# CS 255 DriverPass Business Requirements Document

**Charlotte Mancini**

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## System Components and Design

### Purpose

* The goal is to increase student success rates when taking their state’s department of motor vehicle licensing exam so that more students can achieve their personal goal of obtaining a valid driver’s license.
* Design and build a system for our new client, DriverPass, a secure online platform for student drivers.
* DriverPass will allow students to purchase one of three membership packages.
* DriverPass will grant access to driver licensing practice tests, and in person test-taking assistance, based on the chosen package.
* The system will allow the students to make online reservations for in-person driving lessons, based on the chosen package.
* It will track and display student performance along with various other reporting features.

### System Background

* The owner of DriverPass, Liam, noticed that there is a need for better driver training.
* According to Liam, “so many people fail their driving tests at the DMV.”
* He wants students to be able to take online classes and practice tests, in addition to providing on-the-road training to increase their success rate.
* The web-based information system will manage student memberships and provide reporting, backup, and security features.

### Objectives and Goals

* Deploy on the web, with cloud services for security and backup.
* Allow online access from any computer or mobile device, including reporting features.
* Establish authentication, with user assigned privileges (roles & responsibilities).
* Include an input form/interface for the user (student or secretary) to enter the student’s information, such as first name, last name, address, phone number, email.
* Allow students and/or secretaries to purchase a membership, make a reservation and automatically reset their password.
* Grant students access to take online practice exams and lessons, based on their package.
* Online test progress should be displayed including the tests each student has taken with status such as in progress or completed.
* Include a contact us page on the website for student support & feedback.
* Any of the membership packages can be disabled if the user has proper authentication.
* Track reservation information including who made the reservation, canceled it, or modified it with timestamp and reporting features.
* Identify the specific car driven during the lesson, the driving instructor, and the pickup location.
* In a section titled “driver’s notes,” show any comments the driver left as well as the times for the on-the-road lessons.
* Connect to state-specific Department of Motor Vehicles (DMV) for compliance with new rules, policies, or sample questions, and send notifications when updates are available.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* DriverPass shall be web-based, run in the browser, and be stored in the cloud.
* It shall be a cross platform application, meaning it can be used by devices operating on Windows, Mac, Linux, Android, and iOS.
* It shall be responsive on all devices.
* It shall be updated monthly, making sure to remain compliant with the DMV.
* Updates that benefit the application shall be implemented as soon as they become available.
* Any interaction between a user and the system shall not exceed two seconds, depending on the user’s device and bandwidth availability.
* System shall be robust. It shall be available 24 hours per day, 365 days per year.

#### Platform Constraints

* The system shall utilize a Linux operating system.
* The system shall be accessed from any major operating system, on any device with an internet connection. This includes Android and iOS in addition to Windows, Mac, and Linux.
* A database is required to support this application to track students’ profile information, performance such as previous test scores, and manage their purchases.
* A database will also be required to account for the number of over-the-road driving lessons that are included in the respective membership packages. This will allow the application to credit or debit the user account for lessons purchased, scheduled, completed, and track the remainder.
* A database shall track different membership packages and capture the history of each group’s members.
* Instructors will require support from a database that tracks scheduling over-the-road lessons including the student, instructor, date, time, and which vehicle has been assigned to this lesson.
* Additionally, the database will track the instructor’s notes or comments related to the over-the-road lesson.
* The stakeholders would require a database to support data analytics.

**Accuracy and Precision**

* The system shall properly authenticate and authorize each user and distinguish between the student, teacher, administrator, stakeholder, or another employee.
* This will include the use of usernames and passwords to correspond with the user’s roles and privileges.
* It may include the use of biometrics, such as fingerprint or facial recognition.
* Passwords are case sensitive, but the other input is not case sensitive.
* The system should alert the administrator of all critical errors immediately.

#### Adaptability

* Changes in user authentication and authorization do not require changing code.
* The system interface is available to facilitate adding new users, deleting users, or modifications to user privileges.
* The system shall adapt easily to platform updates with expanding cloud storage.
* The IT administrator requires complete and unrestricted access.

#### Security

* The system shall utilize user authentication and authorization.
* The system shall require a username and password to access the application.
* SSL certificates and encryption shall secure the data exchange between client and server.
* In the event of a “brute force” hacking attempt, a user account shall be deactivated and flagged for administrator.
* Only administrators and instructors can view all student records.
* Students can only view their own record.
* Forgotten password initializes an email to user with reset instructions.

### Functional Requirements

* The system shall validate user credentials when logging in.
* The system shall enable a user to contact support.
* The system shall process membership purchases.
* The system shall display student performance dashboard.
* The system shall schedule over-the-road driving lessons.
* The system shall provide simulated practice licensing tests.
* The system shall allow students to view instructional content.
* The system shall enable the administrator to implement updates and changes.
* The system shall enable the administrator to add new users, delete users, and modify user accounts.
* The system shall track student lessons as part of a package membership plan including time and date stamping.
* The system shall track student, instructor, vehicle, time, and notes for each lesson.
* The system shall track student test scores and display test status.
* The system shall connect to the DMV for updates.

### User Interface

* The interface shall be user-friendly.
* The interface shall allow students to purchase memberships.
* The interface shall allow users (students or admin) to schedule appointments.
* The interface shall allow students to take simulated licensing tests.
* The interface shall allow students to view instructional content.
* The interface shall allow administrators and stakeholders to view & print reports.
* The user will interact with the interface from any device capable of connecting to the internet.
* The interface will be used by students, instructors, administrators, and stakeholders.
* Administrators will access the interface to support users and maintain the system.

### Assumptions

* Electricity is present.
* Bandwidth is sufficient.
* Internet Connection is functioning and accessible.
* User has a device with sufficient RAM (Random Allocated Memory) and processor speed.
* User is fluent in the language of the application interface.

### Limitations

* The system shall be limited to passenger vehicles only; no motorcycle licensing lessons are available.
* Our team is limited to only four people, and 50% of the team is responsible for completing the majority of the tasks.
* Platform design constraints.
* Time constraint of 16 weeks to completion.

**Citation:**

Valacich, J. S., & George, J. F. (2019). Modern Systems Analysis and Design (9th ed.). Pearson Education (US). <https://mbsdirect.vitalsource.com/books/9780135172827.>

**NOTE: The Gantt Chart was uploaded separately.**