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CS-255-T3297

2/3/2023

# 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?*

* The client, DriverPass, wants to create a system that allows them to provide training and educational materials to drivers preparing for their driving tests 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?*

* The system is intended to fill the void of good driver’s education by giving test takers access to online classes, practice tests, and on-the-road training.
* The system will need to provide educational materials to the students.
* Will need to provide the student with a variety of options in terms of the amount of education they wish to receive.
* Will require an interface for the user to interact with and gather data from the use for personal and billing information
* Program needs to be dynamic as the client will need to be able to adjust the packages in the future.

### 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?*

* When the system is completed, it should be accessible from desktops and mobile devices with proper internet connection.
* Should have different user rights and roles with proper authorizations and authentications for those roles.
* Password reset option will be available should the user forget their password credentials.
* The client will have access to a printable reservation report that lists who made a reservation, who canceled it, and its latest modification.
* The user should be able to make reservations online or over the phone with a specified date and time and match them with a driving instructor and car.
* They will be able to choose from a list of three education packages with varying hours accompanied by a trainer in addition to learning materials.
* The client will have the ability to disable a particular package if they no longer desire to offer it.
* User Interface will reflect the design layout provided by the client depicting the logo along the top and card views that contain: online test progress, information, driver notes, special needs, and photos for both the student and instructor.

## 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?*

* This system will be run through a web based application for the maximum amount of portability across devices for the user and administrators.
* The system will need to optimize system memory usage in the most efficient way possible for quick and efficient navigation of the web page throughout use. Runtime should be no more than five seconds after logging in.
* The system should be updated on a periodic basis as updates are released in relation to DMV testing parameters as well as in response to any bugs that become prevalent during regular execution of the system by the users.

#### 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?*

* As stated above, the application should be executable across all web enabled platforms for the maximum amount of reach to the target audience of the system.
* The client has expressed interest in a cloud based solution so an easy-to-use cloud supported database such Firebase would be a great option to consider for supporting data storage and user authentication privileges across a multitude of platforms should the client decide to expand beyond a web based application.
* Since this is going to be a broad spectrum web application that the client may attempt to make changes to in the future with their own resources, we will want to write a Java based application that utilizes industry best practices such as design patterns and proper naming conventions for ease of readability for future development.

#### 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?*

* We will distinguish different users by having each user sign up for an account with their own username and password credentials.
* Administrators will be identified by unique usernames.
* We will give them the option of signing in with their Google and Apple accounts as they do not take much extra code to implement in the sign up and sign in fragments/activities.
* The inputs will be case sensitive to create a much larger array of available passwords to the user and to make it that much more difficult for an intruder to hijack their password.
* There will be alert tags in place for when a user has attempted to access an account too many times in which the user will have to login through a two step verification process or answer security questions in order to regain access.
* Should they fail the extra steps, the account will be locked until an administrator has been in contact with the user and investigates the reasoning behind the failed login attempts.

#### 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?*

* The user accounts will be modifiable through the cloud service database that we will utilize.
* These databases have options for the administrators to change, add, and delete related accounts as needed.
* In order to adapt to changes of the platform that the user is executing the application on, we will need to implement responsive layouts that will automatically adjust themselves to the user’s device. This means using proper constraint/formatting techniques in addition to creating a uniform presentation across all platforms.
* The IT administrator will need access to the database console to make changes to accounts as needed without having to make alterations to the code itself.

#### 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?*

* In order for the user to log in, they will first need to have created an account with their email address, a password that meets the acceptable parameters listed on the sign up page, and their Apple/Google account sign in credentials should they opt for that method.
* The connection or data exchange will be protected through server side encryption automatically provided by the Google Cloud system for enhanced security.
* Brute force hacking attempts will be dismayed by password parameters such as case sensitivity, special characters, and two step verification.
* Should too many attempts be made, the user will have to provide answers to security questions and if the attempts persist, the account will be locked and administrator investigation will take place.
* Should the user forget their password, they will be able to recover it through two step verification or answering security questions.

### 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.
* The system shall have a sign up page for users who do not yet have an account.
* The system will have a password reset process should the user forget their login information.
* The system shall provide purchased learning materials to the users who have purchased them.
* The system will present the user with the different learning packages available for purchase.
* The system shall provide a printable report for the administrator that includes all reservation information.
* The system shall allow the user to make and cancel reservations online or over the phone.
* The system shall allow the administrator to disable and enable package modules as needed.
* The system shall provide an online checkout service so the user can use their credit/debit card to purchase packages.
* The system shall store cart data so that the user can reference items that they wish to purchase at a later period.

### 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 interface will need to display the online test progress of the user that is currently logged in, their personal information, driver notes for themselves and from instructors, any special needs they might have, and photos for themselves and the driver who is training them.
* The users will include the students who are using the service along with the employees of the client to review the student information/reservations.
* The students will need to be able to view/update their cart of the purchases they wish to make, make/delete reservations, update personal information, make online purchases, and reference who their driving instructor will be and what time the reservation is scheduled for.
* The drivers need to be able to reference the student they are going to be instructing, what their special needs are, their notes from previous courses, progress towards completion, and reservation times.
* The user will interact with the interface through a scrollable view that has different interactive cards that can be clicked to update personal information, photos, special needs, and driver notes.
* Only employees of DriverPass will have permissions to adjust the Driver Notes and Photos sections.

### 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?*

* In the context of this application we are assuming that the user has a device, either a mobile phone or desktop, that has capabilities of accessing the internet and utilizing a web based application.
* We are also assuming that the customer will be able to make their transactions with an electronic payment because there was no mention of an in person payment during the interview process with the client.
* Also, we are assuming that there won’t be any server outages or security issues since the database maintenance is being outsourced to a cloud solution.
* Lastly, we are assuming there won’t be many technical issues beyond the occasional bug fix that can be resolved in a periodic update so there is no dedicated tech support in consideration as of yet.

### 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?*

* There will be limitations in the amount of technical sophistication in terms of hardware requirements that can go into the application because not all of the customers are going to have access to high end hardware in relation to their desktops and mobile phones.
* Also since the application will be geared towards a broad spectrum web based solution, it won’t be able to take advantage of many of the unique features of some devices (i.e. google assistant enabled, touch bar support, etc) without a restructuring of goals from the client.
* We do have time constraints with this project because we have about four months until the projected sign off meeting to put the app market.
* Lastly, our personnel is limited to Sam, Jennifer, Toni, Clark, and John, so the amount of personnel to distribute projected tasks to is finite.

### 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.*

