Southern New Hampshire University

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 section should describe what your consulting company hopes to achieve with this project.

- Purpose: design a system to schedule training and provide online classes and practice exams for DMV tests
- Client: Liam, owner of DriverPass (with Ian the IT officer)
- **Functionality**
    - schedule/modify/cancel driving tests,
    - Ability for customers to reset their own password
    - Access data from any device for downloading reports (possibly *.xls/*.xlsx format [maybe CSV?])
    - IT admin – full access for password resets / access control
    - Printable activity reports with user-modification information included
    - Ability to track which driver customer is paired with along with car, date/time info, pickup/drop-off info
    - Ability to add/modify/remove training packages
    - Notification whenever DMV policies change
    - Input area for student or secretary to fill in student info
    - Cloud based server tech

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? Tip: This section provides a "big picture" view of the needs. It's more focused on DriverPass as a company and their vision.

- Provide "better driver training"
- Take online classes and practice tests
- schedule/modify/cancel driving tests,
- Display tests taken or required with status (i.e., not taken, in progress, failed, passed)
- Display lesson times

- Input for driver notes
- Page with two-way communication for student/DrivePass

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? Objectives and goals are a more specific breakdown of the things that the system should do. They break down the functionality that the system should have. The objectives should be measurable, which means that you should be able to tell whether you have completed each one.

- Access data from any pc or mobile device for report access
- Printable activity reports with user-modification information included
- Ability to add/modify/remove training packages
- Notifications whenever DMV policies are updated
- Input area for student or secretary to fill in student info
- be able to identify the driver the customer is scheduled to go out with
- be able to track which user is matched up with a certain driver, time, and car
- Users can make appointments, cancel, and modify appointments online if they wish.
- Display tests taken or required with status (i.e., not taken, in progress, failed, passed)
- Display lesson times
- Input for driver notes

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 software will be operated by both users and employees using different access methods. Customers should be able to create, modify, and delete appointments using a browser-based website, meaning it is available to virtually all operating systems provided it has a compatible and up-to-date browser. What systems the browsers run on is only limited by the developer of that browser but should largely be available for Windows, Mac, Android, iPhones, and Linux. The system should operate at such a speed that customers aren't waiting more than a few seconds for commands or queries to process but no explicit requirement is stated in the interview document. Assuming the definition of "updated" is understood to mean adding or removing information from the website or system and not updating the underlying server software & operating system – which should probably be done as often as possible for security reasons – the system then should be updated as often as a customer or employee adds,

changes, or removes information about appointments, or as often as the DMV updates their rules, policies, or questions.

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?

- For customers of the company, the system should be accessible from any modern web browser so customers can access their accounts, view or change appointments, and reset their passwords. Any operating system capable of using a modern browser should then be able to work since the system itself is intended to web-based and run from the cloud.
  Employees needing access to the system can presumably access their information the same way albeit with different tools, for instance, to generate reports or display information about their upcoming appointments. A database of customers, car information, appointments, etc. would almost surely be required to implement the required functionality since everything would essentially be record-based.

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?

- Different users of the system would have different rights and levels of access. Basic customers would only have access to their own accounts to update their profile information or modify appointment information. Employees would have access to appointment information and the ability to create new customer accounts since they are required to call in first. The owner and the IT manager would be able to do all these things in addition to performing password resets, updating the catalog of available courses, and maintaining the system. The system should be case-sensitive to avoid confusion and increase security. The system should notify the administrator of a problem in the event of issues like password lockouts, suspicious connection attempts, unauthorized logins or access, or if their appears to be an issue with data redundancy – for example, if a file has multiple versions of itself on the server.

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?

- Assuming the definition of “make changes to the user” is understood to mean updating customer information such as address or phone number, then the ability does exist to make changes to the user without modifying code. The information for each customer exists as an individual and unique object, meaning that if a field for it exists in the object, then it can be modified. If the company wants to add more information to a customer record such as emergency contact information, the object itself would need to be modified by an analyst or someone who can understand and make changes to the code. The system runs on the cloud so the server itself should be getting regular security and function updates and should not require any intervention from DriverPass IT. The IT admin would need access to all functionality of the

system including account access control, password resets, and modifying the catalog of courses available.

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?

- The user should be required to enter a unique user ID and password to log in. The username should be alphanumeric (A-Z, a-z, 0-9) and could be a unique username or default to the customer's email address while the password should be at least alphanumeric with a minimum number of characters – at least 8 probably – and for added security could contain additional symbols such as '!', '@', '#', '$', or '|'. The password should also adhere to more modern rules such as one uppercase letter, one lowercase letter, and one number and, if symbols are available, at least one symbol. Two-factor authentication is suggested but not required. Secure the connection between client and server using HTTPS and any modern encryption standard like RSA or AES. To prevent hacking methods like brute force, have the system utilize a "captcha" or wait a minimum amount of time between login attempts with the time increasing between each attempt; if the number of login attempts crosses a predetermined threshold, the system should deny the user any further access without IT intervention. If the user forgets their password, the user should be able to reset it on their own but failing that, should be able to call DriverPass and have it reset with the assistance of an employee or IT, depending on whether the user is a customer or existing employee.

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 on login
- The system shall create reports for management
- The system shall allow access from anywhere on the internet
- The system shall display appointment information
- The system shall allow a customer to modify their personal information
- The system shall allow a customer to modify or cancel appointment information
- The system shall allow drivers to add notes to a customer account
- The system shall allow both drivers and customers to provide photos
- The system shall notify DriverPass of changes to DMV policies and test information
- The system shall record changes to records and information of who changed them
- The system shall provide online tests to customers who have requested/paid for them

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 shall show to customers:
    - Online test progress
    - Personal contact information
    - Notes from the driver
    - Any special needs
    - Driver and student photos
- The interface shall show lesson start/end times (in conjunction with driver notes)
- The interface shall provide an input form for contact information
- The interface shall provide a page with a means of contact between student and DriverPass
- The interface shall allow the driver to add notes to a student account
- The interface shall allow the driver to view upcoming reservations
- The interface shall allow appropriate employees to create/manage customer accounts
- The interface shall show current DMV content

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?

- Customers are all using modern and up-to-date browsing software
- System will not have any unexpected downtime
- The company running the cloud server is performing maintenance and security upgrades
- The page will display on mobile devices as well as desktop or tablet devices
- Users will not need accessibility options to access/utilize page

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?

- Server is not in-house so if server goes down must wait for hosting company to fix
- Not able to add or modify packages without a developer or analyst
- Access to internet is required for employees and customers accessing the system
- Customers must call to register account instead of doing it online

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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.