# CS 255 Business Requirements Document Template

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**Project 1**

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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?*

* **Client:** DriverPass
* **Owner:** Liam
* **Purpose:** To provide customers with better driver training and tests opportunity as well as to provide on-the-road training.
* **System:** Web and mobile interface allowing employees to access data offline

### 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?*

* **Requirements:**
  + Provide driving online classes and practice tests.
  + On-the-road training scheduling option (date; time)
    - Include cancel, reschedule, and modify options accessible to customer online.
    - Customer information, driver availability, schedule input option accessible to employees and customers
  + Data accessibility online from anywhere (computer and mobile devices)
  + Download availability for reports and information only accessible to Liam
  + Handle multiple packages
* **Problem**: DMV test failure by many people.

### 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?*

* **Upon completion the system should:**
  + Be able to be accessed online and off-line.
  + Drivers notes, comments, training, upcoming scheduled on the road training should be seen.
  + Client should be able to track and see which driver is matched with what consumer.
    - Time, date, and car should be seen as well.
  + Active data tracking with format regarding online tests.
    - Name
    - Test
    - Date and Time
    - Score
    - Status (Pass, Failed, In Progress or Not Taken)
  + Allow customers to chose packages.
    - Modifying option available or cancellation option

## 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?*

* DriverPass will be a web-based application.
* Application will need storage for database and user- uploaded photos.
* Regular updates, including new practice exam questions and on-the-road training modules, should be implemented quarterly to keep the content relevant and engaging.
* The system should provide fast responses.

#### 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?*

* Since the system will be web based, It should work on all systems (Windows, MAC, Linux,etc.)
* Browser development should be considered for Edge, Chrome, Safari and FireFox.

#### 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?*

* All accounts should be password protected.
* Username and Passwords should be used for authentication.
* System users should be assigned roles. Highlighting their authorization levels and access to system resources.
* Input should be case sensitive for greater security.
* Lock-out after incorrect password attempts

#### 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?*

* Users within the system are granted the ability to create and add accounts, a functionality applicable to both customers and DriverPass staff.
* The system facilitates the modification of account information, such as contact details, by users through form submissions and POST requests. The underlying system code is designed to support this feature seamlessly.
* Users also have the capability to delete or remove their accounts as needed.
* Browser updates, often a routine for users, generally do not impact the backend code. However, in instances where client updates affect the underlying system behavior, patches and updates will be promptly applied.
* System application updates, encompassing both frontend and backend layers, along with the database, will be conducted upon the completion of features or bug fixes in accordance with agile scrum development practices. These updates will specifically occur during off-peak usage hours to minimize any potential negative impacts on the application.
* The agile development approach ensures that smaller changes can be implemented more frequently, presenting lower regression risk compared to larger, major application overhauls.
* The IT admin is granted full access to accounts, enabling tasks such as updating passwords or revoking access for former employees.

#### 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?*

* To access the system, the user must utilize username and passwords for identification.
* Network requests within the system will exclusively utilize HTTPS, ensuring secure communication between client devices and the back-end application.
* Sign in form submissions will strictly employ HTTPS post request, preventing the transmission of sensitive data through the URL of the request.
* Cryptography will be integrated into the systems to encrypt any sensitive data transmission across networks and handling overall data security.
* A security measure will be placed to lock in account after a specified number of incorrect signing attempts preferably 5, effectively flooring brute force hacking attempts. In the event of a locked account and automatic notification will be sent to IT admin. Who can subsequentially inform the user of the necessary stuff to update their password and unlock their account.
* Password reset requests our user initiated and involvement matching of piece of identified user account information, such as an e-mail address. A password reset link will be sent and forwarded to the provided email address.

### 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 mandates user on the dictation and authorization, the substantiating the validation of user credentials during the login process. Authorization levels, dictating access, are contingent on the account type.
* The system shall be web-based. Instructional material may be accessed offline by downloading but data can only be updated/modified (reservations, password resets, etc.) online.
* The system shall track user activities, indicating which user made a reservation cancel the reservation and last modified it.
* Initially, the system will list 3 driver pass cores packages type, with the flexibility to disable individual packages. Future development may introduce new packages as additional features.
* During account registration, the system will capture customer details, including first name, last name, address, phone number, state and credit card information.
* Password reset functionality is incorporated into the system, allowing users to reset their passwords as needed.
* The system is equipped to provide instructional material compliant with current DMV guidelines.
* User exam progress and grades are displayed within the system.
* The system facilitates instructor feedback to students.
* Users have the capability to add, modify or delete exams and instructional material.
* Users can be contacted by instructors, secretaries or administrators throughout the system..

### 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 will include the following pages;
  + Home page
  + account registration page
  + course material access page
  + driving lesson reservation page
  + student info page
    - Include sections for test progress contact form, driver notes, etc.
    - The test progress section includes test name, test time, score, and status.
      * Status is either not taken in progress failed or pass.
    - The Driver notes section contains a table with lesson time, start and end hours, and driver comments fields.
  + DriverPass contact page
  + The interface users and system access levels are shown below:
    - DriverPass owner – full access to accounts, update passwords.
    - DriverPass information technology officer – full access to accounts, update passwords.
    - DriverPass secretary – access to schedule, cancel and modify appointments.
    - Customers/students – access to create an account, access to learning material, as well as access to schedule, cancel and modify appointments.
    - The system is web-based, so the interface interaction will occur through browsers, whether mobile, tablet, or desktop. Currently, there are no plans for native device app versions of DriverPass (Android, iOS).

### 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?*

* The system can communicate and update information like student progress and driving lesson schedules 24/7 because the Internet is always available.
* We assume that the rules from the DMV (Department of Motor Vehicles) are regularly updated and easily accessible for everyone.
* Because many people use phone apps, we might make our own apps for DriverPass on both iPhones and Androids soon.
* To use DriverPass, people need a working device that can connect to the Internet. The device should have an operating system and browser that meet our system requirements.
* Most of our customers are likely to be younger and comfortable with technology. So, we expect more people to use our website rather than coming to our office or calling us.

### 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?*

* Since this system operates on the internet; it needs a network connection. Without it, users can't add, update, or delete data, and you can't access study materials or practice exams unless online. These materials may be downloadable for offline use, though.
* Obviously, the DriverPass system and the devices using it need electricity.
* Buying physical hardware, like servers, can cost a lot initially. I suggest using a cloud-based system instead. This way, we spend less money upfront, and we only pay for the services we use. This not only saves money but also gets the system up and running faster since we don't have to deal with buying and maintaining hardware.
* Our budget and time constraints will decide how many people work on this project and whether we need to hire outside help.
* The skills of our current team could affect our budget and timeline. If they aren't familiar with the technology needed for the web interface and cloud-based system, they might need extra training.
* The DriverPass instructional material relies on current DMV guidelines. This means that if the guidelines change, it might take some time to update our materials.

### 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.*

*A screenshot of a graph

Description automatically generated*