# 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?*

* Design a system that provides students with access to online practice exams and practical training to enhance preparedness for driving tests. This system shall allow the client, DriverPass, to provide these services to their target audience.

### 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?*

* DriverPass identified an issue with under-preparedness among students taking written and practical driver’s exams. Many students struggle to obtain a sufficient level of competency to safely and successfully meet the state’s minimum requirements to obtain a driver's license. The client intends to provide online practice exams and on the road training to increase driver expertise prior to the official exam, thus, improving outcomes for students.

### 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?*

* Develop a user-friendly and intuitive online platform that provides students access to practice written driver’s exams.
* Implement and maintain a database of practice exam questions covering a broad knowledge base of driving scenarios and topics.
* Create a system to evaluate student performance on practice questions and provide feedback on areas for improvement.
* Build on-line progress tracking and performance history.
* Provide efficient online scheduling and management of on-the-road training sessions facilitated by local professional driving instructors.
* Maintain a database of driving instructors, including their credentials and availability.
* Generate student performance reports with input from instructors.
* Develop system security protocols to ensure data privacy and protect users’ personal information.

## 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 system shall operate in a web-based cloud environment.
* The system load times shall average 1-2 seconds.
  + Load times over the average shall request user feedback.
* The system shall be updated once per month or as needed.

#### 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 run on both computer and mobile platforms including but not limited to:
  + Google Chrome
  + Microsoft Edge/ Internet Explorer
  + Mozilla Firefox
  + Apple Safari
* The system’s back end shall include:
  + A database of user information
  + A database of system information
  + A web server to process and manage requests.

#### 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 utilize separate login pages to distinguish between customers, instructors, and administrators.
* The system shall require user login information to be unique using the following features:
  + User password to include at least one special character and one number.
  + Case sensitive password to include at least one capital and one lower case letter.
  + Unique usernames for each user

#### 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?*

* The system shall be platform independent:
  + Maintainability shall not be subject to platform updates.
  + Usability shall be uniform across all platforms.
  + Scalability shall be facilitated for future system updates across all platforms.
* The system shall provide admin access to the database and web server to modify and maintain product features as needed.

#### 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 system shall require a unique password with a minimum of 8 characters including at least one capital letter, one lowercase letter, one number, and one special character.
* The system shall require two-factor authentication to secure data exchange.
* The system shall hide password characters in text display.
* The system shall encrypt user and password information to secure data exchange.
* The system shall lock out users after five attempts with incorrect user or password information.
  + Shall notify administrators when a user has been locked out of the system.
  + Shall provide a means of two-factor authenticated recovery for users locked out of the system.

### 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 provide a means for users to create an account and store the user’s credentials.
* The system shall be accessible online through a cloud server.
* The system shall validate the user’s credentials when logging in.
  + The system shall distinguish between admin, instructor, and customer based upon the user’s credentials.
  + The system shall provide a means for users to reset their password.
  + After 5 failed login attempts:
    - Users shall be locked out of the system.
    - Administrators shall be notified.
* The system shall provide customers with three subscription packages to choose from.
  + Customers shall be able to select a single subscription package to purchase.
  + Administrators shall be able to disable packages that are full.
* The system shall match customers with driving instructors.
  + The system shall track which customers are assigned to which instructor.
  + The system shall assign practical instruction times upon customer request based on instructor and vehicle availability.
  + The system shall display the assigned instructor’s public information and identification photograph for customer safety.
  + The system shall display the customer’s public information, contact information, and identification photograph to the assigned instructor for customer accountability.
  + The system shall display lesson location, duration, start time, and end time for each practical instruction session.
  + The system shall provide customers with access to their assigned instructor’s assessments and feedback for each practical instruction session.
* The system shall provide customers with access to online learning tools.
  + The system shall connect with the DMV database to be updated according to the latest information.
  + The system shall track customer status and test progress.

### 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.)?*

* Customer:
  + Pre-registration package information landing page.
  + Login/Registration page.
  + Home page
    - Online Learning Tools
    - Practical instruction scheduling request link.
  + Scheduling page:
    - Instructor information
    - Calendar
    - Selectable available instruction times
    - Non-selectable unavailable instruction times
  + Test progress page:
    - In-progress test completion percentage
    - Completed test scores.
    - Completed test Pass/Fail information.
  + User information page:
    - Public:
      * Identification photograph
      * Name
      * DOB
    - Private:
      * Purchased subscription package.
      * Contact information (phone, address, etc.)
      * Payment method information
      * Update user information option
* Instructor:
  + Scheduling page:
    - Customer public and contact information.
    - Calendar with assigned instruction times.
      * Ability to edit scheduled instruction times and availability.
  + Identification page:
    - Public:
      * Identification Photo
      * Instructor Name
      * Instructor license number
    - Private:
      * DOB, Address, other relevant instructor information.
      * Update Instructor information option
* Administrator:
  + Registered customers’ public, contact, and subscription package selection information.
  + Option to remove full subscription packages from the available package list.
  + Scheduling information for all users and instructors.
  + Ability to restrict access to any existing customer or instructor.
  + Printable Events Log:
    - Practical instruction scheduled/modified/cancelled event.
    - Password lockout event.
    - User password reset request event.
    - User restriction event.
    - DMV updates event.

### 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?*

* All users shall have internet connectivity.
* All users shall have the skills necessary to navigate a website.
* Customers and instructors shall attend lessons at the scheduled time.
* Vehicles shall be properly maintained and in good working order.
* No traffic stops, vehicle collisions, or other obstructions shall impede lesson completion.

### 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?*

* The 10 cars in the DriverPass fleet shall be maintained and operable, which means that some vehicles may be unavailable at times.
* Internet connectivity may delay information updates.
* The number of user subscriptions is limited by fleet and instructor availability.
* The DriverPass budget necessitates all requirements to be completed within the scheduled time frame.
* Customer disability may require accommodations beyond the capabilities of DriverPass’s fleet of vehicles.

### 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 colorful rectangular object with text

Description automatically generated with medium confidence