**CS 255 Business Requirements Document Template**

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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?*

* Client : DriverPass
* Purpose: Create an environment that allows students to train for their driving tests.
* Capability: Provide features for both the client as well the end-user for easier accessibility.

**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?*

* Problem: Significant percentage of students fail to pass their driving test with no active tool for them to study and practice.
* System Capabilities:
* Make reservations for driving lessons and online classes
* Enable registration with a phone call
* Basic security systems with user information reset
* Track user changes
* Accessibility via desktop or mobile device
* Add and remove users and their privileges.
* Ability to update information per DMV regulations
* Package modification
* Allow exporting of information into other programs (i.e. Excel)
* Components:
* Web application with the capability to store user information, manage full-scale reservation system both by employee and users, interface with features enabling users to track their progress. The client prefers cloud-based system to offload security and backup.

**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?*

* Support 3 active packages for purchase by the user. The client should be able to remove packages as needed. (Discussed further package modifications on future release)
* Notifications are made to clients when there are new DMV regulations.
* New registration will be restricted to a phone call, which an employee will then implement with 9/10 unique points of data per user.
* The interface should display the current progress of exams as well as the results of previous exams for the user to view at anytime
* Reservations can be made either online or by phone. These also should have the ability to be removed and track the current customer with their driver, car, location, time, and length of the session.
* Allow exporting of information into other programs (i.e. Excel)
* Password resets should be handled manually by the client.
* Users' profile and permission modification.
* Track the activity of all users on the system.

**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 will be web-based and should have the capability to operate on multiple web browsers.
* The system should be accessible to mobile users as well with sufficient format scalability.
* User engagement should be responsive and page load time should not exceed 3 seconds.
* System updates for routine maintenance should be conducted once a month, or as needed, preferably during nighttime.
* The system information database should be regularly updated to reflect any actions performed or changes made by the users, administrators, or the DMV.

**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 backend will rely on a SQL database.
* The system itself will be web-based, as such, it could be run on MacOS, Linux, or Windows, the recommended option being Linux.
* The operating browsers should include Chrome, Firefox, Safari, and Edge for both the desktop and mobile versions.

**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?*

* Each unique user will be assigned their own username and password referencing their account.
* These usernames and passwords will be generated by the system during profile creation and will be used to access the full system.
* Customers, Employees, and Administrators will have their own roles in the system hierarchy with function limiters in place as discussed.
* Both the username and password will be case-sensitive to provide an extra layer of security.
* Exceeding amounts of login attempts will notify the administrators after an allotted amount.

**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 IT administrator will require full access to perform their duties such as reverting access of former employees or resetting passwords.
* Users should be able to edit their personal profiles for information regarding payments, contacts, and location.
* System administrators will be given the ability to add, remove, and modify accounts.
* System backend update will be performed during downtime and should not exceed 2 hours in length for implementation.
* Changes and updates to web browsers will most likely not hinder this application, but regular tests should be performed to assure full functionality. This can be completed with user error reporting.

**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?*

* User login will require a case-sensitive username and password.
* The optionality of 2-factor authentication via email or sms texting could be added.
* The web app will utilize cryptography in addition to all network requests being passed through HTTPS for increased security.
* User accounts will be locked after 5 failed login attempts. This will subsequently alert the IT staff of the error details.
* Password resetting can be triggered by the user with a temporary password sent to their respective emails or phones.

**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 authentications and then administer authorization.
* The system shall maintain security protocols set in place.
* The system shall alert administrators regarding DMV regulation updates.
* The system shall show users their exam/quiz grades, feedback, as well as learning progress.
* The system shall allow for exporting of documents and reports for offline accessibility.
* The system shall only allow for data modification to the server to be done while online.
* The system shall prompt all customer demographics.
* The system shall provide customers with educational material and allow administrator-level users to contact customers.

**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.)?*

* There will be three types of users that interact with the interface. This includes Customers, Employees, and Administrators.
* The interface will serve as a navigation tool to help the user perform actions with the system.
* Desktop users will operate using a mouse and keyboard with appropriate on-screen functionality.
* Mobile users will operate via the touch screen in a similar, but scaled-down format to the website.
* All users should be able to log in to their respective customer/employee/administrator accounts via the home page.
* All users will have the ability to register/schedule lessons.
* All users will have access to course material and participate in quizzes and see their progress.
* The interface will allow users to communicate with each other via feedback from the instructors.

**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?*

* The system will have a constant connection to the internet so there is no unplanned downtime to prevent customers and employees from scheduling lessons and registering.
* All users will have access to the internet and either a desktop with a browser or a mobile device with browser capabilities.
* Customers will have access to either their email or SMS for lost password verification.
* Regulations set forth by the DMV are made public and are accessible through an API.

**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 time constraints of the project along with budget caps will affect the number of staff employed to develop this project.
* Given the framework we plan to use, most updates or changes to browsers should not affect the day-to-day workings of the web app, however, there may be unforeseen changes to specific browser operations which could limit functionality.
* Lack of constant network connection would result in a significant loss of website functionality on the user end. While there are minimalistic offline capabilities, most functions without internet connections cannot operate as intended.
* The availability of instructors could slow down the functionality of the driving lessons and serve as a bottleneck to the system.

**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.*

