# 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?*

* Project Purpose: Create a comprehensive, web-based system for DriverPass.
  + Client: DriverPass.
  + Objective: Address significant issues in driver training and test preparation.
  + Goal: Provide an innovative solution to enhance the effectiveness and accessibility of driver training.
  + Outcome: Increase the success rate of individuals taking driving tests at the Department of Motor Vehicles (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?*

**Problem Identification:**

DriverPass identifies a societal issue where a significant number of individuals fail their driving tests at the DMV due to inadequate training and a lack of easily accessible resources. This problem arises from the need for improved driver training and preparation. Navigating the complex regulations, rules, and practical aspects of driving poses challenges for many, resulting in increased test failures, delays in obtaining driving licenses, and frustration among aspiring drivers.

**DriverPass's Vision for a Solution:**

DriverPass envisions a comprehensive driver training system as the solution to this problem. The key components of their proposed system include:

1. **Online Classes and Practice Tests:**
   * DriverPass plans to provide online driver education classes and practice tests, aiming to equip users with the knowledge and skills needed to pass their driving tests successfully.
2. **On-the-Road Training:**
   * Complementing online resources, DriverPass aims to offer on-the-road training, allowing users to gain practical driving experience and confidence under the guidance of professional trainers.
3. **Flexible Packages:**
   * To meet diverse user needs, DriverPass offers three distinct training packages. These range from basic driving lessons to comprehensive options that include in-person lessons and access to an online class with practice tests.
4. **Reservation System:**
   * DriverPass plans to implement a reservation system, enabling users to conveniently schedule their driving lessons. This system will also track the match-up between users, trainers, times, and cars for a streamlined experience.
5. **Compliance with DMV Standards:**
   * DriverPass is committed to providing up-to-date training content aligned with the latest DMV rules, regulations, and testing requirements. The system will maintain a connection to the DMV for real-time updates on standards and policies.
6. **Security and User Roles:**
   * The system will integrate robust security features and user role management to ensure data privacy and compliance. Different employees will have varying levels of access and rights within the system.

**Additional System Features:**

DriverPass also plans to incorporate the following features:

* **Administration:**
  + The system will include an administration feature, allowing administrators to control different accounts and manage access permissions.
* **Secretary Account:**
  + A dedicated secretary account will be implemented, enabling users to take appointments by phone or from walk-in customers.
* **User Account:**
  + Students themselves will have user accounts, allowing them to schedule appointments for driving lessons.
* **Driver Accounts:**
  + Drivers will have accounts to log notes when providing students with driving lessons.

**Solution Offered:**

DriverPass aims to offer a holistic solution to the problem of inadequate driver training and preparation. By combining online classes, on-the-road training, flexible packages, a reservation system, compliance with DMV standards, and robust security features, DriverPass seeks to enhance the success rates of individuals taking driving tests while providing a convenient and comprehensive training experience.

### 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?*

**Objectives:**

1. **Automate Scheduling:**
   * Develop a feature to automate the scheduling of driving lessons, providing users with a seamless and efficient process for booking appointments.
2. **Track Users' Statuses:**
   * Implement a tracking system to monitor the status of users, allowing for real-time visibility into their progress, reservations, and any modifications made to their accounts.
3. **Track Drivers and Cars:**
   * Create a tracking mechanism for drivers and cars used in driving lessons, ensuring accurate match-ups and efficient allocation of resources.

**Goals:**

1. **Scheduling Services for Driving Lessons:**
   * Achieve the goal of automating the scheduling process, providing users with a user-friendly interface to book and manage their driving lessons.
2. **Online Classes with Material and Quizzes:**
   * Ensure the system offers online classes that encompass both educational materials and interactive quizzes, enhancing the learning experience for aspiring drivers.
3. **Comprehensive Tracking Ability:**
   * Meet the goal of robust tracking, logging all system operations to establish accountability. This includes recording who added, deleted, or modified data and when these actions occurred.
4. **Flexibility in Registration:**
   * Provide users with the flexibility to register for courses either online or through a designated agent (secretary) at the company, offering a choice in the registration process.

**System Objectives and Goals in Alignment with Client's Vision:**

* **Enhanced Accessibility:**
  + Achieved through user-friendly interfaces for online classes and practice tests.
* **Increased Pass Rates:**
  + Addressed by providing comprehensive training options and real-time updates aligned with DMV standards.
* **Flexible Training Options:**
  + Supported by the implementation of different training packages catering to varied user needs.
* **Efficient Reservation Management:**
  + Addressed through an automated scheduling system ensuring streamlined match-ups.
* **Compliance and Current Content:**
  + Achieved by facilitating real-time updates on DMV standards and regulations.
* **Robust Security:**
  + Ensured through the implementation of a role-based access control system, protecting user data and privacy.
* **Easy User Interaction:**
  + Realized through an intuitive and organized user interface, as per the client's interface sketch.
* **Efficiency and Reliability:**
  + Fulfilled through the operation of the system in a cloud-based environment, minimizing technical issues and ensuring reliability.

**Overall Aim:** By meeting these objectives and goals, DriverPass aims to revolutionize driver training and test preparation, providing an efficient, secure, and accessible platform that enhances the overall experience for aspiring drivers and contributes to improved road safety.

## 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?*

* + *Response Time:* The system should respond to user actions (e.g., scheduling, accessing materials) within a maximum of 2 seconds to ensure a smooth and efficient user experience.
  + *Concurrent Users:* The system should support a minimum of 500 concurrent users during peak times without significant degradation in 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?*

* + *Compatibility:* The system should be compatible with major web browsers, including Google Chrome, Mozilla Firefox, and Safari, to ensure accessibility for a wide range of users.

*Operating System:* The system should operate seamlessly on different operating systems, including Windows, macOS, and Linux

#### 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?*

* + *Data Accuracy:* The system should maintain a data accuracy level of 99.5% to ensure the reliability of information for scheduling, user tracking, and other functionalities.
  + *Test Scoring Precision:* The online practice tests should provide precise and accurate scoring, with a margin of error not exceeding 2%.

#### 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?*

* + *Device Adaptability:* The system should adapt its interface to various devices, including desktops, laptops, tablets, and mobile phones, ensuring an optimal user experience on each platform.
  + *Customization:* The system should allow for future customization, accommodating changes in training packages or additional features without causing disruption to existing functionalities.

#### 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?*

* + *Data Encryption:* All sensitive user data, including personal information and payment details, should be encrypted using industry-standard encryption protocols to ensure data security.
  + *Access Control:* The system should implement a role-based access control system, ensuring that each user, whether administrator, secretary, or student, has the appropriate level of access and rights.
  + *Audit Trail:* The system should maintain an audit trail, logging all significant activities such as login attempts, data modifications, and system configurations, to enhance security and accountability.
  + *Regular Security Audits:* Conduct regular security audits and vulnerability assessments to identify and address potential security risks promptly.

### 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.”*

* [Insert text]

### 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 system shall provide a user-friendly web-based interface accessible through major web browsers (Google Chrome, Mozilla Firefox, Safari) and adaptable to various devices (desktop, laptop, tablet, mobile phone).
* The system shall display an intuitive dashboard for the administrator (Liam) with options for managing accounts, accessing reports, and configuring system settings.
* The system shall offer a dedicated interface for the secretary, allowing them to efficiently handle appointments, take reservations, and manage user information, both over the phone and in person.
* The system shall provide a clear and organized interface for students (users) to schedule, modify, and cancel driving lessons, access online classes, and view their progress.
* The system shall include an interface for drivers to log notes after each driving lesson, indicating the time, feedback, and any additional comments.

### 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 system assumes that users have basic internet connectivity to access the online features and that they are familiar with standard web browsers for navigation.
* It is assumed that users, particularly the secretary, have a basic understanding of the system's interface, minimizing the need for extensive training.
* The assumption is made that the DMV's online connectivity for real-time updates and notifications is reliable and consistently available.

### 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 system may experience limitations in accommodating more than 500 concurrent users during peak times, potentially leading to reduced performance during periods of high demand.
* Resource limitations may impact the ability to implement immediate customization of training packages or introduce new features without the involvement of a developer or system analyst.
* Time constraints may limit the inclusion of certain features, such as future customization of training packages, in the initial system release, but these can be considered for future updates.
* Budget constraints may affect the extent of security measures implemented; however, the system will prioritize essential security features to protect user data and privacy.

### 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 screenshot of a computer

Description automatically generated