**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?*

* DriverPass wants to create a system to allows their customers to access online classes and practice tests along with scheduling reservations for on-the-road driving training.

**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 to provide students with access to online material and on-the-road training to better prepare for driving tests. They've noticed the high rate of failed driving tests at the DMV and are starting their company to provide training for their customers.
* They need a web/cloud based system that allows customers access to online training materials and on-the-road training reservations restricted by the customers package selection.
* The system needs to track customer data and allow employee role restricted access to information, the ability to make reservations on customer behalf and notes from driving training.

**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?*

* System should be web/cloud based.
* Access system data online from computer or mobile device and be able to download reports and information with appropriate role.
* Support a variety user account roles with differing permissions to support customers, secretary, IT, and boss.
* Track changes made to reservations (who made, modified or cancelled reservations).
* Allow customers to make, modify or cancel reservations for on road driver training, setting time and date.
* Allow Employees to schedule reservations for on the road driver training on customers behalf.
* Track reservation dates and times along with assigned training driver and car.
* Allow customers to sign up for available packages and restrict access to online material and number of driver training reservations based on package chosen.
* Provide 3 initial customer package options with the ability for employees to disable specific packages for additional sign ups.
* Allow users to reset their own passwords.
* Ability to create new customer accounts and track user data in an appropriately secure manner, including: first name, last name, address, phone number, state, and their credit card number, expiration date, security code, pick up and drop off location.
* Allow customers to access online class and practice tests with appropriate package purchases.
* Provide front end web GUI for customer ease of use. Page should display onine test progress, user information, driver notes, special needs, driver photo and student photo.
* Customer accounts will need to track test status's with information for test names, time taken, scores, and status.
* Customer accounts will need to store student photos and allow uploading student photos.
* Training drivers will need associated photos.
* Drivers will need to be able to add comments that are displayed for the customer.
* Additional page required to allowed contacting DriverPass and a way to contact 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?*

* System needs to run on the web, preferably cloud based.
* System needs to support multiple client platforms, including PC, Mac and mobile as well as associated browsers.
* System needs to be able to support multiple clients connecting at the time in varying numbers
* System needs to have page load times of 3 seconds or less on average.
* System will need updating when DMV requirements are updated.

**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?*

* Web based client to be used on all major platforms (PC, Mac, Linux as well as iOS and Android mobile devices) and will need to support running on common browsers those platforms support (Internet Explorer, Microsoft Edge, Chrome, Safari, etc).
* Database required to store user data, appointment records, etc.
* Cloud service provider will need to be secured for server side requirements, including database.

**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 user with have a separate account with distinct login information along with role assignments to set authorization on the system. Session tokens will be used to validate active user sessions.
* Account roles need to exist for customer, employee, IT, and boss.
* Most input will be case agnostic, however login information will be case sensitive.

**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?*

* Updates to the user will be possible without code changes.
* Available packages for purchase can be turned off on a one-to-one basis.
* Modifying available packages is a feature expected to be added later.
* IT needs to be able to modify accounts, including resetting passwords along with standard employee access.

**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?*

* Utilize adaptive multi-factor authentication. If the user is logging in from the same location that they usually are logging from then just username and password are required to log in. If users are logging in from a new location, multifactor authentication sends a code to the email on file for the account that they will also need to enter.
* Utilize TLS to provide secure connections between client and server along with session tokens.
* Account locks for a length of time after a reasonable number of login attempts.
* Reset forgotten password link exists that allows password reset by e-mailing reset link to e-mail associated with account.
* Accounts have associated roles that limit authorization after authentication.

**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 login information.
* The system shall determine when it is appropriate to employ additional login requirements as part of multi-factor authentication and implements MFA.
* The system shall send additional log in code to user as part of MFA when appropriate.
* The system shall validate additional login code as part of MFA when appropriate.
* The system shall lock the account after a reasonable number of failed login attempts.
* The system needs to allow users to make, change, or cancel reservations.
* The system needs to track reservations.
* The system needs to allow users to access online course material.
* The system needs to display packages for purchase.
* The system needs to allow customers to purchase a package.
* The system needs to limit customer access based on currently purchased package.
* The system will display customer status and reservation information.

**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.)?*

* DriverPass System will be accessible from multiple devices, including mobile devices and their associated web browsers.
* DriverPass customer need to be able to purchase driver packages, access online classes based on current package, schedule, change or cancel road driver training reservations, view status.
* DriverPass Empolyees need the ability to schedule and change driving reservations on behalf of customers.
* DriverPass IT needs full access to all accounts, ability to change account access, ability to reset passwords, access to tracking record of changes made in the system.
* DriverPass Boss needs to be able to download reports.

**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 will have access to the internet and devices capable of using a web browser.
* Users will have the ability to be contacted by both phone and e-mail.
* An appropriate cloud based provider will be secured for the back end of the system to live on.

**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?*

* DriverPass customers may use devices and browsers that have been unanticipated in the systems design and testing.
* Due to being a cloud based web application, uptime may be impacted by downtime related to cloud provider.
* No mention of the cloud based provider that has been chosen has been mentioned. That must exist prior to the start date in order for time predictions to remain accurate.
* Resources allocation was discussed as part of schedule planning and seemed reasonable but unforeseen emergencies or shifts in availability of people could potentially put development behind schedule, especially for those tasks that are reliant on other tasks to complete first or expect to make use of the same resources after an earlier task completes.
* Later schedule predictions are highly reliant on customer approval after first design pass and no time has been allocated to adjust after the first customer review to account for feedback.

**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.*

