# Business Requirements Document

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CS-255: System Analysis and Design

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# 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?*

* DriverPass, the client, would like support in creating a website that provides students with online classes and practice driving exams in preparation of a real driving exam.

### 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 determined the need to provide better driving education to new drivers.
* Many drivers fail their driving tests at the DMV.
* This system needs to accessible online and offline while providing online classes, practice exams, and the ability to book reservations for in-person driving lessons.
* Any modifications or updates to data will only be available online so duplicate data is not stored.
* Usernames and passcodes must be set for users and employees and different levels of clearance needed to access and change those.
* Users need the option to reset their passcode.
* Online reservation system will need to be made to set two hour driving lessons by the user’s preferred date and time. The ability to call or a visit a local office to schedule a driving lesson needs to be integrated so time slots are not overbooked.
* Users will be set and stored with specific instructors, cars, and driving times so the company may keep track.
* User may cancel, request, and reschedule appointments online.
* The system must offer different packages.
* Modules may be added or removed.
* DriverPass needs to be able to disable packages.
* Registration requirements for customers must include:
  + First and last name
  + Address
  + Phone Number
  + State
  + Credit card number
  + Expiration date
  + Security code
  + Pickup and drop off location
* System needs to be connected to the DMV so any changes in laws and compliance are kept up to date
* System needs to run off Cloud

### 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 completed, the system will allow users to schedule, cancel, and modify driving appointments
* Online classes and practice tests will be available to users.
* The system will only allow specific employees with specific clearance to access certain features.
* UML diagrams, Kanban boards, and a Scrum approach would be recommended to approach this project.

Measurable Tasks:

* + Track the number of cars, drivers, and reservation times available.
  + Reservation times should be allotted in 2-hour increments.
  + According to the selected client packages, the number of driving hours divided by two will be the number of available driving appointments.
  + Clients should be able to contact DrivePass by phone or in-person to modify, schedule, or cancel appointments.

## 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 would best be run through Cloud so the website may also be linked to an app when needed. This would allow for a seamless user experience when switching platforms.
* The system needs to run quickly so users won’t become frustrated with load times. I would suggest finding a fast-hosting service to make this happen.
* With the changing of scheduled courses and appointments, the website should update these instantly. I would suggest continuous updates as new features are added.

#### 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 on Linux platform due to its versatility. Since most users have Windows or Mac OS, Linux will seamlessly work with both.
* Since the system will run on Cloud, databases will be managed there and will not be needed for back end.
* The system also needs to adapt to mobile users. This would work great with Linux because the operating system running on the mobile device is generally not relevant to the process, as long as the device has a web browser that can display HTML, JavaScript, and CSS.

#### 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?*

* The website will use cookies. Cookies within each session will help identify the users.
* Users will create a unique username upon entering the website for the first time. The username will not be case sensitive.
* Users will also input a case sensitive password.
* The user will also input an e-mail address and phone number that may receive texts when setting up their unique account.
* The website will use multi-factor authentication. If on a cell phone, thumbprint recognition or a OTP will be input.
* If 3 failed OTPs are entered, then the account will be locked and system admin will be notified.
* Any bugs, glitches, or problems will be reported immediately to the admin.
* Twice a day, reports will be sent to the admin of any errors that have occurred. Immediate alerts will be sent for critical issues.

#### 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?*

* User changes can be made by the admin or the user without changing the code.
* Platform updates will happen continuously so that the system itself stays up to date with the platform.
* Tests will occur to make sure the system is adapting to platform updates.
* Software updates need to occur to keep the system secure and in line with the platform.
* IT admin needs access to the server and databases to remove employees that no longer work there, update passwords of users that are locked out, and to grant or remove access to current 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?*

* User log in will consist of a unique username associated with a phone that may receive texts and an e-mail address and a unique case-sensitive password.
* Upon correctly entering the log in information, the user will choose to have an OTP sent to their phone or their e-mail. This code will be valid for 5 minutes or 3 attempts, whichever comes first.
* Cloud will be responsible for the data exchanged between the server and client.
* In the event of a “brute force” hacking attempt, the system shall lock out the user after 3 failed log-ins and the security admin should be notified immediately.
* If the user forgets their password, a link will be sent to the user’s e-mail to reset the password. A OTP will be sent via SMS to the phone number associated with the account. After clicking the link, the user must enter the OTP in 1 attempt to reset the password. After the password is reset, a SMS and email will notify the user the password has been changed and if they were not the one to change the password to notify Security via a phone number.

### 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 user credentials when logging in.
* The system shall verify the user by using OTPs.
* The system shall allow the user to schedule, change, cancel, and track any appointments pertaining to the user’s information.
* The system shall disable the user after 3 failed log in attempts and notify the security admin.
* The system shall provide classes, practice exams, and exams.
* The system shall provide unique access based on the user and their privileges.
* The system shall supply data based on exam scores and user interaction.
* The system shall provide details to the user about the driver corresponding with them.
* The system shall remain fast, efficient, and up to date.

### 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 user interface needs to be clear, concise, consistent, responsive, and accessible.
* The different users will be the customer, IT admin, security admin, and employees.
* The IT admin will need to be able to make changes and update the system as needed. IT will need a browser to do so.
* The security admin will need to be able to reset passwords, view security threats, and prevent attacks. Security will need a browser to do so.
* The user will need to be able to set, schedule, reschedule, cancel, and view appointments. The user will also need access to online classes, practice exams, and exams. This can be done on a browser or through a mobile device.
* Employees will need access to their daily schedules, as well as the ability to set appointments for users.

### 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?*

* Design- Although this will be web-based, the plan is to make it accessible to all customers, therefore an app will also be needed.
* Internet- The assumption is that users will have internet connection at some point throughout the day to allow for updates and changes.
* Budget- There is no set budget so we must assume that DriverPass will not have a limit with the budget.
* Accessibility- We must assume the users are technology-friendly and will be able to use this site.

### 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 must be compatible with all operating systems.
* The system needs to be completed within 15 weeks.

### 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.*

