# John Lopes

December 1, 2024

# CS 255 Business Requirements Document Template

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## 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 a system for DriverPass to help students prepare for driving tests by offering practice exams and on-the-road training.
* The client is DriverPass, a company focused on improving the success rate of students taking their driving tests. The system should allow students to access practice exams online and schedule on-the-road training with instructors.

### 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 wants to solve the problem of students failing their driving tests due to inadequate preparation. They aim to provide an online platform for practice exams and a system for scheduling on-the-road training sessions.
* The system will need several components, that is, an online exam platform, a scheduling tool for training sessions, user account management, and progress tracking features. The system will include both web and mobile interfaces for students and instructors.

### 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?*

* When completed, the system should improve student success rates in driving tests. It should also allow students to access practice exams that mimic the actual test format. The system should track students' progress and suggest areas for improvement. Students should be able to schedule and manage on-the-road training sessions with qualified instructors. The system should be easy to use for both students and instructors, providing a seamless experience.

## 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 should be web-based and accessible from browsers and mobile devices. It should load within 2-3 seconds to ensure smooth operation. The platform should be updated monthly to improve functionality and refresh test content.

#### 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 run on both Windows and Mac OS platforms. The back end will require a database to store user data, exam results, and training schedules. The front end should be responsive to work across web browsers and mobile devices (iOS and Android).

#### 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 handle case-insensitive user input for login and registration. The system should alert the admin in real-time if there are any failures in the backend such as database connection issues and login failures. User data should be precise and updated in real-time, especially exam results and training schedules.

#### 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 admins to add, remove, or modify user roles without needing to rewrite the code. The system should be adaptable to future platform updates and new mobile operating systems. IT admins should have the ability to monitor user accounts and manage permissions via an admin portal.

#### 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 should require a secure login like password and 2-factor authentication for students and instructors. Data exchanges between the client and server should be secured with SSL encryption. If a "brute force" attack is detected, the system should lock the account for a specified period and notify the user/admin. If a user forgets their password, the system should send a reset link to their registered email address.

### 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 during login. It will also allow students to take practice exams based on the real test content. The system shall store and track students' progress, including test scores and areas for improvement. Additionally, the system shall allow students to schedule training sessions with instructors based on availability. Furthermore, it will notify students of upcoming training sessions and exam schedules. Through the system, instructors will be able to manage their availability for training sessions. Additionally, the system shall allow administrators to manage users, training schedules, and exam content.

### 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 will feature two primary user interfaces: one designed for students and the other for instructors. Students will have the ability to access practice exams, track their progress and scores, and schedule and manage training sessions. The instructor interface will enable instructors to view and manage their training schedules and track the progress and exam results of their students. Both users will interact with the system through web browsers and mobile apps, ensuring accessibility across multiple platforms.

### 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?*

* Several assumptions are made regarding the users and technology. It is assumed that all users will have access to a reliable internet connection to fully utilize the system's features. Additionally, users are expected to possess basic computer and smartphone literacy. The system will primarily focus on the local driving test requirements but should be adaptable to other regions in the future, ensuring broader applicability.

### 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 initial deployment of the system will concentrate on car driving tests. While there are plans to expand to other types of licenses, such as for motorcycles, this functionality will be added in future releases. The first version of the system will support essential features such as basic training scheduling and exam content, with additional features, such as advanced analytics, slated for later development. Additionally, there may be limitations in time and budget that could affect the implementation of these advanced features in the initial release.

### 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.*

