# CS 255 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?*

* The purpose of this project is to design and develop a comprehensive online training system for DriverPass, a driving school aimed at better preparing students for their driving tests.
* The client, DriverPass, wants the system to offer online practice exams, on-the-road training booking capabilities, and to be accessible to different types of users, including students, instructors, and administrators.

### 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 aims to address the issue of high failure rates in driving tests by offering an all-in-one platform for studying and booking practical lessons.
* The problem they wish to solve is the lack of comprehensive and accessible training tools for driving test preparation.
* The system will include a user registration and login system, a practice test module, an on-the-road training booking module, and an analytics and reporting module for administrators.

### 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?*

* Upon completion, the system should provide an efficient and user-friendly platform for driving test preparation.
* Measurable tasks include the ability to register and manage user accounts, provide and grade online practice exams, schedule on-the-road training, and generate useful performance analytics.

## Requirements

### Nonfunctional Requirements

#### 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 web-based and must be capable of handling multiple concurrent users without significant performance degradation.
* It should run quickly and smoothly, providing an almost instant response to user interactions. System updates should occur outside of peak usage times to minimize disruption.

#### 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 should be platform-independent, running on all major operating systems such as Windows, Unix, etc., and should be accessible via a web browser.
* A robust and scalable database is required to support data storage and retrieval.

#### 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 system must distinguish between different user types (students, instructors, administrators) and grant appropriate access levels.
* Input, particularly for login credentials, should be case-sensitive to enhance security.
* The system should promptly inform the admin of any operational problems.

#### 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 should allow the admin to add, remove, or modify user accounts without requiring changes in the codebase.
* It should be built to handle future platform updates smoothly.
* The IT admin needs full access to manage users, content, and monitor system performance.

#### 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 secure username and password are required for user login.
* Secure connections and data encryption methods should be implemented to protect data exchange between the client and the server.
* In case of multiple failed login attempts, the account should be temporarily locked to prevent brute force attacks.
* A password recovery option via registered email should be available if a user forgets their password.

### 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 provide a personalized dashboard for users upon login.
* The system shall present driving theory questions for practice exams and grade them.
* The system shall allow users to book on-the-road training sessions.
* The system shall provide administrators with an overview of user performance and other system analytics.

### 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 must be user-friendly and intuitive, designed with non-tech-savvy users in mind.
* Students should be able to take practice exams and book sessions, instructors should manage their schedules, and administrators should view reports and manage system content.
* The interface should be accessible via mobile and desktop browsers.

### 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?*

* It is assumed that all users have basic computer literacy and access to the internet.
* It is also assumed that the client will provide all content for the driving theory tests.

### 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 face limitations in scaling if the user base grows significantly. Additionally, the effectiveness of the system heavily depends on the quality and relevance of the content provided for the practice tests.
* Resources, time, and budget are also potential constraints that can impact the system's final design and functionality.

### Gantt Chart

A chart with multiple colored squares

Description automatically generated*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.*