# CS 255 Business Requirements Document Template

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System Analysis and Design

## 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?*

* Our client DriverPass would like to take advantage of a void in the market and create a training solution for training students for the drivers test at their local DMV.

### 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 would like to have a cloud based system to allow student to register, take practice tests, and schedule appointments with driving instructors. DriverPass will need a scheduling component, comment component to allow instructors to make notes on students driving, information component for students information, and a component to show the progress of testing.

### 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 DriverPass system will need to be accessible online to allow students to take online classes and practice tests.
* Ability to download reports from system to allow for offline work.
* Multiple roles with different security rights.
* Ability to track and log changes made to the system (for example, who made a reservation, who changed it, and who canceled it).
* Ability for customers to make reservations online.
* System needs to be cloud based.
* Ability to manage all accounts (ie: reset passwords)
* User friendly user interface design.

## 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?*

* This will need to be a web-based system that can handle many users at one time and be cloud based so the client isn’t responsible for the backend updates, backups, and security.
* This system will need to be fast enough that a user can access the site, review materials, and take tests without any complications.
* They system will need to be updated on a regular basis to cover any bug found, any security patches needing updated, and when any updates to the DMV guidelines.

#### 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 will be run over a web browser allowing for clients to utilize different devices and operating systems without issue.
* The site should be able to be resized to fit a mobile device screen.
* There will need to be a database to hold the customers information such as name, phone number, address, etc.
* Support will be given from the cloud provider for applications running on their systems.

#### 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?*

* System will rely on users email addresses to distinguish between users. These will be unique and have no duplicates.
* User’s email addresses will not be case-sensitive, but the password will be.
* Any issues that arise should have automatic notifications sent to the admin so these issues can be resolved in timely manner.

#### 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?*

* The system will need to be designed to allow users to be added, removed, and modified by authorized personnel without the need of changing code.
* IT admin will need access to the code to allow for bug fixes, security updates, and any general updates needed on the system.

#### 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?*

* When logging in, all users will be required to have a unique email/username and corresponding password. The option for two-step authentication will be available for added security.
* HTTPS will be used to secure a connection between the user and server.
* To prevent “brute force” hacking, after the incorrect password is entered a predetermined number of times, the account will be locked which will in turn need a DriverPass authorized employee to unlock, or a set of predetermined questions will need answered.
* If a user forgets their password, they will be able to click on the “forgot password” link which will first have the user answer a series of questions, verify via email assigned to account, or verify via text message. If all these options are unable to be used, the user will be able to contact customer service to get the account password reset.

### 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 authenticate each email/username and password login.
* The system shall confirm users access type.
* The system shall update information as DMV guidelines get updated.
* The system shall allow the user to take online exams.
* The system shall show exam progress, scores, and notes from instructors.
* The system shall offer three different packages that are available.
* The system shall allow admin to remove user accounts.
* The system shall allow users to schedule an appointment with an instructor.
* The system shall allow staff to schedule an appointment with an instructor on the user’s behalf.

### 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 will need to be via computer, tablet, mobile device, or any other internet accessible device.
* The user will interact with the interface by clicking with a mouse or via touch screen.
* There will be different views based on user access:
  + General user
    - Online test progress
    - User information
    - Driver notes
    - Special needs
    - Driver Photo
    - Student photo
    - Scheduled appointments
  + Administration
    - Same as general user for each account
    - Option to add, delete, or modify an account.

### 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?*

* That the user will have an internet accessible device.
* That the user will have access to a cell phone for two-step authentication.
* That the user has basic knowledge of the internet and web browsers.
* What the budget for the project is.

### 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 was not discussed, so we can not determine what resource we will be able to utilize and for how long.
* DMV guidelines are changed on a regular basis. If an update is missed, it can have a poor reflection on the company.
* There will be limitations for the user based on the availability of a reliable internet source.

### Gantt Chart

*A screenshot of a computer screen

Description automatically generated*