# 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?*

* The client DriverPass wants to be able to offer an online user interface that allows its customers to be able to take online courses and practice exams. The client also wants the customers to be able to schedule road tests with their drivers.

### 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 client has designed this service to fix a problem in their perceived lack of driver's education training due to the high number of failed tests at the DMV. DriverPass wants to offer three packages to choose from and their staff to have access to aspects of the system within their job scope. It is important to the client to be able to remotely access the data as well to make any necessary modifications. Tracking is also requested to make sure they know what user is paired with what driver for the two-hour session.

### 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?*

* Once completed the system should be able to allow registered users to take online classes and practice tests. The customer will be able to schedule on-the-road training. It will allow for remote access to the data online from any computer or mobile device with full access to reports and other information through spreadsheet programming. The owner will have full access to all accounts, both client and staff, through username and password restriction. Full access will allow password access, remove users from the system, and reservation tracking. Three user roles will be created at the start. The users are the owner, technician to modify the system, and the secretary to input user information.
* In addition, the program will have users choose from three packages to make reservations for driving lessons. The registered user can do this online picking the designated day and time convenient for them. An onsite staff member will also be able to input the information if the client calls with their first name, last name, address, phone number, state, their credit card number, expiration date, security code, and the location they would like to be picked up from.
* Driver tracking will be enabled to see which user is matched up with a driver and the vehicle. The system will pair a user with one of ten drivers. Package one will be three separate sessions of two hours a day in a car with a driver. Package two will be four sessions with a driver and an in-person lesson to go over rules and policies. Package three will be spread over six sessions, an in-person lesson for rules and policies, and an online class with all the content, material, and practice tests.
* The system needs direct access to DMV rules and policies to be able to update if they change as well as reformulate practice questions based on the new material. In addition, users will be able to modify their registrations if they need to, see their progress and data on the test, time, score, and status for online tests. The online system will allow a contact page that sends questions to the designated staff to be able to further assist their online users as well.

## 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?*

* Reviewing the transcript details a web-based environment. The system should be readily available for anyone accessing the interface remotely. The actors in the use case would all need to login and often would do so simultaneously. This web-based environment would utilize cloud based storage for quick manipulation of database information. All of this process could also be facilitated into an application environment to allow ease of use and access for everyone with a portable device. This would be most advantageous for the administrators that need to access information immediately to make changes to appointments or for the owner to remove access of users for security purposes. This system should also be updated automatically through network capability to be the best version it can be at all points of time.

#### 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 should be able to run on multiple platforms as it will need to be accessible across numerous devices. Traditional coding could be done on Windows to program the application, but everything being run through a cloud based system would be the most efficient methodology for the system. As it will be run through cloud it would need minimal tools, but it would need database access that stores all client and driver information as well as the secure login username and password validation information.

#### 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?*

* For distinguishing between the different users, the most important part of the process would be creating a user name and password designated by the client during a signup form. This form would be accessible in a mobile or web based environment for desktop access. This input would be required to be case sensitive and would also need a validation system to ensure that more than one person could not create the same user name and also to verify a password meets requirements to ensure secure creation. In todays avenue of security its incredibly important to offer a method of multi factor authentication. This could be something as simple as sending a text message to the clients device to ensure that no one other than them is able to access their profile. Certain people in the administration should have access to clients information but all of that security would be access based through their job role and coded as such. The owner would have a hierarchy over the other users that would allow them to alter profiles and delete users as necessary. The system should inform the administrator of a problem if there is network access errors or unauthorized attempts at access. The administrator must be aware of all problems that could prevent clients from registering or modifying their information. The mainframe must always be easily accessible for the client.

#### 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?*

* As part of the initial build process the owner requested the ability to be able to modify users. This ability would be already programmed into the system, so yes originally this would need to be built into the code, but based on the system then allowing administration to access the database information, no further alteration of code would be required. To adapt to platform updates the system would need an automatic update system, unless requested for manual updates, but having it act behind the curtain would allow the IT administrator to focus more on bigger problems that could affect the system and its accessibility. The IT administrator would need all access minus the ability to modify or delete administrative users. This permission should be isolated to only the owner. The IT administrator based on their role needs to make sure that all aspects of the system are running proficiently, so they must be able to do everything everyone else on the network can as well as code access to be able to manipulate the system as necessary to add more functionality or edit existing code to make it more proficient based on the businesses needs.

#### 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?*

* A user to be able to login would either need to create a user name and password with an associated email address and phone number or would need to reach out to the secretary to create a profile. After the creation process is done they would then enter the case sensitive information into their application or web portal through browser access. Initializing the multi factor authentication would send the user a text to their device or an email with a security code which would be required into the login within a defined set amount of time. Then all of their information would be accessible. This methodology would also ensure a secure connection between the client and the server. It ensures that the user attempting to access the profile is the one who had created it to begin with.
* If there is a “Brute Force” hacking attempt the account should send on the back end a notification to the IT administrator as well as the owner simultaneously that a hack attempt was encountered. Then through remote access the IT administrator would be able to block the access attempt based on mac address and ip address correlation. The notification would go to the owner for awareness of the situation but should fall under the scope of IT. If the user has forgotten their password as part of the multi factor authentication process it would send a code to the designated clients device and after verification would redirect the user to update their password. An additional safeguard could also exist to make the user verify answers to security questions prior to sending the authentication code.

### 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 run fast and efficiently
* The system shall prompt the user for username and password
* The system shall validate user credentials before allowing access to the system
* The system shall allow access to only designated role information
* The system shall allow clients to signup for courses and driving schedule
* The system shall provide practice tests for clients
* The system shall track client progress
* The system shall track driver registration with associated vehicles
* The system shall allow administrators to modify user information and registrations
* The system shall allow remote access to clients and administrators

### 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 needs to be able to allow login from any web based system or designated application on a list of applicable devices. Computers no matter platform should be able to access through their browser, mobile devices through browser or by installing the created application. The user needs to be able to make changes through a simple click environment that leads them through hyperlinks to their profiles, course lists, practice tests, and driving schedule registration. The different users for this interface would need to be the students who want to learn the information, drivers to be able to schedule, and administrators who can deep level modify accounts as well as make changes to curriculum and anything else required by the system.

### 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 assumptions being made in the design is that the users will have devices that can access the information. Another assumption regarding technology is that the administrators have the explained software and hardware necessary to make everything flow efficiently. The last assumption is that the staff will know how to use the system, they may be new to this form of technology and require in depth training.

### 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?*

* A limitation in the building of the system is that lack of specificity on a budget. The timetable is there but there has been no indication of how much money they are working with. Also with this is the limitation of technology. There has been no discussion of what is required to make the system work or additional hardware or software that needs to be acquired. Another limitation is the staff being facilitated to make this process happen from both the back end and front end. It is unsure whether enough staff are employed already and if they aren’t the limit falls on who knows how to navigate the code or being able to make modifications as necessary. Training could certainly be required.

### 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