# 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, and Ian from DriverPass are representing the client DriverPass. The purpose of this project is to create a system that will handle helping student drivers with passing their driving tests and giving them an option to take online courses, and practices tests. As well as having an option to provide on-the-road training.

### 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?*

* They want their system to help student drivers pass their driving tests by offering assistance such as online classes, practice tests, and on-the-road training as well. They notice there is a hole in the market for this because there aren’t many companies that offer this service.
* Components that are needed are online access to data, and being able to access that data from anywhere.
* Another component would be an ACL, to allow rights and roles to certain position holders in the company. There is also tracking where a record is kept of who does what change at what time, this can be extracted into a report as well.
* Also, an important component would be having driving instructors have profiles.

### 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 be able have users log into the software and allow users to create appointments (through different package options) of their choosing.
* The users should be able to register, undergo a profile creation process where profile information (Special needs, drive photo, driver notes, etc.) would be provided to populate the appropriate fields.
* This system would need to be access and managed from anywhere with the proper sign in credentials, and so it has to be run by a cloud process (PaaS?) so that the system is completely up-to-date with patches, and security updates as well.
* This system should also to be updated to stay compliant with DOT regulations and requirements.
* The client also wants to have record history of what is changed at what time, and reports that show such information.
* The client should be able to pull information and access it from offline means, this would mean that offline date is prone to not being updated.

## 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 should be able to handle high amounts of traffic between servers, and be able to take input and process output in a very rapid response to keep up with public demand. The servers system should be able run at 60% CPU Usage and under 70% RAM usage at any given moment (projected public use) to prevent the servers from crashing or being overworked and packet loss, and fastest possible speeds.
* The product should be backed-up weekly at a moment of normal low usage traffic.. (Monday morning? 3am) Should be patched regularly, and should be updated constantly to ensure to that feedback from customers is being processed and taken into consideration, such as bug reports, etc. It should also be noted that the product will have to adhere to compliance framework set by regulatory officials from the department of motor vehicles.
* The program will have implemented on a web based page to be successful. A mobile application installment may be discussed but the application wouldn’t welcome all users (only those who confirm to having an updated and serviced phone of allowed vendors (Apple, Android).

#### 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 foundationally run on a web browser to start, mobile applications can be discussed as growth allows. If the mobile application comes into discussions, we can discuss what OS can support application, and what versions would be able to access this application.
* The back end would require some tools, such as a server-client relationship code implementation, APIs (for road weather and traffic readings to help construct best safest driving test route, and/or being able to sign in with your social media account) and the following servers are recommended for the back-end process. (Customer can choose to implement more than 1 process on the same server or more than one server for 1 process, it all depends on expected vs project client traffic and usage load).
  + Database
  + Monitoring
  + DNS
  + Password-security
  + Client load
  + Patch and update server

To have simplicity with the code, and due to a small load. Windows OS would be recommended as we can utilize a SQL Database management system, and windows has competitive security updates. As growth happens, the server management forest can move to Linux, to help protect against malware, security, and allow more cost-efficient decisions to be made, battling against high prices that are charged per license in much larger networks.

#### 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?*

* Each user will have to provide user email and a password (of recommended length and number of characters) to distinguish them.
* The inputs will be case-sensitive, and will automatically reach out via email if signing in from an unknown device and/or too many fail attempts.
* The system should inform the admin anytime too many fail attempts are reached. New login locations from unknown devices that unusual to first device where registration was created.

Admin should be aware if any profile changes where made to the profile account (password changes, phone number changes, etc)

#### 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?*

* Yes you should be able to change the user details without changing code, this would need to be created in the code to all user to change information without any help from explicit communication to the back-end (should all be implicit through front-end implementations).
* The system will make platform changes from customer usage feedback.
* IT admin access will need full access to all access material on the product/system, to change/add/remove users, and changing appointment times.

#### 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 user can create a profile through user and password (can be pulled from other accounts if implemented).
* Since this is web based, we can use HTTPS to secure connection traffic between servers.
* If a “brute force” login attempt happens, IT would be notified and the IP and MAC of the device that was making the efforts would be logged into an event logs on the backend where IT would have to reallow access from that IP back to the website.
* If the user forgets their password, they can choose the “reset my password” function where the change password prompt can be emailed to them at a private email so they can change their credentials.

### 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 information to allow the user to access profile and user information.
* The system shall apply security measures when a login is considered as too many failed attempts.
* The system shall adjust to DMV compliance reports and updates.
* The system shall record user details:

Phone number

CC

Full name

Address

Email

* The system shall allow users to change their password and information.
* The system shall allow two kinds of users, customer and/or administrator.
* The system shall only make online available to customers, administrators can access a snapshot of the webpage offline.
* The system shall display and notify removed packages on the customer side.
* The system shall allow admin to remove/add products as reserved by DriverPass.

### 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 will be dictated by the laptop webpage of the browser (Firefox, edge, chrome browser, safari etc.) and fit to the specifications of that computer that is trying to access the website.
* There will be 4 kinds of users in terms of the interface (End user, Admin, IT Admin, and Dev Admin).
* End Users will be able to user the interface to interact and use it’s front-end capabilities, as well as the Admins. IT admin will be able to use the front-end capabilities to adjust the interface. Dev Admin will be able to change the code of the interface to adjust the foundations of it.

### 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?*

* There is no mention of budget limits, Capital Expenditure limits, timeframes in terms of spending, and minimum or maximum limits. This is crucial information to have before starting work. Because this can dictate how much of this can be applied, and how much of all this won’t get implemented because the funds don’t cover the work. This can drastically change the scope of the development.

### 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?*

* As stated above, the budget can put a serious limit on work done, or dictate no work to be done at all, that would need to be cleared out. Without a Purchase Order, we would be unable to start work.
* System would need the access to the internet, a recently updated computer with updated software (ex, Windows Vista wouldn’t work).

### 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.*

*A screenshot of a computer

Description automatically generated with medium confidence*