SNHU

5-2 Project One: Business Requirement Document

Jonathan Sussan

Mohammad S. Habibi, Ph.D.

### CS 255 System Analysis and Design

### 02/01/2022

# CS 255 Business Requirements Document Template

## 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 purpose of this project is to create a new system for DriverPass to take advantage of a void in the market when it comes to training students for DMV driving tests.
* The client is DriverPass which is owned by Liam. Ian is the information technology officer for DriverPass. Aside from owner and IT, users will also include admin and customers.
* DriverPass wants to improve driver training because many people fail their DMV driving tests. The system should include an input form to take customer data as well as make and confirm driving lesson appointments.

### 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?*

* The system should track all admin and customer activities. Liam would like to be able to print a report of all this activity.
* The system should allow customers to create a profile that will keep track of all their information and activities.
* Customers should be able to choose between three packages and book appointments by phone or over the internet.
* Customers that choose the appropriate package should be able to take DMV practice tests online.
* Liam has provided us a design of what he would like the user interface to look like.
* DriverPass would like the system to run over the cloud as they do not wish to deal with backup and security.
* The problem that DriverPass wants to fix is to help improve their customers’ ability to pass DMV tests.

### 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?*

* When completed, the system should be able to let DriverPass or an online customer create a user profile.
* A customer will be able to choose between three packages to schedule two-hour driving appointments.
* The system should help customers keep track of their status, such as appointment reminders, status on practice tests, payments due, or new DMW law changes.
* Measurable tasks that need to be included in the system design to achieve this include the following:
* DriverPass staff or customers need to be able to successfully create user profiles.
* Reservations for driving training can be placed either over the phone or online directly through the user profile. Reminder alerts should be sent out to both customers and trainers.
* Easy communication between staff and customers, with all details being logged with printable reports.
* Owner would like to be able to enable or disable and packages that DriverPass is offering.

## Requirements

### Nonfunctional Requirements

#### 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 shall run on a web-based cloud environment.
* As to avoid duplicate entries, the system shall not run offline. Liam originally wanted to be able to use the system offline as well, but Sam explained to him that there will be issues.
* At this moment, the system does not require an application to run. An application may be considered by Liam as the company scales.
* The system shall run quickly because it will run on a web-based environment.
* System updates should occur frequently, every 4 hours. This way if there is an update from the DMV, the system will capture it and update.

#### 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 system shall be able to run on all platforms, such as Linux, Mac, Windows, and mobile.
* The back end will require tools for the system to support this application such as customer service and account maintenance.
* The back end will require a database to support this application. The database shall be stored on a cloud service and include DriverPass data, DMV data, and customer data.

#### 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?*

* The system shall distinguish between different users based on user type. There shall be two user types: admin and customer.
* Each user shall require authentication.
* Admin user shall have three levels of authorization: Owner, IT, and reception.
* Admin owner shall have highest level of authorization and be able to view and print reports.
* Admin IT shall have authorization to necessary sections that will allow them to maintain and update the system.
* Admin reception shall have the lowest amount of authorization of the admin group. Only what is necessary to maintain and manage customer service.
* Input shall be case-sensitive for passwords.
* Input shall not be case-sensitive. The system shall validate data regardless of case, and convert data into capital first letter, lower-case the rest.
* The system shall inform the admin of a problem in the following situations: A user creates a reservation; A user modifies a reservation; A user cancels a reservation; A user makes an inquiry; A user cannot access their account or forgets password.

#### 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?*

* Code does not need to be changed for a user to make changes.
* Customer user shall be able to add, remove, or modify reservations or their account information.
* If customer needs assistance, admin user reception shall have access to add, remove, or modify reservations for customer or their account information with exception to passwords.
* The system shall adapt to platform updates automatically as functionality remains the same. Code may need to change if there is a major system update.
* Admin IT user shall have authorization to necessary sections that will allow them to maintain and update the system. Admin IT may be required to perform security activities such as software or operating system patching and updates, as well as monitoring for unusual activity.

#### 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 is required to have an account, and authenticate their username and password to log in.
* The connection or data exchange between the client and server will be secured using industry standard secure socket layer (SSL).
* If a “brute force” hacking attempt is detected, the system shall lock out accounts after a defined number of incorrect password attempts. The account lockout shall last a duration of one hour on the first lockout. If a second lockout occurs, the lockout duration shall last 24 hours. If a third lockout occurs, the lockout duration shall remain locked until manually unlocked by an admin.
* If a user forgets their password, the user shall be able to reset their password using two step authentications. Once the system verifies authentication is correct, the system shall instruct the user to provide a new 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 allow a user to create and manage an account.
* The system shall validate user credentials when logging in.
* The system shall allow a user to access educational material and practice tests.
* The system shall allow a user to create, modify, or cancel a reservation.
* The system shall offer the user three driving packages.
* The system shall allow the user to view which drivers/cars are available to schedule a reservation with.
* The system shall allow a user to securely pay for a reservation.
* The system shall remove availability of a time/driver/car when a reservation is made.
* The system shall alert admin and customer users when a reservation is made, along with reservation reminders at certain time intervals.
* The system shall push reports to admin owner user.
* The system shall have an API connection to the DMV and update at 4-hour time intervals to update the database if there are any DMV updates.
* The system shall allow admin IT user access to maintain and update the system.
* The system shall maintain the database for all data.

### 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.)?*

* Liam, the owner, has sketched out a design of what he wants the UI to look like.
* The online test progress shall show current progress as well as completed tests and history. Used by customer users.
* The driver notes shall show lesson time, start hour, end hour, and driver comments. Used by both customer and admin users.
* The information section shall show student information such as name, address, contact details, billing information, et cetera. Used by both customer and admin users.
* The UI shall show image of customer and driver. Used by both customer and admin users.
* Special needs section.
* There shall be a contact section as a way for customer or admin to communicate. Used by both customer and admin users.

### 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 a high-speed internet connection available when accessing the system.
* DriverPass has setup a merchant account that can access the system via API.
* Cloud service used will have a 99.9% uptime, as well as adequate security.
* DriverPass admin IT user will continue to maintain and update the system as necessary.
* DriverPass will not attempt to modify the source code on their own.

### 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?*

* There are limitations in creating new driving packages. DriverPass will have the ability to enable/disable the three current ones but will be able to create new ones.
* Resources are limited as DriverPass currently employs 10 driver/cars and one secretary. This can limit the amount of reservations customer can make.
* Time is not a limitation in this case unless there are more than usual programming errors.
* Budget should not be a limitation unless we find a major security flaw or client wants to make major changes during the SDLC.
* Technology limitations include optimizing for both desktop and mobile performance. Different browsers, screen sizes, and operating platforms.

### 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.*

Chart, waterfall chart

Description automatically generated