should run on both computers and mobile devices
* System should format itself when used on mobile devices
* Under ideal circumstances, system should load in under 2 seconds
* Admin should be informed of load times in excess of 8 seconds
* System should be updated monthly for bugs and security fixes
* Major updates to the system should be saved for one large update every fiscal quarter, as necessary

#### Platform Constraints

* System should run on the 3 major platforms (Windows, Apple, Linux)
* System should be expected to run in any major web-browser (Safari, Edge, Firefox, etc.)
* A cloud-based service should be selected as a server for stored data
* A database for customer information should be created
* A database for test related resources should be created
* System should be accessible by a minimum of 1,000 concurrent visitors while maintaining expected performance

#### Accuracy and Precision

* System should assign a unique numeric ID to each account created for the system
* Each account should have a username and password
  + During creation, System should check if created username is already in the system and require user to enter a new username if the name already exists
  + Passwords should be case-sensitive
* Login should accept either a user’s numeric ID or username along with their password
* Accounts created should default to the customer permissions level
* Accounts should be able to have their permissions level changed by the admin
* With the exception of security related input, inputs need not be case sensitive
* System should provide a list of issues unaddressed to admin daily.
* System breaking issues (disconnected from server, issues loading parts of system, etc) should be immediately have notices delivered to the administrator

#### Adaptability

* User information should be stored in a database for easier correction
* Functions should be created that allow for changes (additions, removals, modifications) to a database without unnecessary changes to the core program
* System will notify admin when updates are available for platforms used
* Monthly updates to system will include updates to accommodate updated platforms used
* IT administrators will be able to add, edit, and remove users and their accounts
* IT admin will be able to change account permission up to the IT administrator permission level
* IT admin will be able to alter/ edit the system
* System will check for updated editions of 3rd party resources used and update accordingly

#### Security

* User will provide account ID or username as well as password to access their account
* 2FA will be required for every account access
* Accounts will require a reset after 4 unsuccessful login attempts
* Upon account creation, user will submit answers to security questions for account reset procedures
* A reset account will require answers to security questions or admin permission to enter in new password and unlock account.
* Edits to accounts should be recorded and gathered for review
* System will maintain a valid HTTPS certificate for secure data exchange
* Cryptosystem will be used to transfer data between client and server

### Functional Requirements

* The system shall allow visitors to create an account or log into an existing account
* The system shall validate user credentials when logging on
* The system shall provide different homepages based on user’s permission level
* The system shall allow users to reset their password
* The system shall allow users to view and edit their personal information
* The system shall allow users to contact DriverPass via a messaging system
* The system shall allow users to view, select, and purchase lesson packages
* The system shall allow users to schedule and reserve driving lessons
  + The system shall allow users to enter an address they wish to be picked up and dropped off from
  + The system shall allow the user to choose which day they wish to take their lesson
* The system shall allow users to cancel their driving lessons
* The system shall allow users to view scheduled driving lessons, previous and upcoming
  + The system shall show information on the driving instructor
  + The system shall show information on where the driver will be picked up
* The system shall allow users to view and participate in online lessons and tests available to them
* The system shall allow users to view which lessons or tests they currently have in progress
* The system shall allow users to view previously taken exams and view their results
* The system shall allow users to provide driver notes on the lessons being taken
  + The system shall provide room for lesson time, start hour, end hour, and driver comments in the driver notes.
* The system shall allow users to download resources available to them
* The system shall allow users to access up to date DMV information
* The system shall allow admin to reset passwords for users
* The system shall allow admin to block access to a specific user
* The system shall allow admin to edit user profiles and information
  + The system shall notify admin when changes are made to a user profile
* The system shall allow admin to search for and view a user profile
  + The system shall allow them to see their various tests and their progress
  + The system shall allow them to see the results of these tests
  + The system shall allow them to see driver notes left by user
* The system shall allow admin to track driving lessons
  + The system shall allow admin to view the driver, the instructor, which vehicle is used, pick up and drop off location, the time of reservation
  + The system shall notify admin to any changes made to a reservation
* The system shall allow admin to create, access, and download reports
* The system shall allow admin to create a user account for an individual
* The system shall allow admin to edit the packages available to customers
* The system shall allow admin to disable access to a package
* The shall allow an admin to edit a user’s permission level up to their own level
* The system shall allow the system owner to edit any user’s permission level
* The system shall allow the system owner to create new permission levels and edit what is accessible to that level

### 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 interface should begin with a standardized welcome and login screen
  + The login in screen should have a reset password option available
* The homepage should then appear based on the user’s permission levels.
* To begin, permission levels will be customer, employee, IT admin, and system owner.
* The homepage will always have the DriverPass logo at the top.
* For the customer permission level, the interface should allow them to:
  + See and Edit their profile
  + See current tests in progress
  + Enter special needs
  + View and edit driver notes
  + View test results
  + Access lessons and online tests
  + View their photo and instructor’s photo
  + Make and edit reservations
  + View contact information for DriverPass
* For the employee permission level, the interface should have the option, in addition, to:
  + Make a reservation in behalf of a user
  + Create and edit user profiles in behalf of a user
  + View current and upcoming driving tests, who will participate, which vehicle will be used and what time
  + Reset a password for a customer level user
  + Use a search bar to view a user profile
  + View and download reports available to the employee permission level
* For the IT admin, the interface should have the additional options to:
  + Change the permission levels of accounts up to the IT admin level
  + Block access to the system for specific users up to the IT admin level
  + View system alerts
  + View and download reports available to the IT admin permission level
  + Reset a password for an employee level user
* The system owner will have all previous interface options with these additions:
  + Change the permission levels of all accounts
  + Block access to the system for specific users of all levels
  + View and download all reports
  + Edit and disable packages available in the system

### 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 site will be accessible 24/7
* Users will have access to a computer or mobile device with internet access
* The user will be able to read and write in English
* The user will not need an invitation to become a user of the site
* Consequences of not showing up for driving lesson will be handled outside of this system.
* DriverPass has a payment system in place or planned for operation of the site
* DriverPass has no financial constraints on hardware or 3rd party services used to maintain and run the site
* DriverPass will not have on average more than 1,000 concurrent users of the system
* Assumes that there is not a limit in how many vehicles or instructors are available for reservations

### 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?*

* System updates, especially the quarterly update, will prevent users from accessing the site for a period of time which could cause scheduling issues and redundancies
* The budget of DriverPass will determine how many users the site will actually be able to handle
* The budget of DriverPass will determine which 3rd party cloud services will be used and what features will be available as a result
* A large subset of driving test participants are immigrants. Having the current system only available in English limits the number of possible users that may consider using the service.
* Support to customers (making reservations, contact center, password rest, etc.) will be dependent on the staffing of DriverPass
* Not all features may be deliverable based on DriverPass’ release schedule
* Site could become bogged down, run poorly, if there is a large influx of concurrent users in excess of the proposed 1000.

### Gantt Chart

A screenshot of a gantt chart

Description automatically generated