# 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 noticed a trend in driver education through the DMV where more students are failing their tests. They want to fill this void in education with a system that allows driving students to schedule classes and practice driving with instructors. They would like customers to be able to make, cancel, or modify lessons online through their account, or through a phone call to the secretary. Another important aspect is the customer should be able to pick from three different packages based on their needs for learning. DriverPass hopes that their product will help to better prepare students for their driver’s education tests through the use of online instructions and driving practice with qualified 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?*

* Liam, the head of the company, and Ian, the IT officer, want to be able to have full access over all the accounts in the system so they can reset passwords if necessary, or block access to employees that no longer work for the company. They would also like to keep track of who made reservations, cancelled them, or was the last to modify them, in addition to having information on which driver is going with the student, and how to contact the student. Liam would also like to be able to download this data so he can work on it offline. Besides the tracking capability, they would like to be able to disable specific classes and packages if they would no longer like for a customer to be able to register for it. Another important detail is that they need to be automatically updated on new DMV policies and rules that pertain to their teaching. For the interface, it should show what classes are in progress, not started, or completed, in addition to information such as name, time taken, and score. They would also like to see notes that the driver leaves for the student. The client would like this to be a server-based web client and want to spend as little time with technical problems and security as possible so they can focus on their business. Since the system would require a login for users including the administration, the security of the system would be handled. Also, with regular maintenance or a user testing phase, the team will not have to spend much time with technical issues.

### 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?*

* This system should ultimately allow the customer to have full control over their driver’s education, allowing them to register for specific classes, pick their driver, and choose the time that works best for them to practice their driving. They should also be able to keep track of all of this through their own personal web interface. The drivers should be able to have information on the student and keep notes on their progress that can be seen by the administration at any point. Liam, Ian, and their secretary should be able to access any information about the customer at any point as well as download reports so they can be worked on offline.

## 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?*

* This application is required to be a web-based application run from a server. Since there will be multiple students or instructors on at any given time, the server should be able to handle the number of users that are on it at any point. This system should be updated regularly in order to keep up to date with security protocols and to fix any bugs that may be discovered by users of the system. This maintenance is necessary for the administration to spend as little time as possible with the security and technical components of the system, in other words, they would just like to focus on the content and users of the system.

#### 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?*

* This system should have the capability to run on most platforms that have a web browser such as Windows, Mac, iOS, etc. Since it will be webserver based, the platform should have little to no effect on the application. The only requirement is that it should have mobile capabilities as well.
* The back end will require a database in order to keep data on users such as their login information, and the progress of any classes that they have taken. There also needs to be a database for the driving instructors that has their information, their vehicles information, and information on any of the students that they have instructed. All of this information will need the capability to be accessed offline by the administration, since Liam stated that he would like to be able to work on these reports offline.

#### 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?*

* To distinguish between different users, the system should have a function that reads the username of the person logging in to the system. The function should then check the database to verify if the username belongs to an instructor, administrator, or a student and give specific accesses based on the level of user. The input should be case sensitive since that would only increase the security of the user authentication, and DriverPass stated that they would like to spend as little time on security as possible. If there is an issue, the administration should be notified immediately so that it can be fixed as soon as possible.

#### 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?*

* You can make changes to the website without changing code by adding the ability to send an HTTPS POST request to the server. This capability should only be able to be used by the administration.
* Since programmers will be working on the platform updates, the system should easily adapt to these updates.
* The IT admin should have full access to everything the system has to offer, if they are blocked out of specific parts of the system, then you run the risk on them not having the ability to fix something.

#### 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 a user to login in they should have a username and a password. For extra security, there could be two-factor authentication such as a text code or a backup email.
* Any sensitive data exchanged between the client and the server can be encrypted so that it is not easily stolen. Since it is HTTPS web server it will also have TLS to keep the data secure.
* If there was a brute force hacking attempt, the administration should be notified after a certain number of failed authentications and the account should be locked out for a specific amount of time (increasing every time there is a round of failed login attempts), it should also notify the user so that they may change their password.

### 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 confirm login credentials for access to an online profile.
* The system shall make changes according to DMV updates or changes.
* The system shall confirm customer selection from packages the clients would like customers to be able to register for.
* The system shall confirm customer details such as their address, first and last name, credit card information, and phone number.
* The system shall show exam progress and scores for students.
* The system shall confirm the type of user, such as a student or administrator.
* The system shall be available online where certain materials will be offered offline as study materials.
* The system shall allow the client to disable packages if one of them is unavailable.
* The system shall allow a user to change their password.

### 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.)?*

* Any device that has a mobile browser should be able to access this interface.
* The interface should show the profile, classes, and class progress. It should also have the ability to book driving appointments with instructors.
* On the administrative end, the interface should have the ability to modify classes, modify user information, and download data or metrics from the database.
* The different users of the interface are the students, instructors, and administration

### 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?*

* Things not included in the design above:
  + Creation of an account.
  + A system for billing and transferring money
  + The ability to test out of certain parts of the driving instruction if the student already knows about specific curriculum.
* There is one assumption that the students will have access to the internet and have some sort of device with a web browser.

### 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?*

* One of the main limitations is budget. Since Liam did not specify a budget, there is nothing to go on for how much money DriverPass would like to spend on this system, and the cost of constant maintenance in addition to updates to security will be high.
* The user could also be limited by their technology. For example, they have unstable or no internet connection.
* The DMV updating could also be a limitation. Since the rules will only update as long as the DMV updates them, if they are not staying on top of updating their website with new protocols, the system will not have updated information in it.

### 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.*