# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

* To create a comprehensive system for the client, DriverPass, to provide training, both online and on-the-road, to new drivers
* The client's goal is to provide customers with the necessary skill and training to pass their local DMV driving test

### System Background

* client, DriverPass, has identified a void in the market: new driver training
  + *"So many people fail their driving tests at the DMV. I’m starting this company to provide this type of training for my customers." - Liam, owner*
* system will offer customers online classes, practice tests, and in-person lessons, to help them pass their local DMV driving test
* ;essons include driving training as well as education on DMV rules and policies

### Objectives and Goals

* system allows users to create appointments for driving lessons
  + lessons are two hours
  + customer can select day and timeboxes
    - system will need to maintain an orderly schedule, and identify and prevent scheduling conflicts/issues
  + customer provides information:
    - name, address, phone, state
    - credit card number, expiration date, and security code
    - pickup/dropoff location
    - customer information will need to be encrypted and handled according to accepted best-practice security standards
  + possible to make reservations via website or by calling office by phone
  + track the user (customer), driver, date/time, and car, for each scheduled lesson
  + system should support packages for the customer to choose from
    - packages specified:
      * 6 hours in a car with a trainer
      * 2: 8 hours w/trainer, in-person rules/policy lesson
      * 3: 12 hours w/trainer, policy lesson, plus online content
    - client may wish to offer different packages in the future
    - client needs ability to disable packages if necessary to prevent further registrations
* client requests a web-based, cloud-based interface providing access to various features and data
  + online test progress
    - multiple tests, in-progress or completed
    - track test name, time taken, score, status
      * statuses: not taken, in progress, failed, passed
  + driver notes
    - lesson times and driver comments for on-the-road lessons
  + input form for providing info for appointments
  + contact pages for company and students
* system should connect to DMV server/database to remain compliant with new policy updates
  + system should receive notification whenever DMV posts a policy update
* security
  + system should support different rights and roles for users
    - IT account needs full access to all accounts
  + system should track user activity and all changes made
    - system should be able to print an activity report including all activity logs for a specified user, account, car, driver, etc.
* system users
  + customer users -- mostly new drivers about to take their driving tests
    - able to make/cancel/modify their own appointments
    - able to reset their own password
  + company employees
    - Liam - owner account, full permissions
    - Ian - IT officer account, full permissions
      * responsible for maintaining/modifying system
    - secretary account - able to make appointments for customers
      * secretary takes appointments by phone and inputs them into system
* client expressed a desire to have minimal involvement with backup and security systems
  + *"We do not want to deal with backup and security; we need that to be taken care of. We need our focus to be on running the business with minimal technical problems."*

*- Ian, DriverPass IT Officer*

* + client may prefer a third-party backup/security solution
    - if handled in-house, system should minimize need for client involvement

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system shall run in a web-based environment and support all major web browsers (Chrome, Firefox, Microsoft Edge, Internet Explorer, etc.)
* The system should support both desktop and mobile browsers, with separate UIs designed for each.
* Time to execute a user request (such as logging in, activating an online training course or test, or creating a reservation) should not exceed three seconds.
* Any user action that affects a tracked data item (completion of a course or test, creation/modification/cancellation of a training reservation) should trigger an immediate database update.

#### Platform Constraints

* The system should run on a Linux server.
* The system requires a database to track various data:
  + User information
    - Name, address, payment information
    - Training course and test completion history
  + List of cars and drivers owned by the system
  + Active on-the-road training reservations, and history of previous reservations
* The system must be capable of receiving updates from DMV servers to remain with law and policy changes.
  + To ensure maximum compliance, the delay between a DMV update and the system detecting and merging that update shall not exceed five minutes.

#### Accuracy and Precision

* Each user account shall have a unique username which serves as a primary identifier.
* Account usernames are not case-sensitive, but passwords are.
* The system should automatically notify the IT administrator in the event of unauthorized attempted access to any user account.

#### Adaptability

* The system shall allow for user accounts to be created, modified, and removed without directly modifying code or the system itself.
* The system shall be capable of receiving regular updates without significant interruption of service availability.
  + Updates can come from the client DriverPass, or from DMV servers.
* IT administrator account(s) shall have the ability to modify user accounts:
  + IT admin can reset user account passwords.
  + IT admin can block user accounts from accessing the system.

#### Security

* User login requires verification of username and password.
  + Transmission of login credentials should be encrypted for secure access.
* After three failed login attempts within ten minutes, the user account in question will be locked. Access can only be restored by IT administrator.
* If forgotten, user password can be reset by IT administrator.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall provide web-based content (training courses and tests) to users.
* The system shall record course and test completion data for each user in a database.
* The system shall allow the user to create a training reservation.
  + Each reservation includes the customer user, the associated driving instructor, the date and time of the training session, the pickup and dropoff location, and the selected training package.
  + For each completed training session, the system shall record driver notes including start and end times and comments.
* The system shall allow training packages to be disabled by the system administrator.
* The system shall allow the primary administrator to view and print activity records for all training sessions.

### User Interface

* The user interface shall provide customer users with online test progress, driver notes from recent training sessions, user profile information, special needs (if applicable), and driver/student photos (if applicable).
* Users can access and interact with the system via desktop or mobile browser, with feature parity between both options.
* Users of the system, and their allowed functions:
  + Customers:
    - Login to personal account
    - Reset own password if forgotten
    - Access training courses and tests
    - Create, modify, and/or cancel reservations for on-the-road training
  + Customer service agents/"secretaries":
    - Create, modify, and/or cancel reservations on behalf of customers who
  + IT administrator:
    - Reset user passwords
    - Block user accounts from accessing the system
  + System owner:
    - View and print records for all lesson reservations

### Assumptions

* We assume that the user is accessing the system through a compatible web browser, either on a desktop or mobile device.
* We assume that the user is accessing the system with a standard input device, such as a mouse and keyboard, or a touchscreen.
* We assume that DMV servers will be updated with the most current policy information, as our system updates depend on theirs.

### Limitations

* The system can supply training courses and tests to any number of users, but the quantity of users that can simultaneously be provided with on-the-road training will be limited by the availability of cars and drivers.
* The system can supply training courses and tests to users in any location, but on-the-road training will be limited to serving only geographical regions in which there are available cars and drivers.
* The initial system release will not support the addition or removal of training packages/modules by nondevelopers. This functionality may be implemented in a future release.

### 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.*

