# 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, is a business that wants to create a service that will train and prepare student drivers to pass the Department of Motor Vehicles’ driver’s test.
* The purpose is to create a service that can be accessed online, and have some offline functions, that will allow students access to study material to prepare them for the tests at the Department of Motor Vehicles, and will also offer up appointments for students to schedule so they can practice driving.

### 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 has observed a void in available educational material for student drivers and a lack of means for many student drivers to practice driving.
* DriverPass wants to offer student drivers better quality education for learning how to drive and to provide a flexible means for students to practice driving.
* Among the components that are needed for this system is a system that will allow students to register an account, access education material based on the package the student purchases, schedule a practice driving session with a trainer, cancel any session they originally planned, and progress tracking for the student to view.
* The system will also need a server that will not just give users access to the system, but the server should allow authorized users access to any data that their role allows them access to, for example a student can see their appointments, track their progress, and view their appointments.
* Liam, the owner of DriverPass, would have access to information like activity logs for schedules that clients make, access to employee accounts in case an employee cannot log in or is no longer working at the company, any to any information that is relevant to the company’s data and performance.
* The system will also need to check for updates in the rules, guidelines, and requirements from the Department of Motor Vehicles in order for the system and the educational materials to be up to date.

### 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?*

* When the system is completed, students should be able to register an account, purchase a package that is offered by DriverPass, request a password reset in case they forgot their password, see a detailed and updated report of the progress, access any educational material that they purchased access to, schedule appointments for driving practice with a trainer and a car, and cancel appointments. Students should also be receiving messages to remind them about upcoming appointments, in the form of emails or text to their phone.
* Once the system is completed Liam, and the management in charge, should be able to create new administrator accounts and control how much access each account has, allow for administrator accounts to reset their password, delete administrator accounts, change policy details of the service, see activity logs of users and administrators of the system, makes changes to the packages that are offered to students, and see detailed reports of the company’s user count and any other relevant detail from a business side. Management should also receive updates about the latest changes from the Department of Motor Vehicles to keep the company’s services up to date.
* Administrators are employees that interact with the student users. They should be able to help students reset their passwords, update the progress report for each student, make changes to schedule appointments with student user being informed, offer assistance to students including answering any questions about the service.
* The system also needs to accessible from computers and from mobile devices, as it will be web based and needs to work on a variety of web browsers. It also needs to be encrypted as to protect user data and activity from unauthorized individuals. It needs to have different users, both students and administrators, restricted in what access they are authorized to have and what activities they can do based on their authorization.
* The system should also have a means of easy communication between student users and administrator users, and it also needs to have a means of easy communication between administrator users and management users. This also means being able to send notification to student users by administrators and management, or to administrators by student users.

## 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 needs to be able to run in a web-based environment.
* The system needs to be updated in real-time since users are regularly scheduling their driving lessons. This means constant updates to certain parts of the system like the scheduling portions of the system. Additionally, the system always needs to update users whenever they or the company makes a change, or whenever a new user is added.
* The system does not need to run fast since all it does is schedule driving lessons and provide some education sources, should the system need to provide more services like videos for lessons then the system can be upgraded but for now there is no need for a high-performance 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?*

* The system will be web-based so that it can be reached using any platform as longs as there is an internet connection and a web browsing app.
* The servers that the system will run on will be Linux as it offers a stable operating system for the server will also being cost effective.
* The back end will require a database to support the application since the application will need to access user data and login information, display information like current lesson schedule, and process and keep payment transactions.

#### 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?*

* Different users will be distinguished using a unique username and password to authenticate their credentials to access their user account.
* The input will be case-sensitive as it will allow for more unique usernames and passwords, which will improve the security of the system.
* The system should inform the admin of a problem whenever technical issues are detected, like the server connections are timing out with users, when some malicious activities are noticed like malicious users that have gained access to something that is beyond their user’s privilege access. Should a user forget their password, an email could be sent to the email that they registered with, and this will have a ling to reset their password, should issues arise then they would also have a link to contact customer support which will notify an admin.

#### 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 user should not require changing the code. A customer who is a user can make changes to their schedule or to their personal information, while an admin can also make such changes that do not violate customer privacy. No changes to the code will be necessary as the ability to make user changes will be coded from the beginning.
* The system will adapt to platform updates by doing scheduled system maintenance. This will also the system to still be up to date while also being able to run on all available web browsing applications.
* The IT admin needs access the servers and the entire system, from the code to the hardware and even access to making changes to other users’ accounts. Additionally, they would have access to the system to make the system updates and maintenance. They would not have access to private information of customers like credit card numbers or other sensitive and private data of users.

#### 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 log in they would need their username and password.
* All out going connections with the server will use the HTTPS protocol, and sensitive and private data of the user like location, schedule dates, and payment method will be encrypted.
* To prevent a “brute force” hacking attempt, the system will only allow a limited number of log in attempts for a user, five attempts in this case. Should not of the attempts result in a successful log in or if the user forgets their password, then the user will receive an email to the email address that they used to register their account and with it a link to reset the account and a customer/user support link.

### 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 user credentials when logging in.
* The system shall allow admins access to data that is within their privilege to access.
* The system shall allow users to add, remove, or modify their account information.
* The system shall allow users to purchase packages and schedule driving lessons.
* The system shall only give a user five attempts at a password before sending an email to reset.
* The system shall allow the IT admin to make system changes and updates.
* The system shall be accessible using any web browser application.
* The system shall encrypt and maintain all user data on server databases for quick, easy, and secure access to the user and admins.
* The system shall connect to the DMV and to any important government regulations that the service needs to conform to.

### 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 different users of the interface are the customers, IT admin, the owner of the system, and any other administrator of the system.
* To access the interface the interface each user will need a web browser application that can be used on any device that has internet access, like a laptop, tablet, phone, and desktop.
* The customer user will interact with the user by allowing them to click buttons that will give them access to different features such as purchasing packages, scheduling driving lessons, updating their user information. The interface will also feature sections that will ask for users to input information whenever it is necessary.
* Admin users will need access to non-private information of customers, they will also need data on the system itself presented to them, the IT admin needs to the interface to allow them to make changes to 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 assumption that I am making about all users is that they have access to a device that can connect to the internet with a web browser.
* There is an assumption that all users will be at least as young as it is possible to get a driver’s permit.
* There is an assumption that the internet will always be running and available, making the system constantly accessible to users at anytime and anywhere that they happen to be.

### 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 that this system will have would be handling the traffic of users. Too many users making request at the same time could be a limiting issue for the system. This limitation is about the server’s computational resources and the amount of data that can be transferred over the internet to many users by the server.
* There is a budget limitation. The owner of the system needs to make sure that they system makes enough money to sustain its operational cost, as running a server and the administration of the server something that has to be done constantly which means that it will have regular upkeep costs, besides the cost of instructors for the driving lessons.

### 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.*



