# CS 255 Business Requirements Document Template

## 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 client, DriverPass would like to develop a system for driver education. The purpose of this project is to design a system to help train new drivers to prepare them for their driving test. This system will track the training progress and feedback for each student throughout their training, allow them to take online classes, and to setup on-the-road training as well.
* This system will also allow DriverPass to update and modify course material, employee information, manage schedules, restrict access, and provide feedback.

### 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?*

* The system will allow driving students to take online practice tests, track progress, receive feedback from trainers, contain basic biographical data and allow scheduling of on-the-road training, with times and locations.
* The system will have online access and offline access to allow for users to review data even when offline, access will be granted with usernames and passwords.
* The system will track driving trainers, allow scheduling and management of the schedule (add, delete, modify, review) and will log modifications to the data, in case something goes wrong.
* The system will have different rights and roles for employees at different levels and customers to allow the exact about of system control needed for each individual/group.
* The system will run on the cloud, and the company does not want to manage technical details for the system.

### 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 will allow customers to:
  + Manage training progress.
  + View instructor feedback.
  + Provide biographical details, location, picture, etc.
  + Take practice tests and complete learning objectives.
  + Take online courses.
  + Reset Password automatically.
* The system will allow DriverPass to:
  + Manage customers.
  + Manage schedules.
  + Track modifications to schedules, and training status.
  + Provide instructor feedback to customers.
  + Notify DriverPass when DMV Criteria changes or is updated.
  + Manually reset customer/employee passwords.
  + Modify user roles based off needs or changing circumstances(i.e., employee disabled after leaving company)

## 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 cloud based.
* The system will be updated as required by DMV updates or Feature changes.
* The system will have online and offline modes.
* System interface will be a web -browser.
* System should load pages in less than 2 seconds on average internet connection.

#### 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?*

* Unix would likely be best as most servers run on Unix.
* Database need queuing/reconciliation.
* Front end runs in any widely used browser.

#### 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 have username/email and passwords.
* The users will have assigned roles and permissions.
* The system should message administrator activity logs the moment a problem is detected.
* Emails are not case sensitive, usernames are, and so are passwords.

#### 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?*

* Admins can change user roles and permissions, add, remove, etc.
* The system needs to use minimum platform dependencies or run on a VM.
* The IT admin need full access and rights, even code modification.

#### 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 correct username/email and password combination is required for login.
* Password must be minimum 8 characters long with at least one capital and lowercase letter, number, and symbol.
* After three failed attempts (in one hour), IP address will be required to wait 5, 10,15, 30, 60 minutes per attempt (in progressing order).
* Temporary password will be sent to email if requested.
* Temporary password will be required to be changed upon first login and will only be valid for 30 minutes.
* Use HTTPS with certificates and encryption for all website interaction.
* Passwords and Emails/usernames are stored hashed and salted in a secured database.

### 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 make activity report entries for each modification (including add/remove).
* The system shall track course progress of students.
* The system shall allow instructors to enter notes on students.
* The system shall track appointments.
* The system shall not allow double booking.
* The System shall forward user to third party for payment processing.
* The System shall allow students to upgrade their course package.

### 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.)?*

* Students will have the layout previously discussed. This layout will have course view options, show/update appointments, view instructor feedback, update personal information, view progress, review course updates(patch notes effectively).
* Instructors will have layout that allows schedule tracking, student selection, notes and course tracking for students, update instructor information.
* Secretary will be able to modify and update appointments and user information (including instructors), can see driver notes, can initiate password change, and reset time delay for bad attempts.
* Admins will be able to update all information, including roles and permissions and pull reports on all activity on website in excel.
* The interface will be through web browser, mobile first webpage design.

### 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 assume all users have basic computer and reading comprehension skills.
* We assume users have access to a computer, tablet, mobile device with a browser.
* We assume users will have an internet connection to download/update information.
* We assume the cloud infrastructure will have 100% uptime.
* We assume no website breaking platform updates.
* We assume third party payment processor will have 100% uptime.

### 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?*

* Website will need developer time to update each week/month/major change.
* The website will be dependent on internet connection and cloud infrastructure.
* Students (in online course) will have to be proactive in learning material.
* The system will not meet all the needs of students.
* Secretaries will be adequate to handle additional demands beyond system capabilities.

### 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, timeline

Description automatically generated*