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# CS 255 Business Requirements Document

## System Components and Design

### Purpose

*What is the purpose of this project? Who is the client and what do they want their system to be able to do?*

* The project is for DriverPass, a client that specializes in helping students pass their driving tests by providing practice tests and online learning. The aim is to create a smooth online process for student drivers to practice for their tests and make reservations for classes.

### System Background

*What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?*

* DriverPass wants a one stop system that allows students to learn, take practice tests, and reserve driving lessons so they can pass their tests with ease.
* The system needs an admin account that can control different accounts, including granting authorization for other accounts.
* The system should have an account for employees that allows them to make appointments by phone or from walk-in customers.
* The system needs a user account for students so they can schedule appointments to take driving lessons.
* The system needs to store student data in a database so employees can access it from anywhere when online.
* The system wants to allow clients to download data, so they can access it offline.
* The system wants options for 3 packages for driving lessons.
* The system should include learning materials for students to study for the tests.
* The system should include a section for drivers’ notes.
* The system should have an interface that showcases user data and test progress.
* The system should be connected to the DMV, so that the tests and lessons stay up to date with any changes made by the DMV.

### Objectives and Goals

*What should this system be able to do when it is completed? What measurable tasks need to be included in the system design to achieve this?*

* The system should allow users to create their profile, where they can add their name, address, city, state, zip code, etc.
* The system should allow users to view online test progress, personal information, driver notes, special needs, student photo, and driver photo.
* The system should allow users to select packages and reserve time slots for driving lessons.
* The system should allow drivers to write notes.
* The system should allow students to take online tests.
* The system should allow students to access learning materials to study for the tests.
* The system should notify clients with DMV updates.

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

#### Performance Requirements

*What environments (web-based, application, etc.) does this system need to run in? How fast should the system run? How often should the system be updated?*

* The system should run on a web-based environment.
* Page load time should not take more than 5 seconds.
* The system should update the available time slots in real time to prevent double bookings.
* Commonly used components should be cached for a faster run-time.

#### Platform Constraints

*What platforms (Windows, Unix, etc.) should the system run on? Does the back end require any tools, such as a database, to support this application?*

* Driver pass should be compatible with Windows, Mac, Android and IOS operating platforms.
* The system should have a database to store user data.
* The system should use REST API to connect to any external sources like the DMV.
* The system should run in a cloud environment for price, security, and scalability.

#### Accuracy and Precision

*How will you distinguish between different users?* *Is the input case-sensitive? When should the system inform the admin of a problem?*

* Users will have a role associated with them that determines their authorizations.
* Usernames won’t be case sensitive, but the passwords will.
* The system should notify the admin if there is a crash, security breaches, space runout, and high user volume that can’t be properly handled.

#### Adaptability

*Can you make changes to the user (add/remove/modify) without changing code? How will the system adapt to platform updates? What type of access does the IT admin need?*

* Users should be able to update their own personal data like name, address etc.
* The admin account with the highest authorization should be allowed to delete user data.
* The cloud environment should scale dynamically to match the userbase.
* Authorized accounts can edit content of the learning materials, delete what is included in packages, and edit available time slots.
* An IT admin should have access to network traffic, cloud environment, and the database to maintain security.

#### Security

*What is required for the user to log in? How can you secure the connection or the data exchange between the client and the server? What should happen to the account if there is a “brute force” hacking attempt? What happens if the user forgets their password?*

* Users need to verify with a valid email before creating an account.
* Password must be at least 12 characters long, and include a capital letter, number, and a special character.
* While downloading files, the system should use File Transfer Protocol Secure (FTPS**)** to help transfer files to and from a server in a secure manner.
* Lock out users for 5 minutes after 5 attempts to log in.
* Lock out users temporarily requiring them to contact IT to log in if they still fail after 5 attempts.
* If the user forgets their password, prompt user to provide their email to send instructions to change password.
* Website should not be hosted in HTTP; it should be hosted in HTTPS.
* Regular scheduled backup should be in place to protected data.

### 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 shall allow users to create username and password while creating an account and validate these credentials while logging in.
* The system shall allow students to reserve time slots for driving lessons.
* The system shall allow employees to reserve time slots on behalf of students.
* The system shall showcase test progress for students.
* The system shall provide learning materials that are regularly updated to reflect the DMV’s data.
* The system shall allow instructors to write notes for drivers.
* The system shall allow authorized users to download reports on student data.
* They system shall notify authorized employees when time slots are selected.
* The system shall allow authorized users to assign driving instructors to students.

### 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.)?*

* A dashboard that showcases online test progress, personal information, driver notes, special needs, student photo, and driver photo.
* The system should have a menu bar that allows users to select notifications, reservations, profile, contact information, DMV links, and log out.
* The system shall feature a reservation page that allows users to select packages and include a form allowing users to schedule appointments and reserve time slots of two hours at a time.
* The system shall feature a testing page that calculates student scores upon submission of the test.
* For authorized users, the system shall have a page that shows all students that are currently scheduled for a class.
* For authorized users, the system shall feature a search bar to look up other users within the system.
* For authorized users, the system shall feature an edit option for disabling packages and blocking time slots.
* The system should have a responsive design that can adapt to desktops, phones, or tablet screens.

### 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?*

* Users have a valid email address.
* Users are primarily using Windows, Android, Apple or IOS operating systems.
* Users will schedule appointments based on the time zone of the location of the company.

### 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 system does not include in app messaging feature.
* The system does not have functionality to edit packages.
* The system does not allow online cancellation for students.
* The system does not have any offline functionality.

### Gantt Chart

*Please include a screenshot of the GANTT chart that you created with Lucidchart. Be sure to check that it meets the plan described by the characters in the interview.*

A screenshot of a computer

Description automatically generated