# 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

* Our client, DriverPass, requires a cloud-based website accessible from computer and mobile devices for their business that provides driver training. The website is to provide online scheduling, training, and practice exams. The system will need to be able to create user accounts for the employees and customers. The customers and certain employees need to be able to create new accounts, schedule driving lessons, and pay for lessons and chosen packages. The customer accounts also need to be able to take online courses and practice exams.

### System Background

* DriverPass wants to create a service that provides better driver training for DMV driving tests to help more people pass including a system that lets customers create accounts, purchase packages, schedule driving lessons, take online courses, and take practice exams with tracking.
* User accounts, payments, scheduling, report generating, classes, practice exams,
* Compatibility for mobile devices
* Cloud-based
* Owner access and notifications

### 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?*

* Collect requirements
* Create use case diagrams
  + Build activity diagrams for each use case
* Research user interface designs
* Build class diagram
* Build interface
* Link database to interface
* Build business logic
* Test system
* Deliver system
* Customers should be able to access functions to:
  + Create accounts and change/reset passwords
  + Choose from and pay for available packages
  + Take online driving courses
  + Access course material(s)
  + Track test progress and completion(s) including score, name, time, and status
  + Schedule/reserve driving lessons with date(s), start/end time(s), and pickup/drop-off location(s), and driver
  + Cancel or modify reservation(s)

* Secretary account functions are to include:
  + Create new customer accounts with first name, last name, address, phone number, state, and credit card information
  + Make/modify/cancel appointments for customers
* IT account functions are to include:
  + System maintenance, modifications, and updates
* Owner account functions are to include:
  + Access and full privileges to all functions of the website including deleting/blocking accounts
  + Generate reports, track appointments
  + Receive notifications for any appointment changes and automatically update the appointment tracking report
* Upload driver notes for each student account (unspecified employee account)
* Get notifications when the DMV adds/edits any rules, policies, sample questions

## 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 will be a web-based, cross-platform application.
* Speed will more than likely be determined by the cloud service and package chosen.
* Updates to the system shall be determined anytime technology or company policy warrants it:
  + Access/account updates should be done every time an employee is terminated/quits
  + Update any time the owner wants to implement change to a module, package, etc.

#### 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 platform it runs on should possibly be determined by the person that will need the expertise to make future updates, in this case the IT officer, Ian.
* A platform such as Linux could be used for its portability and free tools, however, Windows and Mac can also support the required services, which is why it should depend on the person required to make any updates or modifications.
* The customer wants a cloud-based system, so any back-end tools, storage, and servers will be run by the cloud-service provider.

#### 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 their own distinct logins, can decide between a username or email, strong password policies are recommended with case sensitivity, non-dictionary words, special characters, and a set minimum number of characters.
* The system should inform the admin when multiple failed attempts of a login occur.
* The system should inform the admin immediately of all detected/possible problems.
* The system should distinguish from customer users, admin users, owner, IT user(s), based on credentials.
* The system should distinguish customer users by their purchased packages or general, non-purchaser users with no capabilities except to read information about the services and purchasable package(s).

#### 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 won’t have to change code, there will be functions to update those object instances
* IT admin will need access to make updates, modifications to the system, full access unless otherwise specified by the owner.
  + As such, the owner should also have full access and privileges, possibly more so than the IT officer.
* Platform updates should be done during slow traffic times for the website and Ensure any changes to libraries for the code are updated so there aren’t any bugs. The system should not be affected when platform updates occur.

#### 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 customer wants the system to run off a 3rd party cloud to not deal with security or backups.
* The system will require a single authentication factor for customers with email and case sensitive password that are stored on a secure server or database.
* HTTPS and SSL protocols will be employed for transmitting secure data like payments and logins
* Least privilege will be incorporated based on the user type, especially for the different admin accounts and their allowed capabilities.
* Brute force hacking attempt: lockout account(s) after a certain number of failed login attempts; reset accounts that are known to be part of breached credentials immediately after detecting any attempts.
* Customer users will be able to change forgotten passwords with email verification and a one-time password with a set validity period.

### 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 give the customer/user the ability to purchase a package out of three choices.
* They system shall give the customer/user and secretary user the ability to reserve, modify, or cancel driving lesson(s).
* The system shall give the customer/user that purchases Package Three the ability to access the online course, materials, and practice tests.
* The system shall allow drivers to upload lesson information with notes.
* The system shall show driver notes for each customer/user (that has had driving lessons).
* They system shall generate downloadable reports.
* The system shall give/get notifications of updates from the DMV.

### 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.)?*

* Users will interact with the interface through a web browser.
* Web based, work on devices including mobile devices
* The different users will be customers and employees with ranging ages over 15 years old and ranging abilities.
* Each user will need to be able to give input to the system through clicking on icons and buttons as well as typed input.
* Users will receive output in clear and simple messages when needed and directed to the appropriate pages upon selecting an icon or button.
* Customer users will need to be able to reserve driving lessons, access/modify/cancel their own driving lesson reservations, view purchased course materials, view driving lesson notes, view and take purchased practice tests, and view grades and progress of practice tests.
* Driver users will be able to upload driving lesson notes to customer users’ accounts.
* Secretary users will be able to reserve and modify driving lessons.
* Owner will be able to generate and download reports and delete or modify admin accounts/privileges.
* IT user account will be able to make updates and modifications 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 users have access to the internet.
* The cloud service has good internet up-time, availability, security, storage, and reliable electricity.
* Multiple users can access the system at a time.
* The company’s IT person will have the knowledge to implement proper changes/updates.
* Specific cars do not need to be part of the system when tracking lessons, as there are the same number of drivers as there are cars, therefore, drivers should be all that is necessary. Internally, they can determine what driver has what car.
* There are no videos so no special audio capabilities are being built in.

### 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 web-based language will need to be used
* No budget or time constraints were given; however, we gave ourselves approximately 16 weeks for the project from start to delivery.

### 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, waterfall chart

Description automatically generated