# CS 255 Business Requirements Document

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## 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 develop a system for the client, DriverPass.
* The owner, Ian, has a vision for his company and wants to offer different options available for training students to pass their driving test.
* Ian, wants the system to be able to provide online access for classes, practice tests, on-the-road training- which would require a database for scheduling (cancel/modify), availability, etc.
* The client also wants the system to have a tracking feature as well as the ability to download reports and access data from anywhere.

### 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?*

* As well as provide training options, online access to classes, practice tests, scheduling/reservations, reports, and tracking (for reservations, cancellations, modifications), as well as selecting a training package, if wanted, and can customize their training package.
* The system needs to be ran off the web (preferrable from the cloud).
* The system will need a website for customers/future customers, a mobile application, and some secure databases to store user information, and scheduling/reservations.
* DriverPass notices a problem with the amount of people who fail their driving test and wants to help student pass by providing a variety of options, training, and tests.
* Some of the main components of the system are online classes, and practice testing, and a scheduling feature.
* The system should have an accessibility option, that provides employees and customers with only the right amount of access to use the features, or successfully do their jobs.

### 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 system must have a fully functioning website that allows users to take practice tests, online classes, and scheduling options (cancel and modify) for on-the-road training.
* The system should be able to grant access for authorized users and keep sensitive data secure and safe from unauthorized users.
* The system also needs to have a mobile platform.
* Tracking information for reservations, appointments, cancelling or modifying information, with the ability for the owner to download reports and access information online from anywhere.
* The system should also have an automated setting for users to reset their password without needing to call or reach out to DriverPass.

Measurable features will include:

* **Use Case Diagrams & Activity Diagrams**
* **Research User Interface Design**
* **Class Diagram**
* **User Interface**
* **Database tables & link to UI**
* **Business Logic (Security, Role & Right) Layers**

## 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 environments will be web-based (cloud preference) and a mobile platform.
* The website and mobile platform should have a similar design, and both have the same options and features.
* There is not a specific performance speed, but the user and employees should be able to access the features on both mobile and web environments without any issues, delays, or complications.
* The system should be updated regularly when new features need to be added, modified, or removed.
* The system needs to also be updated to stay current on DMV requirements for testing, questions, modifications to laws or any relevant changes.

#### 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?*

* Linux would be a good option for the system to run on. Linux OS provides security features (more secure than Windows) and has more privacy protection than Windows. However, if this is run on the cloud, security should not be an issue.
* Windows has a higher hardware requirement than Linux OS.
* Customization and a variety of distributions make Linux a good option for this system.
* The database and security should be covered for backend requirements when using the cloud.

#### 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 create a unique username and password and will be checked with the system to make sure access is only granted when the correct combination of name and password are provided.
* The input should be case sensitive and could also include two-way authentication if DriverPass is worried about hackers and breaches.
* The admin will need to be informed immediately of any problem, large or small, so they can take the best measures to quickly address and resolve the issue, bug, defects, etc. within 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?*

* There will not be any need to change the code to add, remove, or modify any of the users.
* Changing permission and authorizations should be granted to the master user and should be able to delegate access and update authorization as necessary.
* When DriverPass wants to update or add any features, it will have to be updated across each platform.
* The IT should have full access to the system to make changes, remove employees or users, etc. The IT should have more access than the owner because the owner should not be altering or adjusting the system without a thorough understand of the system. If the owner wants to make system adjustments, he should contact the IT and have the changes made via the IT admin.

#### 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 requirements for a user to log in, will began by the user being a registered customer.
* Next, the credentials, name, and password, must match exactly to the information in the user database. This should be case-sensitive.
* The system should freeze or put a hold on the account of “X” number of incorrect attempts to protect against “brute force” hacking.
* As far as the password, the owner of DriverPass wants an automated feature to reset a 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 allow users to register an account.
* The system shall validate user credentials when logging in.
* The system shall allow users to make, change, modify and cancel reservations.
* The system shall offer practice tests, online classes, and offer on-the road training (scheduling)
* The system shall allow a specified amount of access to different employees and users.
* The system shall have a tracking feature for reservations, modifications, cancellations and allow the owner to access and download data remotely.
* The system shall offer three different training packages with customizable options.
* The system shall protect customer’s sensitive information.
* The system shall show users testing progress (name, test taken, score, and status).
* The system shall run efficiently and have no major issues, bugs, or defects.

### 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 UI must allow the users to take online classes and practice tests, as well as make reservations, change, modify and cancel reservation.
* The UI should show the customer and employees what customer is paired with which driver.
* The interface must allow employees access to see system information and make changes as needed.
* The UI should have a drivers note table and allow input from user and have a contact page.
* The user should be able to interact with the system from a mobile device, computer/laptop, or tablet.
* The users will be customers, employees, DriverPass owner, and the IT admin.

### 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?*

* We were not provided with any specific design aspects (logos, color, sizes, layout, etc.)
* There was also not a specific schedule for completion.
* One thing that was not included was the cost (budget) for the system.
* That they have multiple platforms to run Linux and access a cloud-based environment.

### 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?*

* Budget is always a possible limitation, since it was not discussed it is difficult to say whether there will be any limitations. But money is usually one of the main factors in a system design.
* Time limitations are another factor, can all of this be completed in the time DriverPass needs it to be done. Working under pressure if someone goes wrong or falling behind schedule can be detrimental to a project.
* Tech limitations could be having to use a different OS or not being able to have the system ran through the cloud.

### 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*