# 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?*

* Liam (owner of DriverPass) and the purpose of the program is to provide online and hands-on training to teens getting ready for their driving test.

### 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 problem currently is that teens don’t have an online resource to practice for driving and most teens fail their test due to lack of such programs.
* The system must be able to be online and the system must be able to differentiate roles of who is using the system that include:
  1. Admin (owner, IT)
  2. Customer
* The components are:

1. A driver
2. An instructor
3. 10 cars (1 driver per car)
4. 3 packages pertaining to driving lessons be 6,8, or 12 hours long.
5. An online system to access accounts and material pertaining to driving courses and packages.

### 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?*

* The system must have the ability to give access accordingly to the user’s role such as restrictive access.
* The system will also need to have the ability to keep track of people’s reservations, schedule changes, and what type of appointment is scheduled.
* The system will need to host practice exams pertaining to driving.
* Users should be able to register their account
* Users should be able to update their account (e.g., change password, contact 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?*

* There will be a need for a server, preferably Linux-based, as it is much more stable when the system needs to be updated. There won’t be a need to reboot the system, just the server itself in a “maintenance period time”.
* A browser to access the server.
* Updating should be done on a call-by-call basis through the API.

#### 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?*

* If the platform has a browser, then it should be able to access content on the application. This is assuming that the browser is up to date with the current security patches since this will mitigate the chance of DDoS attacks and malicious activity on the account.
* The backend will need a database, most preferably a rational database(SQL) with rows and columns that house the data such as a hashed id, users name, and other account info.

#### 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?*

* Accounts will be accessed through password-protected roles. Roles include (a user and an admin)
* Attempt to log in will be limited to 10 times to lessen a chance of a successful brute force attack. Once the limit is racked up the user will be locked out of their account and will need to verify the account through the email address that they registered and verified the account on.
* Passwords will be made with a requirement of at least 16 characters long and include at least one of each of the following combinations (uppercase, lowercase, number, and special character (!, \*, #, @)) This lowers the chance of password guessing.

#### 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?*

* Modifications to the database will be done through the C.R.U.D. method (Create Read Update Delete) this will be done through the API with GET, POST, PATCH, DELETE. This will keep us from having the change code.
* For platform updates, this will be done at times when the least amount of users access the application. This will be the “maintenance” time at which patches and features will be added to the app.
* IT admin would need administrator access to modify users’ accounts and to help with account issues that a user may have.

#### 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 login user must provide a username and a password.
* Secure transfer of data through client and server will be done through a Secure Sockets Layer (SSL) This is done with the help of Hypertext Transfer Protocol Secure (HTTPS).
* This will ensure that no one is listening to leaked data through the web sockets.
* If brute force is detected, meaning that if a flurry of requests is made to the database query, that account will be locked out and the user will be notified of the breach and will need to reset the password by verifying the email that they registered the account on.

### 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 havea user login/registration page.
* The system shall *have* an administrator login page.
* The system shall *have* a password to validate the user’s role.
* The system shall have a web-based application.
* The system shall be running on a server for the backend that houses the database of the user
* The system shall be implementing the C.R.U.D. method for creating, reading, updating, and deleting account information.
* The system shall have a driving test and practice driving test for the users.
* The system shall have package plans for the users that include:
  1. 6 hours two hours driving each session.
  2. 8 hours two hours driving each session.
  3. 12 hours two hours driving each session.

### 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 needs of the interface are as follows:
  1. A home page:
     + Nav section with sign-in/registration link, course info, and about and contact info
     + A section with a brief overview of what the site is about.
     + A footer with the company that created the site and the modification date and the admin sign-in link.
  2. A login/registration page:
     + A form that creates an account if the user hasn’t created an account yet.
     + The successfully create an account one must provide name (first, last), D.O.B., email address, home address, phone number, and a password.
  3. Course page:
     + Types of packages offered.
     + Pricing of the packages and payment method with a form for inputting card information.
  4. Users Logged in Page:
     + Active courses
     + Account balance
     + Process in courses
     + Scheduling, reserving, and modification of dates for tests
  5. Company About and Contact page:
     + Section about how and why the website was created.
     + Contact information by email/phone.
  6. Administration Page:
     + Analytics
     + Modifying user accounts.
     + Add/delete course materials.
     + Modification of pricing and availability.
* The users of the interface and their roles are as follows:
  1. The Owner and IT will have administrative access to DriverPass.
     + This includes modifications to the database and site.
     + Maintenance of features and patches to ensure a pleasant user experience.
  2. The Customer
     + Access course materials.
     + add/delete/modify reservations on account.
     + Register/update/delete account.
* The way a user will be able to use the application is by accessing it through a web-based browser. This ensures compatibility on most devices presuming that they are up to date.

### 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 present are:
  1. Most people have access to a device that goes online.
  2. The website caters to those of a younger demographic and thus those users would be technologically inclined where the application would be most suited.
  3. The creation of the site will increase the likelihood of the success of passing rates in youth in driving tests.

### 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?*

* Limitations are as follows:
  1. Scalability:
     + More users mean more resources used and cost to run the server/servers
  2. Web-based:
     + Online only (network dependent)

### 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.*

