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?

- The client is a company called DriverPass. They want to fill a void in the market for training students for their drivers tests at the local DMV. They want a system that will handle training, practice tests, and scheduling driving instruction and practice.

System Background

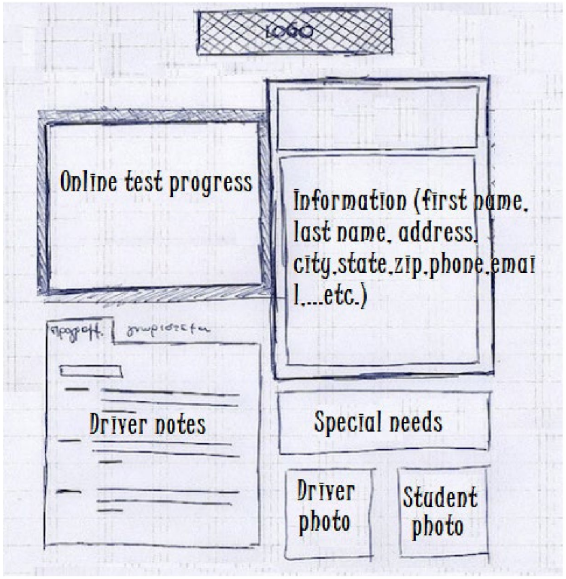
What does DriverPass want the system to do? What is the problem they want to fix? What are the different components needed for this system?

- They want it to provide training, practice tests and driving scheduling for clients.
    - For scheduling, time slots are two hours at a time. The client should be able to have their choice for when that is. This can be done from their online account or by calling our office and talking with a secretary.
    - Car and instructor tracking should be included as well. They want to be able to track which driver is with which car and the time they will be out.
- It needs to be able to track changes to the system.
- Different account types and access. It needs to have different roles and rights for admin access and such.

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?

- Product:
    - Training programs
    - Drive session scheduling
        - Users should be able to create and modify sessions.

    - Practice tests
        - Online tests should show progress updates.
            - Not taken, in progress, failed, or passed.
- Internal system:
    - Account types:
        - Admins
        - Secretaries
        - Users
        - Instructors
    - Tracking:
        - All system changes should be logged.
        - Changes made and the user who made the change should be logged.
        - Export logs
    - Admin accounts:
        - Access data remotely.
        - Download reports.
        - Ability to reset employee passwords and lockdown inactive accounts.
        - New account creation for all account types.
- UI sketch is included, provided by DriverPass.
    - 

    - Driver notes should be displayed something like this:
Lesson Time	Start Hour	End Hour	Driver Comments
- Input form for student information:
    - First name, last name, address, etc.
    - Contact information
- Contact page for DriverPass

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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 probably makes the most sense as a web-based environment. The customers will likely go there first when looking for driving test assistance, and allowing a smooth transition into the application and classes makes the most sense.
- The DriverPass system doesn't need to be particularly fast. Of course, it should load the page at a reasonable speed, but lightning fast isn't necessary.
- The system only needs to be updated when changes are made. For example, reloading the same information once a minute is a waste of time and bandwidth, however, it would be fine sending a reload script when data is changed to preserve bandwidth.
- It should be able to handle a lot of users at once as they are working through the practice tests and other online material.

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 a SaaS (software as a service) program, this should be capable of running in any web browser. This means that it can be accessed from anywhere with an internet connection.
- It should have a mobile-specific and desktop-specific web-layout. As this should have the capability to be accessed while out on the road to update info on the drives, etc.
- As far as databases go, there should be a couple:
    - One for all the customer information that includes information like drive data, schedules, login info, contact information, etc.
    - One that contains all the learning material and practice tests.
    - One that contains instructor information.

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?

- Basic users, the customers of the DriverPass system will have access to the learning parts of the system. Their accounts are created at any time and are activated when they are approved (and have paid) for the DriverPass course.

- Instructors would likely go through a hiring or approval process. They would have an email sent to them with an account activation link. This would give them access to set their schedules for driving with students.
- Admins will also likely go through a hiring process. I think their accounts could use the same link process, or – as it won't be a common occurrence – another admin would have access to create new admin accounts.
    - The system should alert admins of problems via email or text. This should be done as soon as a problem is detected either automatically in the system, or when another user reports an issue through the "Report a Problem" feature on the site.

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?

- There would be a feature for the admins to be able to make changes to other users through the UI. No code or database changes would need to be made manually – this would be done through a GUI on the website that admins would have access to.
- As a SaaS system, updates would be very quick and require no action from the users. This is all done in the background within a short window that can be announced beforehand. It runs entirely in a browser, very few (if any) platform updates should have an impact on how the DriverPass system operates.

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?

- A username and password to log in is enough for this program.
    - Usernames and passwords ARE case-sensitive.
    - Passwords ARE case-sensitive.

- The password should meet certain criteria:
    - 12 or more characters
    - Contains a minimum of one letter.
    - Contains a minimum of one number.
    - Contains a minimum of one special character (!,@,#,$,%,^,&,*, etc.).

- Encryption and authentication are two ways to secure the connection or the data exchange between the client and the server. Authorization for permissions is another way DriverPass can secure connections. It allows only data to be accessed by the people related to that data (i.e. customers can access their own data, instructors can access only their own student's, admins can access everything.

- Accounts will be locked after so many failed attempts. This will require either a password reset or another type of authentication like email authentication to access the account. Another option could be to implement 2FA (two factor authentication).

- If passwords are forgotten a password reset option will be available, located underneath the password field. This will send a link in an email to reset the 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.
- The system shall allow users to create individual accounts with unique usernames and passwords.
- The system shall provide a password recovery mechanism for users who forget their passwords, such as through email verification or security questions.
- The system shall store and manage user profile information, including name, email address, delivery address, and phone number.
- The system shall allow users and administrators (for customer service applications) to update and edit their profile information.
- The system shall implement role-based access control to restrict certain functionalities based on user roles.
- The system shall
- The system shall encrypt sensitive user data, such as passwords, using industry-standard encryption algorithms.
- The system shall implement search functionality to allow users to find specific learning content or practice tests within the system.
- The system shall provide a responsive and friendly user interface and experience. This should be consistent across different devices and screen sizes.
- The system shall implement measures to protect against common security threats.
- The system shall provide an intuitive user interface to ensure a positive user experience. Including accessibility features for hard of hearing, or other types of (driving compatible) disabilities.
- The system shall comply with relevant data protection regulations and privacy standards.
- The system shall generate and display relevant notifications to users based on their interactions and activities within the platform.
- The system shall track user activities and generate logs for auditing and troubleshooting purposes.

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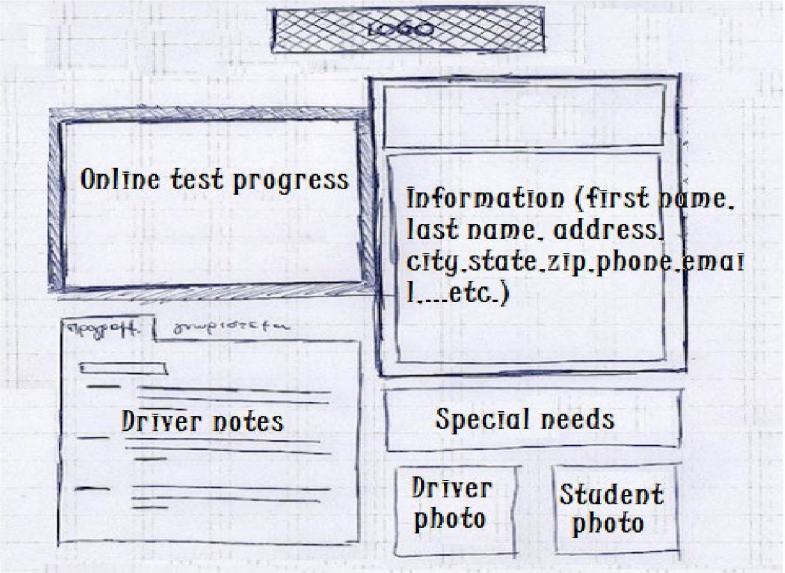
User Interface

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 provided what they would like the interface's appearance to be. It is laid in a grid-like orientation.



- Each user has a slightly different interface.
    - Students will be more like the interface DriverPass provided. They should be able to edit their profile information.
        - A scheduling tab will need to be included so they can select when to drive.
    - Driving instructors will also be like the above graphic but they will need an option to edit driver notes and their profile information.
        - Their scheduling tab will allow them to set their available hours.
    - Admins will be less "pretty" and more "minimalistic" It would have a search feature to find students and instructors' profiles and would have the ability to view and edit them.

      There would be buttons that could view and download logs.

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?

- I am assuming that all users have access to the internet through a personal device. I suppose that in the case that isn't possible, they should be able to call DriverPass and have them set up

an account for the driving instruction. However, in this case, they would not have access to all the other tools like the learning modules and practice tests.

- I am assuming that DriverPass has the resources to locally host their site and as many users as required at one time, or the budget to host a cloud-based site.

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?

- This is a lot of features to add in the short time (eight weeks) we have for development.
- There are a lot of devices and screen sizes to account for, it would take a lot of testing to ensure that the UI looks correct for a myriad of devices.
- I have not accounted for any sort of chat feature between students, instructors, or admins (customer service). All communication will need to be handled by a third party or over the phone. In the case of a third party, a link to open that service would be recommended.

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.