# 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 purpose of this project is to create a system that provides the end user with better driver training than is currently available on the market.
* The client is DriverPass, a company specializing in training clients to pass their driving test.
* The system that DriverPass would like to create would provide online training and scheduling for in-person training as well as provide the administrative tools for the employees of DriverPass to control and maintain the system.

### 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?*

* Driver recognizes a “a void in the market when it comes to training students for the driving test at their local department of motor vehicles.”
* The system will provide students with online courses and practice tests which will help prepare them to take their drivers test at the DMV.
* The system will also allow students to schedule in-person training which will help them gain on-the-road experience with an instructor.
* The components of this system are a back-end that stores and processes the information, a client interface which allows users of the system to log-in, a student component which will allow the client to complete the training material, and tools which will allow the employees of DriverPass to perform administrative actions.

### 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:
  + Clients should be able to take online classes and practice tests.
  + Clients should be able to schedule appointments for in-person driving lessons.
  + Administrators should be able to reset client passwords.
  + Administrators should be able to access system data.
* The measurable tasks needed to achieve this are:
  + Create use-case diagrams.
  + Create activity diagrams for each use case.
  + Create class diagrams.
  + Build user interface.
  + Link database to interface.
  + Build business logic.
  + Test system.
  + Deliver system.

## 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 client interface should run in a modern, up to date, desktop or mobile web browser.
* The back end should run on a dedicated cloud-based hosting platform.
* The system should be updated as security patches come available at times with minimal client use.
* The client interface should stream course content smoothly over a low spec connection.

#### 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 client should run on Windows, MacOS, Unix-based systems, and mobile platforms.
* The back end should run on a Unix-based cloud server.
* The back end should utilize a SQL database for client information, hosted by the cloud server service.

#### 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?*

* User account names will be unique, not case-sensitive, and created during the registration process.
* Passwords shall be case sensitive and created during the registration process.
* Password hashes will be stored on the server and used for authentication.
* Administrators should be alerted whenever an error occurs that involves the stability, security, or proper operation of the system.

#### 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?*

* Administrators should be able to change user accounts through the administrator client without having to manually modify the database.
* Platform updates should be applied to a testing branch to test for issues before being applied to production.
* The IT admin should have full access to change accounts of both users and employees.

#### 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?*

* Input of the correct username and password should be required for a user to log in.
* The TLS protocol should be used to provide end to end encryption between the client and the server.
* Accounts should lock out after three successive failed log-in attempts to prevent brute force attacks.
* Locked out accounts or forgotten password prompts should alert administrators to verify identity and manually reset passwords.

### 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 display course materials.
* The system shall administer practice tests.
* The system shall display progress through course materials and results of practice tests.
* The system shall display driving packages.
* The system shall allow driving packages to be disabled by the administrator.
* The system shall allow reservations to be booked by the user.
* The system shall allow reservations to be changed or cancelled by the user.
* The system shall show information of the driver each user is paired with.
* The system shall provide logs and metrics to administrators.

### 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 should be tailored to the access level of each person using it (user, employee, administrator).
* Users shall be able to:
  + View course materials.
  + View course progress.
  + Take practice tests.
  + Review practice tests results.
  + Book/reschedule/cancel reservation.
  + Update profile information and password.
* Employees shall be able to:
  + View driver schedules.
  + Book/reschedule/cancel reservations for users.
  + Reset user passwords.
* Administrators shall be able to:
  + Have the same interface options as regular employees.
  + View system logs.
  + View usage statistics.
  + View reports by user.
  + Disable driving packages.
* Users will interact with the interface through a desktop or mobile web browser. The layout will be modified for mobile access, but the underlying content and method of navigation will be the same as the desktop client.

### 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?*

* An assumption is that the course content will be in a format that does not require third party plugins or software to run.
* An assumption is that no alternative language or accessibility considerations need to be engineered into the system.
* An assumption is that the bandwidth requirements and number of users will no fluctuate drastically.
* An assumption was made that the budget of the project will cover the cost of cloud hosting.
* An assumption was made that all employees who are not administrators will have the same level of access.

### 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?*

* With the limited time till deployment, only eleven days are designated for testing, which doesn’t leave much time to fix bugs or rework features.
* Personnel is a major limitation, with only five members of the development team extra resources can’t be allocated to any task that is running behind.
* The budget for the project hasn’t been specified. It could pose a major limitation if deployment gets pushed back or if the cloud server requirements are more than initially anticipated.

### 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 with medium confidence