# 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

d 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?*

* To provide Liam and the DriverPass team with a full stack, cloud-based web application that will enable their customers to be able to access online training modules, as well as book appointments for in-person driving sessions.
* The system needs to be able to connect with the DMV so that any updates to policies can be mirrored in the new system
* Liam also provided a wireframe of what he wants one of the pages to look like.

### 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 identified a need for better quality driver training.
* DriverPass wants to provide better training to drivers who are preparing to take their driving test
* DriverPass wants to be able to provide better online, and in-person training to new drivers
* Users should be able to access this training from anywhere through the internet.
* The different components of this system are:
  + The reservation/appointment component
  + The online training component
  + And the integration with the DMV

### 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 enable end users to be able to purchase a package from DriverPass that consists of in-person driving sessions as well as online training modules
* End users should be able to access the application from any device (through the internet) and book appointments/reservations for in-person driving sessions as well as access the online training modules which contain practice exams
* Administrators of the site should be able to track all data changes in the system and be able to generate reports that can provide insight into the data
* Administrators also need to be able to manage user accounts to perform tasks such as resetting passwords
* Additionally, users need to be able to view the details of, modify or cancel existing reservations from within the system
* The user must be able to view who their driving instructor is, what time the appointment is, where they need to be picked up/dropped off, and other basic information about their reservations
* Finally, there should be a place in the system where the end user can navigate to easily contact DriverPass.

## 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 web based so that it can be accessed from any internet-connected device.
* The system should perform with little to no latency.
* The system should be updated in batches as new enhancements materialize. CI/CD is probably not necessary here.
* The system should be scalable.

#### 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 run either on Windows or Linux (definitely not MacOS).
  + MacOS is not designed to be a server.
* The backend will require a SQL database of some sort to be able to store user information and appointments.
* The backend will also require some process to be able to stream instructional videos to the front end.
* Some sort of a caching database would also be useful here because I would imagine that there are some common requests from the database that will happen frequently.

#### 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?*

* Users will be assigned a unique identifier in the database that will distinguish them from other users.
* Input will be case-sensitive since we don’t know if the system will run on Windows or Linux yet. (Linux is case sensitive, Windows is not)
* The system should inform the admin of any failed requests made by a user from the system.
  + Additionally, there should be a performance monitoring solution put in place so that the overall health of the system can be tracked.

#### 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?*

* The system will allow for the user to update/modify their personal information such as payment methods and profile information.
* The system will not update automatically with the platform that it runs on. Extreme care should be taken when upgrading the platform because a major version upgrade could break the system.
* The IT admin will need full database access as well as an interface in the system where they can add/remove/modify users, appointments, or instructional videos

#### 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 will need to provide their username and a password to login to the system.
* The client and server will communicate over HTTPS which uses SSL to secure data transport.
  + A certificate will be needed for SSL
* If an account attempts to login more than 5 times in a minute, the account will be temporarily locked out. If this happens more than once, the account will be permanently locked out and will need to be unlocked again by customer support.
* If the user forgets their password, they can click on a forgot password link which will email them a link to reset 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 authenticate every user that visits the site.
* The system shall lock an account temporarily if there are several frequent attempts to login to an account.
* The system shall send notification emails 1 day prior to a driving appointment.
* The system shall prevent the user from booking more than one appointment at a given time.
* The system shall allow a user to change their password and profile data.
* The system shall allow administrators to be able to add/remove/modify any data in the system.

### 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 responsive as it will be displayed on many different screen sizes.
* The different users for this interface will be the customers, and the system administrators.
  + There will possibly be different interfaces between system administrators and IT administrators (if it is decided that there is a difference between the two.)
* The customers will need to be able to log in, view instructional videos, book appointments, pay for their plan, update their personal info, and logout.
* System administrators will need to be able to create update or delete user accounts, appointments, and instructional videos.
  + System administrators should NOT have access to any user’s payment information.
* The user will interact with the interface through a browser.
  + The browser can be on any device such as a computer, tablet, or mobile device.
  + This makes the development process easier as there is only one deployment pipeline

### 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?*

* I am assuming that all of the users will have access to the internet through a browser in one way or another.
* I am assuming that the user has a credit card available to pay for their package.
* I am assuming that the user speaks English.
* I am assuming that the user has enough bandwidth to be able to stream videos from the system.
* One thing that was not addressed in the design above is that, regardless of the platform that is used (Windows or Linux), the system will be hosted in the cloud which will enable us to automatically scale the website to meet the demand of the users.

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### 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?*

* The system will only be presented in English.
* The project needs to be signed off by May 10th.
* All development needs to be done by May 7th.
* If the business were to grow to other parts of the country, then there would be increased latency between the user and the system. Unless the system is replicated across different zones.

### 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.*

Chart, timeline

Description automatically generated