# CS 255 Business Requirements Document Template

## System Components and Design

### Purpose

This project is for DriverPass a driver training company. The purpose is to provide online motor vehicle driver classes and tests for their customers. With optional scheduled physical on-the-road driving training to help customers better prepare for DMV driving testing and licensing.

### System Background

* *DriverPass wants to create a better driver training platform for customers attempting to gain vehicle licensing from their local DMV.*
* System administrators need to be able to access the system from any computer or mobile device and run on the cloud.
* System administrators need the ability to run reports that will be compatible with csv software.
* System security will be handled with roles dictating which users can access what, with system administrators being able to change/remove users’ permissions.
* The system needs to keep records of changes made in reservations that can be accessed through printing a report.
* *The system will provide a place for customers to create reservations (with multiple package options) and access online courses/assessments, with an option for system users to create reservations on behalf of customers.*
* *The system will provide a place for drivers to identify customers, view current reservations, what time block has been scheduled, and what type of car will be used.*
* *This system needs to be able to accept API calls for when updates to the law/driving requirements change and then notify administrators/users of those changes so courses can be updated.*
* *The system needs to be secure with minimal user intervention, customer wants to be focused on business and not managing the software.*

### Objectives and Goals

*The system will provide users with the following functions:*

* + *Create, cancel, modify reservations*
  + *Check driver and vehicle information for reservations*
  + *Provide reporting and activity logs (Administrators only)*
  + *Display a user interface with all relevant information*
  + *Enable/Disable packages currently available (Administrators only)*
  + *Role enabling, disabling and removal (Administrators only)*
  + *Remote Online Accessibility with Username & Password*
  + *Updating and Notifications for DMV compliance*

*The system will provide customers with the following functions:*

* + *Create, cancel, modify reservations*
  + *View completion information for online courses, driver training, and any applicable notes*
  + *Intaking of personal information (Name, Address, phone number, CC information, pick up and drop off locations)*
  + *Accessible online with Username & Password*
  + *Secure lost password reset*

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* This system needs to run in a online web-based service that can handle potentially hundreds of reservations and potentially thousands of concurrent users that may be creating appointments or studying through online course offerings. To specify, on average a webpage takes 10 seconds to load so we should want to meet or exceed that figure. The system should be on a monthly update cycle once it has been fully implemented. That way new features can be integrated the current system can be refined and it allows for a 99% up time for customers.

#### Platform Constraints

* The customer did not specify a preferred operating system. Linux is the industry standard when it comes to servers as they are light weight, easy to use and performant. This website requires a user interface for appointments, courses and profiles for administrators/users. Ultimately this will need a website, a backend database with a client to server design and a backup database to ensure reliability of the system.

#### Accuracy and Precision

* Each user has to have their own unique account id, allowing them to update fields like their name, picture, address and password. All input will ensure regex compliance and the system should notify a user if an input does not satisfy requirements. There should be a log of events and if enough error logs are committed within a certain time frame, then an administrator should be notified. If the system goes down an administrator should be notified. Users should be able to contact support for any discrepancies on their account or if there are errors.

#### Adaptability

* Creating class functions for administrators allowing them to modify any other account (besides other administrators) The owner should have a master user class that can modify any account within specific checks and balances. Regular users should be able to modify their accounts or send a request to IT to delete their account. Automatic account deletion should occur within federal regulation parameters and after a determined period of inactive that notifies the user of pending account deletion. Administrators should be able to disable employee accounts.

#### Security

* Users will need a username/email and password combination in order to login. When an account is created than a user should be required to enter a email, username and password, personal information (Name, address (for appointments and billing verification), telephone number). A Client to Server connection where the client cannot change anything on the server and only makes request can provide security on top of role verification. If a user is unactive for 10 minutes, then they should be logged in automatically and required to resign in. If a user forgets their credentials, they should be able to input their email for a reset link or contact IT if they account remember what they sign up information is. If a user attempts the incorrect password five times, then captcha is required. After 10 incorrect attempts then the account is locked and will need to have the password reset before its accessible again.

### 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 will validate user login information
* The system will ensure the client side can only make requests to the server/database
* The system will allow users update information
* The system will allow users to access courses
* The system will allow users to set, cancel and modify appointments
* The system will notify administrators regarding log errors and downtime

### 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.)?*

* Currently the system should not have a mobile interface and should simply emulate the non-browsers version. This website should be accessed on a computer by customers but allows administrators the access to all processes on mobile or a computer.
* The users need to be able to see appointments, their instructor and the vehicle assigned.
* The users must be able to access courses and do tests, with the ability to replace videos, tests and quizzes.
* User content should have a very intuitive design that allows them to easily access their respective packages features and services.
* Administrator content should include an interface that allows them to see users online, error logs, message other employees and manage/fix tickets. If applicable to their role.

### 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 system should be up 100% of the time
* The design pattern used should be based on a user/server paradigm that sees users interacting with a webpage
* Grading of tests and other materials should be automatic
* Users should be able to repeat content as many times as needed
* If a subscription model is used for online content then active subscriptions need to be checked before allowing content to be accessed.
* The customer expects constant updates and feature integration
* Regulations and law compliance needs to be automated as much as possible
* Logging should be descriptive and easy to understand.
* Software support should be available and if applicable their should be customer resolution personnel available to assist them within 48 hours.

### 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 exponential scaling of users on the system should be considered and understood. It is not 100% guaranteed that the system will not be overloaded by user activity. The system will be designed with a specific number of users and those system resources exceed capacity the system will need to be refactored and updated to ensure smooth operation.
* Payment processing will not be implemented by us and will require an API from a third party to be implemented.
* Regulatory Compliance may need to be a manual process since laws are changing constantly and the adaptation of curriculum will have to be done in in advance of enactments.
* An employee experienced in system management needs to be employed to avoid excessive downtime.

### Gantt Chart

