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# CS 255 Business Requirements Document Template

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## 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?*

* This project is being completed for DriverPass, who is our client.
* The overall goal of the project is to provide students with online practice exams and on-the-road training to better prepare them for driving tests to address the problem of a high failure rate at the DMV.

### 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 is seeking to fix the problem that so many people fail their drivers’ tests.
* DriverPass wants more people to be ready to pass a driving exam on the first try.
* The components of the system include a reservation system, online classes, practice tests, report downloading, and in-person lessons.
* In addition, there will need to be different accounts for users, drivers, administration, and secretaries.
* Secretaries should be able to create, modify, and delete reservations after speaking to customers. They should also have access to the student information input form.
* Administration access should be full system access for system maintenance and to address issues. This should include access to modify user accounts, modify forms, and add or remove material from the system.
* Drivers should have their application dashboard linked to their specific vehicle. There are 10 driver/vehicle pairs. They should be able to view their daily schedules and contact students. They also need to be able to leave notes from the driving sessions.
* Students/users should have the largest pool of resources within the application. They will need to be able to input and modify student information, schedule, modify, and delete reservations, study material, take practice exams, and review DMV guidelines.

### 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?*

* Users should be able to create accounts to store their first name, last name, address, phone number, state, and their credit card number, expiration date, and security code.
* Users should be able to provide a pickup and drop-off location for lessons.
* The system should be connected to the DMV and notifications should come through with any new policy changes.
* Users should be able to reset their password if forgotten.
* Users should be able to select from 3 different packages and varying price points.
* Users should be able to make, edit, and cancel driving lessons.
* Users should be able to access courses online.
* Users should be able to take practice exams.
* The system should keep track of student’s progress through courses and on exams.
* The system should allow instructors to leave notes about a student's driving lesson.
* The system should include a page allowing contact between DriverPass and students.

## 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 be a web-based cloud environment.
* The system should be a modern web application that is responsive and runs smoothly on mobile devices.
* The system should require less than 2-3 seconds of response time for users of any role. This will create a need for the caching of data, particularly large items such as study material.
* The system should update the database anytime reservations are created or modified, when DMV guidelines change, when students make progress with study materials or take practice exams, and when driver feedback is submitted following driving lessons.

#### 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?*

* The system will be web-based and should work on all modern browsers such as Google Chrome, Safari, Firefox, Internet Explorer, and Microsoft Edge.
* The system should be responsive and work on desktop sized screens, tablets, and mobile.
* The backend will require a database for storing user information, course progress, and the logging of feedback data. I would recommend SQL because this will be a relational database.
* The backend should also be linked to the DMV.

#### 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?*

* System users will be distinguished by unique usernames with associated passwords.
* System passwords will be case sensitive and used for authentication.
* The system will rely on role-based authentication to determine which content can be seen by a given user. Users will be divided into roles such as User, Admin, and Driver.
* Admins should be notified of problems if users or drivers cannot access the system, are locked out of their accounts, or lose access to specific services such as making reservations or taking practice exams.

#### 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 including students and drivers should be able to create user accounts and set passwords.
* Account modification and deletion will be completed via HTTPS POST calls to alter the backend database. These actions will not require the changing or writing of code.
* User system (browser) updates will not affect system performance.
* System updates such as feature changes, feature additions, or DMV guideline updates will be completed in a development environment by the development team and tested thoroughly on all platforms before release. System updates should occur in off—hours.
* IT admin needs full access to user account modification or deletion, driver accounts modification or deletion, course material maintenance, and reservation system modification.

#### 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?*

* To log in, users will need unique usernames and passwords.
* HTTPS POST calls will be used for added security to prevent man-in-the-middle attacks.
* User sessions will be associated with unique tokens for additional authentication. Cipher algorithms will be used to prevent sensitive data being transmitted across the network.
* To prevent brute-force hacking attempts, user accounts will be locked following 3-5 incorrect password attempts. This locking action will notify the admin. Users will be verified via email and prompted to update their password.

### 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 validate user credentials when logging in via unique username and password pairings. Role based authentication shall be triggered by each user’s account level.
* The system shall be web-based and exist in the cloud.
* The system shall allow users to create, modify, and delete reservations.
* The system shall allow the downloading of reports and materials for offline access.
* The system shall allow users to create and modify their accounts with information including first and last name, address, phone number, state of residence, and credit card information.
* The system shall allow users to create and change passwords.
* The system shall allow secretaries to access and modify reservations.
* The system shall keep track of all user progress through coursework and practice exams.
* The system shall notify users of upcoming reservations.
* The system shall allow users to choose from/purchase three different packages.
* The system shall provide users with up-to-date DMV guidelines and shall update the material when appropriate.
* The system shall allow drivers to view student records and take notes during sessions.
* The system shall provide a means of messaging or contact between staff and students.
* The system shall notify admin of any issues with user accounts, DMV guideline updates, or system errors.

### 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.)?*

* The UI will be web-based. This interface will work in all modern browsers and on mobile screens.
* Users will be able to interact via mobile browsers or computer browsers.
* The UI home page should include the following sections: online test progress, driver notes, the DriverPass logo, user information, special needs, student photo, and driver photo.
* The UI will include these pages: login, account creation, home, reservations/schedule, course materials, DMV materials, individual practice exams, user information, contact, and a page for recording and viewing of driver notes.
* The ‘superuser’ role for the owner and the ‘admin’ role will provide full system access to user accounts, reservations, driver notes, and the modification of course materials.
* The ‘secretary’ role will allow for the viewing, modification, and deletion of reservations.
* The ‘driver’ role will allow for the viewing of reservations, contacting of students/users, and the taking of notes during driving sessions.
* The ‘customer/student’ role will allow for the creation and modification of their own account, studying of course materials, taking practice exams, creating or modifying reservations, plan options, and payment information input.

### 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?*

* We assume that users have consistent and reliable internet access.
* We assume that customers already have unique email addresses.
* We assume that DriverPass has access to receive updates from the DMV’s system.
* We assume that users will use the two primary mobile platforms of iOS or Android.
* We assume that drivers have access to individual vehicles with associated phones, tablets, or computers.

### 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?*

* We have no control over access to the DMV’s database. This could potentially lead to issues retrieving and incorporating data.
* As a web-based system, we can make the system compatible with all modern browsers, but users will need to keep their individual versions updated on their own. This will also lead to technological limitations for the UI to be compatible with all systems and mobile friendly.
* The system will require internet access for most of the functionality. While downloading will allow for some offline access, poor internet reliability could limit the capabilities of our system for users.
* Budget limitations set in accordance with the client will determine the number of staff we can allocate to development. This will also impact our timeframe, although our Gantt chart already outlines our time limitation with a deadline of May 10.

### 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 graph with blue and white squares

Description automatically generated*