CS 255 Business Requirements Document

Valerie J. Smith

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Dr. Greg Stefanelli

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## System Components and Design

### Purpose

* The client, DriverPass, is a company that have recognized a need in their local market for better driver training to improve the number of drivers that successfully pass their driver’s test at the local department of motor vehicles (DMV).
* The client is asking for a system to be able to assist them in their goal of improving driver training by providing their prospective clients and employees a system that provides the ability to take online practice exams, online classes, and on-the-road training, along with business management specifications.
* The client is asking for the ability to be able to host the system in a cloud-based environment that includes security and backup and storage features, along with a

role based system for the employees of the company to manage their records as well as to be able to customize their drivers’ training packages.

### System Background

* DriverPass wants the system to assist them with their business goal of providing an online testing and course-based driver training solution that helps their student’s successful pass their driver’s test at their local DMV, with an option for on-the-road drivers training.
* DriverPass hopes to solve the problem of the high percentage of driver’s test failures in

their community.

* The components that are needed for this system are:

1. The ability for the business owner to access data from the system offline to download reports in a format such as Excel

2. The ability for their clients to take practice driver’s tests, online classes, and on-the-road training to decrease the percentage of failed drivers’ exams at the local DMV

3. The ability to have a reservation system that:

* Allows clients to make reservations drivers lessons with the ability to create, update, and delete the appointment;
* Tracks the number of driver trainers that are scheduled (10 cars with a 1:1 driver to car ratio)

4. The clients, or students, should be able to choose between three on the road training packages.

5. The ability to allow customization to the packages for future modifications.

6. The ability to remove a package that is no longer available.

7. The ability to connect to the DMV for updates.

8.. The system should be contained in a cloud-based environment with the ability to exist as a cloud-based solution with security features and backups.

9. The system will feature a custom UI that includes the following features:

* Company Logo
* Online test progress section with test name, time taken, score, and status.
* Test status indicator with not taken, in progress, failed, or passed.
* Online testing module with the ability to create, update, and delete tests.
* Online classes module with the ability to create, update, and delete classes.
* Drivers note section with an online form for lessons taken in tabular format with the fields lesson time, start hour, end hour, and driver comments.
* An input form for student information that contains the following features:

1. The ability for students or employees to create and update the form criteria.
2. Form fields for first name, last name, address, and contact information.

### Objectives and Goals

The Objectives of the system are to:

* Creating a customized UI interface built with business specifications for the website that is available on a mobile device.
* Providing a cloud-based solution with security and backup/storage.
* Create a database solution for the storage of data.
* Provide the ability to generate business reports that are available offline.
* Subscribing to the local DMV updates.
* Registration module with create, update, and delete capabilities to manage

on-the-road drivers training;

* Online test module with create, update, and delete capabilities.
* Integration with online LMS system Blackboard.
* Online training course module with create, update, and delete capabilities.
* Role based access of the system for business owner and employees.

The Goals are achieved if we provide the following functionality:

* A system that will manage the reservations for on the road drivers training.
* The ability to access their data in report format from the customer data and reservation database tables.
* The ability to integrate a LMS to create and manage online drivers tests.
* The ability to subscribe to the local DMV for updates.
* A User Interface that is representative of the needs of the business.
* The ability to manage the web application interface via a content management system.
* A system that utilizes a role based access level.
* A system that provides the ability to offer multiple on the road driving packages.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system shall be able to be accessed 24 hours a day.
* The system shall be hosted in a cloud based environment.
* The system shall have the ability to scale according to the number of users during the peak periods of 11 am to 8 pm.
* The system shall manage a regular update schedule that ensures functional and security updates are installed.
* The system shall backup daily.
* The system shall provide logs that track daily system errors.
* The web application shall be available in Microsoft Edge, Chrome, and Safari web browsers.
* The system shall maintain a low margin of error.
* The system shall have a test environment.

#### Platform Constraints

* They system shall run in a Linux based cloud environment.
* The system shall require a database for the storage of business data.
* The system shall require an additional database for the management of the products and images necessary to maintain the website.
* The system shall require a database for the storage of temporary shopping cart data.
* The system shall provide role based accessibility features.
* The system shall utilize TLS secure transport for data.
* The system shall utilize web application and database firewalls.
* The interface shall be a web based application assessable on web and mobile devices.

#### Accuracy and Precision

* The system shall use password based authentication to determine a legitimate system user.
* The system shall require a user to create a password that is a minimum of 10 numeric and alphanumeric characters that contains at least one capital letter, one special character, and at least one number.
* The system shall track user activity visible to the administrator only.
* The system shall inform the administrator of invalid customer login attempts after three failed login attempts.
* The system shall lock a user’s account upon three failed login attempts.
* The system shall require a password change upon three failed user attempts at login.
* The system shall have the time zone stated in the time zone of the locality of the DriverPass company and local DMV.
* The system shall not allow passwords to be visible at the point of entry or at any other time.

#### Adaptability

* The system shall store website images externally.
* The system shall provide role based, password authenticated access for an IT Administrator to update the text and content for drivers tests.
* The system shall provide access for an IT Administrator to perform Linux operating system updates in the cloud environment.
* The system shall receive updates of the health of the cloud environment.
* The system shall alert the IT Administrator of system environment failures and warnings.

#### Security

* The system shall require the user to register prior to creating their login information.
* The system shall require the user to login with a user Id and password.
* The system shall require SSL to authenticate client and servers over the network.
* The system shall allow users three login attempts before requiring a password change.
* The system shall require users to have an alphanumeric password of a length not less than 10 characters, with a minimum of one capital letter and one number.
* The system shall require one special character only in the user password.

### Functional Requirements

* The system shall have the ability to download data reports in excel format.
* The system shall have the capability of a system administrator.
* The system shall have the capability to create, edit, or delete passwords.
* The system administrator shall have the ability to create, update, or delete reservations.
* The system administrator shall have the ability to create a change report for reservations.
* The system shall have the ability to allow a customer to schedule a reservation for driving lessons.
* The system shall have the ability to track drivers to the student they are training.
* The system shall have the ability to create, edit, and delete driving packages.
* The secretary shall have the ability to create, edit, and delete appointments.
* The system shall have the ability to store a user’s first name, last name, address, phone number, state, credit card number, expiration date, security code, and pick up/drop off location.
* The system shall have the ability to connect to the local DMV in order to subscribe to updates.
* The system shall have the ability to allow the system administrator to create, edit, and delete drivers training practice exams.

### User Interface

* The user interface will require the following sections:

1. Online Test Progress Bar
2. Customer Contact Information
3. On the Road Drivers Lesson Information with Drivers Notes
4. Customer Special Needs Section
5. Display Driver Photo
6. Display Student Photo
7. Business Contact Information
8. Ability to connect the customer to the LMS section for Online Drivers Training Practice tests
9. Ability for Administrator to make updates to images and content

* The User Interface will be a web based interface that is accessible on a personal computer or a mobile device.
* The User Interface will be available in Google Chrome, Microsoft Edge, and Safari web browsers.
* The users of the Interface are customers, driving instructors, IT administrators, and Office Administration
* Customer users will need to create an account, upload their photo, register for on the road drivers training, view their instructors information, register for On The Road Drivers Training, view the On the Road Drivers Training and Drivers notes section, register for online courses, access the LMS to take practice Drivers Training Exams, access the LMS to take online courses, view their test results and progress bar indicator, and the ability to enter payment information in order to pay for their courses/training.
* Driver users will need to be able to create an account, upload their photo, and create Drivers notes for their students.
* The IT Administrator will need the ability to update the images and site content, including updating and maintaining the online course material and online tests.
* The Office Administration will need the ability to register students via an online form to create, update, delete, and the student’s registration information as well as view the contact information for the students.
* The Office Administration will need the ability to register the students for On the Road Drivers Training and to be able to accept payment from the student via an online form.
* The UI needs to display updates from the local DMV.

### Assumptions

* All developers working on the project will complete their assigned work by the time it is due on the schedule.
* The scope of the project will not be allowed any change once the project work has begun.
* The system will have an interface built to approved UI design.
* The client will create the drivers training exams in order to add them to the system.
* The client will provide credentials in order to subscribe to updates from the local DMV.
* The client’s IT Department is familiar with cloud based computing systems and has the materials to educate themselves on their use.
* The client’s IT Department is familiar with and has the working knowledge of modern database system integrations and is familiar with RDMS and SQL.
* The client’s IT Department is familiar with managing web site content via a CCM.

### Limitations

* The developer resources allocated for the project will be available for the duration of the project.
* The project has a start no earlier than date of January 22, 2022 and end no later than May 10, 2022.
* The number of developers available for the project is 5.
* The project will remain within budget without scope creep.
* The accepted system implementation plan will not change once the project has begun.

### Gantt Chart

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