# Business Requirements Document

## 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?*

* Based on the information acquired during the interview, we concluded that the customer, DriverPass, wishes to develop a training program for new drivers or failed pupils awaiting their driver's license. The training program system will be a web application that allows students or system users to effectively study, prepare, and test in order to successfully earn a driver's license in accordance with the regulations of the Department of Motor Vehicles (DMV). Furthermore, DriverPass would like to provide an appointment-setting service, which would be available both by phone and online.

### 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 issue DriverPass seeks to address is that too many student drivers fail their test on their first attempt. They want to improve the success rate of student drivers who fail on their first attempt. DriverPass has identified a void or lack of training and systems as such and so would like to fill it. So, they intend to develop a learning user interface that includes progress monitoring, driver notes, personal information, reservation, package/subscription, special needs, and learning modules/courses. Furthermore, DriverPass wishes to maintain a connection with the Department of Motor Vehicles (DMV) system in order to comply with their regulations. Finally, they want employee access and modification functionality in the system so that they may change their employee information and access.

### 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 web application should be cloud based for backup and security reasons.
* Must be able to run on web browsers and mobile devices.
* Implement Role-based Access Control (RBAC) for confidentially and tracking purposes.

## 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 DriverPass system should be a cloud-based, web application and run at optimal speeds with regular system updates depending on several factors like avoiding bugs, security breaches, and staying in compliance of the Department of Motor Vehicles (DMV) requirements, for instance. The system must perform well, including fast response times like another page or module is loaded immediately as soon as the job of the user is completed on one page, and efficient use of resources. System should use caching, load testing, compression, and Content Delivery Networks (CDNs) to keep the system running at the best speeds and performance.

#### 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 DriverPass system should be able to run on a web browser like Google Chrome, Mozilla Firefox, Microsoft Edge (Internet Explorer), etc.
* The web application should be web-responsive or able to adapt to screen size and controls if deployed for mobile devices as well.
* The back end of the application will demand a database for information storage and transfer of users in the system.

#### 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 distinguishment between different users will be made by their credentials, username and password.
* Input will need to be case sensitive to be unique and secure.
* The administrator of the system will get alerted different occasions to include when the user enters their credentials wrong a specific number of times, when the user tries to change or rest their password, when somebody without access tries to access confidential information, bugs, etc.

#### 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 IT Admin (Ian) will have full access to add or remove employees, update DMV guidelines, add or remove new plans/new packages.
* The non-IT team will have the ability to update modules without code.
* The users will have the ability to select their plans/packages and set appointments.

#### 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 system needs to incorporate Role-Based Access Control (RBAC) that allows certain individuals certain permissions based on their role.
* Every user, regardless of if they are an employee or student, needs to be sign in with a username and password.
* If a user enters wrong credentials, they should get a notification or error message stating so. If there are a certain number of failed attempts, the IT admin (Ian) should get notified immediately.
* In order for optimal accuracy and to control data breaches, hacks, or backups/recovery, the cloud should be responsible in handling that.

### 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 have:
  + Registration Functionality: Enable users to register into the system.
  + Login Functionality: Validate user input, more specifically, login credentials of every user.
  + Education: Have self-guided tour or tutorial built into the application to show the user how the platform works.
  + Display: Have the company logo on the application.
  + Subscription: Enable students to select and purchase their plan/package.
  + Modification: Enable students to update their information.
  + Offline Access: Enable students to access information offline.
  + Role-Based-Access: Have certain people get certain permissions based on their role in the system such employee, secretary, owner (Liam), manager (Ian), user, etc.
  + Appointment Setting: Enable students or unregistered users to make an appointment online though the platform and include contact information as well for calling.
  + Special Needs: Make the system disability friendly.
  + Driver Notes: Have a component/page called “Driver Notes” that includes lesson time, start hour, end hour, and driver’s comments.

### 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.)?*

* Every user should be able to interact with the application like on each device like mobile phones, tablets, and computers/laptops.
* The student would be able to set appointments, register, choose their plan, and check their dashboard for driver Instructor notes and their personal profile.
* The employees will be able to receive and enter student information into the system via call and coordinate driving instructors’ schedules.
* The driving instructors will have access to their personal profile along with dashboard where they enter driving session notes for the student.

### 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 DriverPass system presumes that users have access to the requisite hardware and software to access the system, such as a computer or mobile device with internet connectivity and a web browser.
* It also presumes users possess basic computer abilities, such as the ability to operate a mouse and keyboard, navigate a website, and do simple operations like uploading files or creating assignments.

### 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 budget being unknown, and the allotted time are a limitation in terms of features added or scope of the project is concerned.

### 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.*

A calendar with multiple colored boxes

Description automatically generated

**References**

Horton, W. (2012). E-learning by design. John Wiley & Sons.

Ghavamifar, A., & Javadi, M. H. (2014, May). A review of learning management systems. In 2014 5th International Conference on Information and Communication Technology for Embedded Systems (IC-ICTES) (pp. 1-6). IEEE. <https://doi.org/10.1109/ICICTES.2014.7017299>

Burgstahler, S. (2015). Universal design in higher education: From principles to practice. Harvard Education Press.

Sangrà, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-learning: An approach to the conceptual framework. The International Review of Research in Open and Distributed Learning, 13(2), 145-159. <https://doi.org/10.19173/irrodl.v13i2.1161>

O'Brien, J. A., & Marakas, G. M. (2011). Systems Analysis and Design with UML (4th ed., pp. 97-128). Wiley. <https://learning.oreilly.com/library/view/systems-analysis-and/9781118037423/09_chapter004.html?sso_link=yes&sso_link_from=SNHU>