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?

- Capitalize on unmet market need
- Provide quality training for new drivers
- Reduce driving test failure rates
- Update instruction based on DMV requirements

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?

- Provide online classes and practice tests
- Provide on-the-road training
- Allow customer to select training packages
- Access data online from any computer/mobile device
- Assign rights and roles to system users
- Make customer reservations online or via phone and include day and time
- Track reservation details and generate activity reports
- Identify driver that is scheduled with customer
- Connect with DMV and notify when there is a policy update
- Website with
    - LOGO
    - Online Test Progress
    - User Information (first/last, address, city, state, zip, phone, email, etc)
    - Driver Notes
    - Special Needs
    - Driver Photo
    - Student Photo

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 needs to be platform agnostic and intuitive to use
- System needs to generate activity reports that are available for download (admin role)
- System needs to have multiple role types with varied permissions for customers and employees
- System needs to show what driver is assigned to which customer and track availability
- System needs to offer multiple priced packages
- System needs to monitor DMV for updated policy/regulation and notify DriverPass
- System needs to register new users from employee role and store in database
    - First/Last
    - Address
    - Phone
    - State
    - CC Details
- System needs to show online class/test progress by pulling it from student database
    - Test name
    - Time taken
    - Score
    - Status (not taken, in progress, failed, or passed)
- System needs to match available driver with student for scheduled time and display on website
    - Pull availability from user/driver database and generate open time slots for signup
- System needs to be a cloud based web app

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 be web-based platform-agnostic cloud app
    - iOS
    - Android
    - Web (Chrome/Firefox/Safari/Edge)
- System needs to background refresh and pull latest updates - push from server?
- System should be updated when:
    - DMV policy changes
    - Security Updates
    - UI Updates
    - Bug Fixes

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?

- All functions should be platform agnostic, we can containerize a java & html web app with apache cordova and ship it to iOS and Android store as well as run it as a website.
- Backend will require multiple user databases, best to keep them separate and sanitized.
    - Customer
    - Driver
    - Employee
    - Admin

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?

- System will use email address for login, and initial password will be required to be reset on first login
- ALL USER INPUT WILL BE VALIDATED
- User input will be case sensitive for security
- Lockout too-frequent sign-in requests
    - notify user
    - notify admin

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?

- Changes to types of user database fields will require a Developer
- Adding/Deleting users will be available to appropriate roles
- System will rely on platform agnostic technology like apache cordova/react native
    - This will minimize the need for maintaining multiple code bases
    - Updates can be easily rolled out to all platforms via app stores
    - Server updates will be scheduled overnight on lowest projected traffic days
- IT Admin Requires
    - Access to Activity Reports
    - Database Download
    - User account management (add/delete/modify)

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 requires email address and auto generated first password for initial login
- User will be required to make a password on initial login
- Server connection to client via HTTP over TLS, encrypted traffic
- User accounts will lockout after multiple incorrect login attempts in a short timespan
    - Lockout will generate report to Admin
    - Lockout will notify User email and provide instructions for recovery
- User will be able to reset password
    - via one time use password sent to recovery email
    - via support call and identity verification

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 push data updates to relevant user sessions if changes are made
- The system shall generate activity reports for download
- The system shall have multiple user roles
- The system shall display user information
- The system shall show class and online test details
- The system shall allow users to schedule driving hours
- The system shall have databases for each user type
- The system shall accept payment information
- The system shall generate driver availability from database
- The system shall allow for password recovery
- The system shall notify users and admin when password is locked out
- The system shall allow information entry on all platforms
- The system shall register new users

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 user interface will display
    - LOGO
    - Online Test Progress
    - User Information (first/last, address, city, state, zip, phone, email, etc)
    - Driver Notes
    - Special Needs
    - Driver Photo

    - Student Photo
- The users are customers, drivers, employees, and admin
- Customers will need to see their information, progress, notes, driver photo, purchase a package selection, schedule appointments, etc
- Drivers will need to be able to enter availability, see their assigned customer/student. enter notes for them
- Employees will need to register new users and manage users
- Admin will need to do all of the Driver and Employee roles, as well as generate activity reports and see traffic information.
- Users will use touchscreen for mobile app
- Users will use mouse and keyboard for desktop website

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?

- Assumption based on user capability to easily navigate a modern web-page
- Assumption based on user capability to easily navigate a smartphone application
- Assumption that users have an email address

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?

- Limitation based on popular device screen real estate
    - Smartphone app will need to conform to multiple screen sizes
    - Desktop website will need to conform to multiple screen sizes as well
- Time allocated does not necessarily have flexibility for edge cases and unexpected errors
- Budget is limited, and feature creep needs to be avoided unless contract can be renegotiated
- Technology wise, cloud resources can be expensive so we should design for the lowest possible footprint.

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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.