# 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?*

* DriverPass seeks to create a system to aid in preparing students for the Drivers education test at the DMV.
* Due to a noticeably lower pass rate, DriverPass seeks to create an application to aid the everyday student with passing their drivers test and giving them on the road experience.

### 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?*

* Needs an online and offline portal
* The ability to take online classes for driving skills and requirements.
* Editable information while online, and monitorable data while offline.
* Administrator, operator, and staff accounts to operate different functions of the project.
* Reservation system for customers with information tracking.
  + Who made the reservation?
  + Who cancelled a reservation?
  + Who modified a reservation?
  + Time of reservation?
  + Date of reservation?
  + Ability to modify a reservations time frame.
  + Online capabilities:
    - Book a reservation.
    - Change password
    - Change user information.
  + Offline capabilities:
    - Monitor and check appointments.
* Reservation tracker for operators and administrators.
  + Ability to print operations reports.
  + Ability to print modification logs.
  + Identify and modify which driver is with which student.
  + Identify and modify which cars are in use.
  + Identify and modify which who is assigned to what car during what session?
* Modularity of package choice decision making for the customers on the program.
* Ability of operator and Administrator to disable and add package choices.
* Registration system for registering a customer to a time slot (staff).
  + Customer first and last name.
  + Customer address.
  + Customer phone number.
  + Customer State.
  + Customer Pick-up and Drop-off locations.
    - Should be the same locations according to DriverPass.
  + Customer credit card information:
    - Card number
    - Exp. Date
    - CVV
* Updating system that checks for new regulations, rules within the DMV, and populates those to the program.
* Cloud based web interface with SAAS.
* Custom updatable user interface based on the sketch with:
  + Section for online test progress.
    - Tests completed
    - Tests in progress
    - Tests not taken.
    - Formatted:
      * Test name – Time Taken – Score – Status.
      * Status can be:
        + Not taken
        + In Progress
        + Failed
        + passed
  + User information.
  + Driver notes:
    - Comments the driver had
    - Time of lesson
    - Formatted:
      * Lesson time – Start Hour – End hour – Driver comments
  + Special needs
  + Driver Photo
  + Student Photo
  + Contact the company page.
  + Student contact page.

### 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 of project, the application should:
  + House and store user information and credentials and be able to output them when requested by the user and admin.
  + Display available drive times offline and online.
  + House, create, and edit reservations for the online booking system.
  + Display testing and information in the form of a display that is coherent and consistent with the testing required of the DMV.
  + Display and update student information about tests regarding the DMV and the student's status.
  + Ability to modify and submit changes to driving packages selected.
  + Ability to submit payment and other forms of confidential information.
  + Have a custom display that acts as a hub for student information.
  + Have a custom display that act as an operator, staff, or admin-based editing application.

## 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.*

* Ability to securely load and maintain static or transitory information in a customers account.
* Ability to download user data.
* Updated information must populate immediately.
* System must be able to handle a plethora of customers.
* Application mobility for users on mobile versions.
* Access and mobility for teachers to assign work and material, for students.
* Access for students to open and submit assignments for grading.
* Students’ assignments are automatically graded post submission.
* The system will push all new notifications to users.
* Work will be completable and submissible with internet connection only.
* The system will update web-based information daily to ensure authenticity of instruction against DMV requirements.
* The system will maintain a minimal local storage policy with application for offline use stored on the system and all other information stored in cloud based servers.

#### 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 will need to run in three major environments:
  + Online Web Application.
  + Offline user Application.
  + Mobile application.
* The system should be as fast as the internet connection in the case of the online mobile or web-based applications. In terms of the Offline application or the mobile application while offline, the system should be able to process as fast as the users device will allow.
* The system should check for updates daily based on connection to the internet to ensure that the system is utilizing the most recent version of the UI as well as ensuring that data is kept in a secure state. The information represented within the website will also be updated daily based on the requirement of the DMV.

#### 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 platform needs to be able to run on all major platforms for the sake of ease of access for the customers. Additionally, the platform will require a cloud-based storage solution to maintain the data from the website and all user information. We would also recommend utilizing a managed CAS for the security and protection of the data stored.

#### 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?*

* Distinguishing users will come in the sense of two major ways. Users will be required to make an account and utilize individualized credentials in order to log in to said account. Additionally, the server will record session and cookie information during each user’s login so it maintains a current record of who has visited the website and what was done. The credentials for username will not be case-sensitive, but the password will be case sensitive, as well as utilize two factor authentication for added support and security. Admin should be alerted after the third attempt on confidential information from any source. This ensures there is time to act swiftly or counteract any potential attacks occurring.

#### 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 the amount, of users as well as credentials of the users is able to be modified without changing the code base. User information will be stored in an encrypted cloud server where it can be accessed from the web-based application portal. The system will also be refreshed and refactored in adjustment to platform updates, so that information security is maintained. From the UI after logging in, users will be able to make modifications to their credentials and account information. This type of access would require IT to have open access to user credentials as well as confidential information. In the case that IT needs to lock an account or modify a user’s information based on the request of the user, IT needs to have access to all user information so that they may validate and modify it.

#### 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?*

* For user to log in, they are required to utilize a two-factor authenticator and a case-sensitive password in addition to their custom, personally created username. In order to secure information in transit, all data will be transmitted across a SHA-256 encryption key so that without decryption key, information remains intact and unexposed. In the case of a “Brute Force” attack, after three attempts on the account, a temporary lock should be placed on the account until customer service is contacted to validate, unlock, and adjust the accounts credentials. In the case of a forgotten password, the user will be able to traverse one of two avenues. The user will be able to either contact customer service to validate information and then make adjustments as needed to the credentials, or the user may click a “forgot password” link in the login page. This effectively functions in the same way as the contact to customer service in that the user will receive a password reset link where they must validate information with the authenticator, as well as security information, in order to change any credentials. The customer has also requested security as a service.

### 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 credentials of all users when logging in.
* The system shall store and open user information upon request.
* The system shall be accessible and editable while the user is online.
* The system shall be accessible while the user is offline.
* The system shall be accessible from mobile and stationary devices.
* The system shall have complete open access to the owner.
* The system shall have the capacity to establish portals for dialog.
* The system shall have the ability to house all course materials including grades.
* The system shall be able to cycle through multiple courses in the same UI.
* The system shall be able to house historical interactions of users.
* The system shall be able to update daily to check for new versions of UI from the developers.

### 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 UI needs to have several facets to it based on the type of user that Is accessing it. The driver pass UI must start with a login screen to differentiate who is using it, and then validate the user. In terms of the End-user utilizing this software, after login, the end user is brought to a home screen where they are able to visualize multiple parts of their account such as their current online test progress, information about themselves that is pertinent to scheduling and utilizing the online appointment maker, an area to input or change credit information, notes about how they have done on past lessons, any special needs the customer has, and a photo of the driver who will be teaching the lesson upcoming and the student. Additionally, the UI will need to have an option to schedule appointments and lessons as well as modify or cancel existing lessons. The users will also need a tab to check on tests not taken, tests already completed, and any additional work they will need to complete or review. The end-user interface will be available on both stationary browser and mobile browser, with similar designs and configurations between the two. Additionally, there will need to be a downloadable platform that utilizes stored memory in order to maintain an offline program for the customer to use.
* The other major user that we have is the Admin. The admin portal will look the same to login to but once validated and logged in, the admin will have access to looking up and editing end-user information pertaining, but not limited to, credentials, credit information, account information, scheduling, and all other facets of the users’ experience. The admin will also have notifications pushed to them about any current requests and updates pending to the service. The UI for the Admin will be completely available on a stationary browser but partially available on the mobile browser. The admin will have limited mobility on the mobile browser based on functionality purposes and ease of access.

### 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?*

* We assume that the users experience will be enjoyable, comfortable, and complete so long as there is internet connection. We also assume that any user who has internet connection will be able to perform the actions needed to maintain their account so long as there is internet connection available.

### 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?*

* In terms of limitations we have noticed, considering we are a web-based application, there is a large mobility issue with porting data from a web-based location to an application for the offline program. This also creates a situation where we need to ensure that information gets updated in the background any time there is an internet connection. Additionally, in order for customers to work through material they must have an internet connection. This creates a limitation in the sense that without internet connection, the program is effectively unusable in terms of progression. Overall, the time frame is well laid out with ample time to adequately adjust and make modifications as necessary. In terms of budget, although not specified, it is important to note that several ongoing services are included in this plan which create recurring payments.

### 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.*

Timeline

Description automatically generated