# CS 255 Business Requirements Document

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, Drive Pass, aims to provide driving training through online classes: including practice tests, and some 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?*

* Client needs online and offline access.
* Needs to be compatible with any operating system (Win, Mac, iOS, and Android OS)
* Client needs full admin access:
  + Password reset.
  + Block accounts.
  + View account activities
  + Create account reports.
* Program needs to allow the user to manage their own appointments.
  + When scheduling, present users with 3 package options.
* Program needs to alert the client on calendar-based items. (ex. Reservations, cancellations for driving lessons)
* Users test progression should be displayed.
* User needs to have ability to create and edit 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?*

* The program should allow students to take online exams and schedule lessons through a cloud hosted web application.
* Students should be able to access and review their upcoming exams and review previous grades.
* Priorities must be assigned to each task. This is to arrange the order in which projects need to be completed.
* A timeline needs to be created to show the when specific tasks are due (an admin must be able to edit this).

## 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 needs to be a web application.
* The system should load the web app within 2 to 5 seconds.
* The site should be designed in a way that allows future updates.
  + The web app should be updated during peak downtime.

#### 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 web application will require a database to store user and class information.
  + This database needs to be accessible at all times.
  + This database needs to have permission levels, for students, Professors, and Admin.
* The web application needs to run on all OS and Browsers.
* There should be three account levels: Student, professor, and admin.
* Admin should allow taking a class on/offline when the class is full.

#### 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?*

* Every user will require unique login IDs. Each being:
  + Case sensitive
  + At least 1 uppercase character, and 1 number
* Users have 5 login attempts before the system will flag it as a potential brute force attack.
  + In this case, the account will lock and the admin will be notified.
* Users must register for two factor authentication(2FA).

#### 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?*

* IT Admin level accounts are powerful. They can modify:
  + Content
  + All accounts
* All accounts will have modifiable profile fields to edit basic information, this will ensure the code will not need to be altered to make basic personnel changes.
* The system needs to be adaptable to new changes.

#### 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?*

* As stated above, should 5 wrong attempts be made the system will consider it a brute attempt, and automatically do the following:
  + Lock the account
  + Notify the admin
* Users must use two factor authentication – Using 2FA will mitigate a lot of login and security problems.
* HTTPS will authenticate all connections to the web application to keep out malicious connections.

### 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 all connections to the server.
* The system shall validate user credentials.
* The system shall allow content modification.
* The system shall allow system updates.
* The system shall display a user interface that displays users upcoming tasks, grades, and course materials.

### 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.)?*

* Different users are Students, teachers, and IT admins.
* The user interface(UI) needs to be free of clutter
* The UI should make information easily accessible.
  + Accessibility settings should be available.
* Admin and teacher UI should present more options to edit content.
* Student UI will not allow students to edit course content, but will allow them to change personal information, submit coursework.
* The UI needs to allow tests to be taken within the web app.

### 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?*

* All users are internet literate.
* All users have access to the web.
* I assume teachers have experience using and making changes to a web application.
* I assume the clients’ servers have bandwidth to handle simultaneous connections to a database.

### 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?*

* Creating an application that is optimized for all operating systems is a big limitation.
  + Mobile development will require a separate UI.
* Time is a big constraint.
  + 15 weeks is not a lot of time to build an entire web application.
  + Core functionality will be implemented, then once the application is live new features will be added in updates.

### 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.*

Timeline

Description automatically generated