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CS-255-J7045 System Analysis and Design 23EW5

June 04, 2023

# CS 255 Business Requirements Document

## System Components and Design

### Purpose

DriverPass is a new company that provides on-the-road driving lessons at local DMV’s, as well as online practice exams for driving students. The owner of DriverPass would like to leverage the new system to track and manage the operation through report generating, while allowing students (customers) to purchase and schedule driving lessons, drivers to log driving notes after providing driving lessons, secretary users to create new driving lesson appointments and modify existing appointments, and administrators to control different user accounts. DriverPass has retained the services of our company to develop a system to manage their operation.

### System Background

* The system will need to be connected to the DMV so that updates to the rules, policies, exam sample questions, etc. can be notified.
* The system should preferably be cloud-based with integrated backup and security features.
* The system user interface should display each customer’s information, online test progress, lesson summary notes, and contact information.
* The system needs to be able to provide online classes, including providing course materials and quizzes.
* User component:
  + Administrators need to be able to control different user accounts, including granting and limiting account accesses.
  + Secretary needs to be able to access the system to create new driving lesson appointments, and modify existing appointments.
  + Students need to be able to purchase driving lesson packages using the new system.
  + Students need to be able to self-schedule driving lesson appointments using the new system.
  + Drivers need to be able to log notes after providing students with driving lessons.

### Objectives and Goals

* The system has the following objectives:
  + System needs to automate driving lesson appointment scheduling.
  + System needs to provide the owner the ability to track:
    - statuses of various users
    - driving lesson operations including the information on the driver and vehicle
* The system has the following goals:
  + Display information for each customer such as personal information, online test progress, driver notes including special needs
  + Provide the ability to generate report to track operation logs, including the updates to reservation
  + Allow customers to sign in to access the system using personal log in information
  + Allow customers to purchase driving lesson packages
  + Allow customers to self-schedule driving lesson appointments
  + Provide online classes for students, including course materials and quizzes
    - Allow users to self-register for classes or through the secretary
  + Customers:
    - Create login account and sign in using their account
    - Purchase driving lesson packages
    - Schedule driving lesson appointments
    - Make changes to upcoming appointments
    - Reset forgotten password automatically

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system needs to be available as both web-based and mobile application.
* The system needs to allow for access to data on any environment, both online and offline.
* The system should be able to run fast, and update in real-time as changes/updates are made.

#### Platform Constraints

* The system needs to be able to run in multiple platforms (Windows, Linux, Mac, etc.)
* The system requires server with different databases for:
  + user information
  + appointment package purchases
  + appointment scheduling
  + driving lesson logs
  + online classes and quizzes
  + System backup

#### Accuracy and Precision

* The system should allow various user roles to register using unique personal information.
* The system should allow access using authentication process with case-sensitive user ID and password inputs
* The system should alert the administrator and the owner when the user fails to log in to the system after certain number of attempts.

#### Adaptability

* The system needs to allow administrators to track changes and updates to driving lesson appointment database, and change user permissions to grant, limit, or block system access.
* The system needs to be robust and scalable to be adaptable to updates made to various platforms.

#### Security

* The system should allow new users to register using unique personal information.
* The system should allow users to access the system via log in process using their unique user ID and password.
* The exchange of log in credentials and payment information between the client and the server need to be encrypted.
* The system should be able to detect brute force hacking attempts and temporarily block log in access to the account attempting access, then alert the administrators.
* The system needs to be able to grant administrators the ability to reset user passwords.

### Functional Requirements

* The system shall allow users to register using unique personal information and create associated user-selected ID and password credential.
* The system shall allow users to log in to the system using their unique ID and password credential.
* The system shall authenticate user input credentials during login attempt.
* The system shall allow students to purchase various driving lesson packages.
* The system shall allow students to self-schedule driving lesson appointments.
* The system shall allow administrators to access data online from any operating platform, via mobile or web, and download reports in Excel or CSV format.
* The system shall allow IT administrator to perform maintenance on the system, including the ability to disable system features.
* The system shall allow registration of online classes by students and secretary

### User Interface

* All user interfaces should display the DriverPass logo as the header
* The customer user interface shall:
  + Display where/how users can register for courses
  + Allow customer to change lesson appointments
  + Allow customer to view schedule
* The secretary user interface shall:
  + Allow ability to view interfaces for specific user and read/write user data
  + Allow secretary to make/change user appointments
* The administrator user interface shall:
  + Allow admin to view report summaries, schedules
  + Allow admin to modify schedules
  + Allow admin to disable feature, module, or system for maintenance

### Assumptions

* System users shall have unique personal identifiable information for registration
* System users shall have access to the internet
* System users shall have hardware to access the system
* DriverPass shall provide provision for cloud platform for servers, databases, etc.

### Limitations

* System is not voice activated
* System will stop functioning if the user loses access to the internet in the middle of use
* System will stop functioning if it goes down for maintenance

### Gantt Chart

