# CS 255 Business Requirements Document

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## System Components and Design

### Purpose

* The purpose of this project is to help DriverPass take advantage of a void the market by building a new system that train students for a driving test at the DMV.
* DriverPass is a company that helps people passed her driving test by offering online training, test practice, and driving instructions.
* The company hopes to help DriverPass achieve an online efficient booking and client management system that can be maintained and monitored by the client with both online and off-line usage.

### System Background

* DriverPass as noticed there’s a need for a better driver training due to the failure rate at the DMV; they think providing online training with practice tests and on the road, training will help them pass the test.
* There are different employees, a scheduler, and the owner will need different access at different times both on and offline for specific needs.
* The system would assist the scheduler and employees and scheduling their clients’ driving tests and online training.
* By taking the work load off the client in making an online system in the cloud that the users can access will help driver pass increase their market share.
* The system would help with completing scheduling for people taking the test.
* The system would also help with online training and packages for their clients to purchase.
* The system would help with the main desk scheduling as the client would be able to schedule themselves.
* Administrator will be able to monitor with reports to manage employees.

### Objectives and Goals

Web Page Ui

* The system will have a main page to show the packages that are for sale which includes: package one, 6 hours in a car with a trainer; package two, eight hours in a car with a trainer an in person lesson where we can explain the DMV rules and policies; package three, 12 hrs. in a car with a trainer and an in person lesson or we can explain the DMV rules and policies plus access to our online class that includes practice tests. This main page should also have a login area with an option if the person has forgot their password.
* The driver dashboard will have the logo of the company on the top the information of the driver, online test practice, driver notes, special-needs, driver photo, and student photo. This will be connected to the online database and logic to show if the driver passed and what other tests have been completed
* There should be an input form where the student or secretary fills in information such as the drivers first and last name address etc.
* There should be a contact page for ways to get in contact with the company or the company to get in contact with the student depending on the person logging in.
* In admin area for tracking and ability to print out a report to see who is responsible.
* An online practice test area.
* An online class area.
* Booking area for the admin employee to view the 10 cars and track which user is matched up with a certain driver, probably in a calendar and time view.

Data Base

* The website will be hosted in the cloud to limit back up in security from their end.
* There should be an API that connects to the DMV so they can update with new rules policies sample questions or notifications when there’s an update.
* The registration should include the driver’s information: first and last name, address, phone number, state, credit card number, expiration date, and security code, special-needs student photo.
* The packages and the offerings, and ability to customize the packages or remove some of them or add new ones.
* An admin privileges to reset passwords and for tracking.
* Employee login privileges.
* User login privileges.
* Off-line download to device for reports to be exported in Excel.
* Practice tests an online classes data area.
* Database of the 10 cars to our driving sessions that push to the calendar in the UI, that matches a driver with the instructor.
* Data with the user matching the packages and completed package tasks.
* Data on each employee’s personal information for the user interface which includes online test progress driver notes driver’s information special needs driver photo and student photo.
* Privileges for both the secretary and the user to book and schedule appointments for driving instructions.

Business Logic

* The system should be able to determine who is logging in and grant specific privileges upon login.
* Do users should be able to update the user profile in the database.
* Once logged in the dashboard logic should push the specific data for the user, admin, or employee secretary.
* Admin logic should be able to update the database, review tracking reports, and up off-line option.
* The secretary and driver should be able to update driver notes update scheduling in the database modify the users’ data.
* The logic of the user’s progress should update the database as to what has been completed and what has been purchased.
* The database should get automatic updates from the DMV to update the requirements.
* The database calendar should get privileges from everyone an update to the user interface for scheduling and matching of driver with student, this logic should also determine if there’s a conflict in scheduling and be able to be updated.
* The business logic should have all the parameters of the packages in place, along with the scheduling of a driver in increments. This logic should update what’s been done and push it to the user’s profile which can be viewed by employees and admin.
* Business logic of the contact page should push the information to employees / students needed.

## Requirements

### Nonfunctional Requirements

#### Performance Requirements

* The system should be able to be scalable to meet the demands of the users during peak times the MTBF should be r(3) of 76%.
* System being web-based should be able to run on every single browser including mobile device browsers. This should undergo user performance tests and pass 90%. The system should be updated and maintained on a monthly basis to see if any vulnerabilities pop up in the library is being used that need to be depreciated. The system is will also get pull requests from the department of motor vehicles to update the database. The system should also be able to eliminate dormant users.
* System should be no longer to use than navigating a Facebook account meaning it should take no more than two hours to get comfortable with the system. If it’s too difficult for students and teachers could face a loss of value due to system on usability.
* The system must in import a module for banking to handle transactions in less than two seconds.
* The system should be able to pull up the client’s data in less than one second.

#### Platform Constraints

* The target platform is a web browser. A windows-based operating system hosts the website and a separate security server, that uses Microsoft cloud for data Storage. The cloud storage will use Kubernetes containers to hold the database that is an SQL.
* The web browser application should be able to be run in any modern browser except for windows explorer.

#### Accuracy and Precision

* Stored in an off-line server separate from the Microsoft server will be the Json file with the different privileges and user credentials for the highest level of security.
* The system also uses keys that are stored and have different levels of accounts like a standard user account and a privileged user account.
* Monitoring active activities in the account will be used to monitor and inform the admin or IT of an issue. Should be able to be tested by Junit testing and pass the exception is thrown at 80%.
* Only certain amount of login attempts will be allowed.
* Also, it will be limited to acceptable login locations.

#### Adaptability

* Liam will be the web base IT administrator responsible for maintaining and modifying the system. Liam will also have an admin privilege to be able to do this.
* The secretary and student driver will be able to schedule modify and make appointments on the fly if they wish. There also be a tracking system with timestamps that can be viewed by the administrator. J-unit testing should be able to confirm the workability at 100%.
* Administrator will have the highest privilege to be able to adapt to any students needs or change their password or modify the packages that are sold to the site.
* If there’s any other future changes Liam the web-based administrator will be notified as the changes come.

#### Security

* The system will run on a Microsoft server platform with login. There are two logins one for the server platform and one for the cloud environment. The rationale for this is there’s never been a known successful tag on the Microsoft cloud platform.
* The system will be a client server model with an encrypted Web-based token for data transfer.
* Resting on the Microsoft server will be secure code that will prevent several viruses and attacks like brute force hacking or escalated privilege or denial of service attack. If this happens the virus software or exceptions that are thrown will be alerted to the administrator.
* The web-based browser I have an authentication for the student or secretary. This will be the primary resource for the student and secretary that hosts the user profile scheduling and driver tracking.
* The system will only except certain amount login attempts, correct location, correct credentials, correct username. They’re also will be an email authentication.

### Functional Requirements

* The system should validate the user credentials and place that user with the correct privilege. This includes the admin for resetting passwords and viewing all data. The secretary to View and modify the calendar and or User profile. And the customer who can login and view and modify their dashboard and continue with an online practice test. The rationale for this is the website will be able to handle all business side of things for each user. The system should be able to undergo escalated privilege attacks of 100%. The rationale for this is a separate user is necessary to keep things organized and secure within the company and for the customer outside the company and gives the admin and secretary ability to perform their tasks.
* The admin should be able to login and have the highest privilege. The rationale for this is the admin needs to view database reports with timestamps and download them to excel off-line. The admin also needs to modify passwords. The system should be able to undergo integration testing and pass with 80%.
* Website also needs tracking to monitor which driver is paired with a student.
* The student should be able to upload/complete their user profile which is placed in the database for the admin or secretary to view. The rationale for this is the people working at the company need to be able to modify and view the client. The database should be able to handle the upload a profile pictures and data up to 2 MB a minute.
* The system needs to update with the department of motor vehicles requirements of testing and should be able to undergo an integration test of 80% pass rate. If the system cannot do that then the company will not be in compliance with the department of motor vehicles.
* The system must be able to run on a browser-based platform. The server a Microsoft platform and be accessed through the cloud database. Linking the software cloud hosting environment is necessary for admin and uploading and downloading information onto the different Microsoft servers. In the web browser-based platform is necessary for the customer to work at home.
* The system must contain learning modules for each driver package. The system must push the practice test materials to the students for each package and must be able to accommodate the database. This is so the student can progress through the package they have purchased. The system must undergo a J-unit test of 80% pass rate.
* The system must contain a database of the user’s information, financial information and academic information. The system must be able to hold 75 MB of customer information.

### User Interface

Web Page Ui

* The user interface will have multiple pages, and different pages for different users. The users includes Customer, Secretary, Administrator.
* The webpage should be able to have user is both on mobile and desktop size browsers. Can be tested with User performance surveys.
* The web page will show the logo on the top middle of all pages. Consistent coloring and texture.
* The webpage will have a simple interface that avoids cluttering and confusing the user and is consistent throughout all pages and uses, common Ui elements.
* The important headers with be larger in size than the lesser navigation bar on the top or category headers at the bottom.
* The User Customer will see a main page to show the packages that are for sale which includes: package one, 6 hours in a car with a trainer; package two, eight hours in a car with a trainer an in person lesson where we can explain the DMV rules and policies; package three, 12 hrs. in a car with a trainer and an in person lesson or we can explain the DMV rules and policies plus access to our online class that includes practice tests. This main page should also have a login area with an option if the person has forgot their password.
* The driver dashboard will have the logo of the company on the top the information of the driver, online test practice, driver notes, special-needs, driver photo, and student photo. This will be connected to the online database and logic to show if the driver passed and what other tests have been completed.
* There should be a page for input form where the student or secretary fills in information such as the drivers first and last name address etc.
* There should be a backend page that accesses the database with timestamps to see who modified and when for the admin to view and print
* The driver dashboard will track which student is paired with a instructor.

### Assumptions

* The users are registered at driverPass, I assume the student has ability to get to a web browser and register if this is not true, they may not access the system.
* The secretary admin must have the necessary privileges to access the level they are granted. If this is not the case, they will not be able to perform their duties.
* Driver pass must have a window base server that connects to a cloud environment if this is not the case the database cannot be maintained, and day-to-day business operations cannot be done.

### Limitations

* The system will be slow if there is a huge number of students on the system uploading to the profile or taking tests. It may be the case that during upload the server is overloaded.
* The client browser that communicates with the server Will not allow user to enter their credentials is invalid. Although they may be able to contact administrator to reset it and login with their email authentication.
* The client server model will not work if the authentication keys are incorrect.
* The admin will not be able to upload anything to the database while off-line.
* The system will not be voice activated for the deaf and less a third-party module on their own system is utilized, this will be difficult for a deaf person to hear directions in a video unless they have the necessary tools.

### Gantt Chart



## References

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