# CS 255 Business Requirements Document Template

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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 create a system capable of handling and performing tasks required by the client.
* The client is DriverPass, and they want their system to act as a one-stop-shop for students to pass their driving test with the DMV.
* The system will provide users with online practice tests and classes as well as on-the-road training that they can sign up for and reserve through 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?*

* DriverPass wants their system to be a one-stop-shop for students trying to pass their driving test with the DMV.
* The client recognized that many people fail their driving test with the DMV because there currently is not a great deal of driving training resources available.
* The client wants the system to provide in-depth training, including online classes, practice tests, and on-the-road training as well.
* The student will be able to create an account and track their study progress through the system in hopes that they can be prepared for their DMV driving test and pass the first time.

### 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 provide current information and resources for students to be able to pass their DMV driving test. Below are measurable tasks to be completed in order to achieve this goal.
  + Collect Requirements
  + Create Use Case Diagrams
  + Build Activity Diagrams for Each Use Case
  + Research User Interface Designs
  + Build Class Diagram
  + Build Interface
  + Link DB 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 system needs to run in a cloud-based web application. This is so students can access their content through the internet as well as schedule, modify, or cancel appointments, and so the DriverPass owner and certain associates can access the data from any device in order to maintain the system.
* The system should be fast, with content taking no longer than 5 seconds to load. This is because users will be taking online tests, tracking their progress, and reviewing in-person driving tests, so they need their content to load in an efficient manner in order to get the most use out of the system.
* The system should be updated on a continual basis in order to adjust driving appointment package availability, update DMV information, and so the owner of DriverPass can update employee account roles and access.

#### 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 is cloud-based, so it does not require any specific platform to run on. It can be accessed on any platform or device with a connection to the internet and cloud.
* A database will be required to support the back end function of this application in order to manage user account information and driving appointment information, such as what student is matched up with which car and driver and at what time.
* A tracking tool and database will also be required in order to keep a history of reservation information as well as print activity reports in order to detect or solve any issues.

#### 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?*

* Different users of the system will have their own account with a unique username and password, as well as other personal relevant information attached to their account.
* The username must not already be in use at time of creation. The password must include at least one capital letter, at least one special character or symbol, and at least one number.
* Input for username and password will be case-sensitive.
* The system should inform the admin of a problem as soon as it arises. For example, if there are multiple unsuccessful attempts to access an account, the admin should be notified immediately after.

#### 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?*

* Certain changes can be made to the system and users without changing the code. These changes include disabling driving session packages and updating DMV information.
* The system will be cloud-based, so platform updates will not affect it. However, the system itself will be continually updated in order to remain current and high-performing.
* The IT admin will need to be able to maintain and modify the system as needed, so he will need access over all accounts in order to do so.

#### 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?*

* A username and password is required for the user to log into the system.
* The connection and data exchange between the client and the server will be secured using encryption. This will ensure that the data remains private even if compromised.
* If there is a brute force hacking attempt on an account, the account will be locked and the user will be notified and instructed to update their credentials.
* If the user forgets their password, there will be a link to reset it on their own using authentication methods in the process.

### 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. This ensures user information is protected and only accessed by the correct individual.
* The system shall grant authorization levels for different users. This ensures only certain users, such as the IT admin, have high access to the system.
* The system shall utilize notifications. This ensures the system remains up to date and pertinent information is relayed in a timely manner.
* The system shall use reservation tracking in order to keep a record of reservations and modifications.
* The system shall track online test progress and make updates so the student can remain informed.
* The system shall allow users to reserve, modify, and cancel appointments.

### 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 needs to display a logo, online test progress, driver notes, user information, special needs, a driver photo, and a student photo.
* The different users for this interface are students and administrators.
* The student will need to be able to take online classes, take practice tests, track their test progress, view and update personal information, make driving session reservations, and review any driver notes.
* The administrators will need to be able to view reservations and reports, update the system, modify driving session availability, and revoke or modify access.
* The user will interact with the interface using any compatible device with internet and access to the cloud-based application. A mobile version may be necessary in the future in order to make mobile interface interaction more user-friendly.

### 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 team will have all the tools and resources necessary to implement a high-speed, high-functioning, secure, cloud-based system.
* Every user will have access to high-speed internet and a fully compatible device.

### 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?*

* One limitation is cost. A budget was not outlined in the DriverPass interview, but every project must have a cap on how much they can spend to ensure the system and business remain viable.
* There will likely be a limit on resources available, such as equipment and team members, so the team will need to work within those limitations when creating the DriverPass system.

### 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