# CS 255 Project 2

Lawrence Langelier Jr

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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 training system for DriverPass.
* DriverPass wants to help students pass their DMV driving tests by offering online practice tests and in-person driving lessons.
* The system should support both web and mobile access.

### 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 observed a high failure rate among driving test takers.
* Many rely only on studying written tests without practical driving experience.
* The system should let students register, book lessons, take practice tests, and track progress.
* Admins, instructors, and secretaries also need role-specific 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?*

* Enable customers to register and select from training packages.
* Allow scheduling and canceling of lessons online or by staff.
* Track instructor-car-student-time associations.
* Provide an online classroom with test content and scores.
* Log all activities and allow access control.
* Allow exporting reports and DMV updates.

## 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 shall be web-based, cloud-hosted, and support mobile devices.
* It should support at least 1,000 concurrent users.
* Updates should roll out without disrupting service.

#### 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?*

* Must run on modern browsers on Windows, macOS, Android, and iOS.
* Backend requires a secure, scalable cloud-hosted database.

#### 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 shall accurately track lesson time, test scores, and user actions.
* Input should be validated and case-sensitive where needed (e.g., passwords).
* Admins should be alerted to failed login attempts or inconsistencies.

#### 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?*

* Admin should be able to activate/deactivate packages without coding.
* The system should support modular updates.
* IT officers like Ian need full access to user and system controls.

#### 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?*

* Users must log in with credentials.
* Passwords must be encrypted.
* Reset process for forgotten passwords.
* Lockout after repeated failed login attempts.
* Secure data transmission over HTTPS.

### 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 allow users to register and select packages.
* The system shall allow lesson scheduling, modification, and cancellation.
* The system shall validate user credentials at login.
* The system shall store student, instructor, and car data.
* The system shall allow instructors to record notes and attendance.
* The system shall show test status, scores, and progress.
* The system shall generate downloadable reports.
* The system shall support password reset and user role management.
* The system shall receive and notify DMV content updates.

### 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.)?*

* Must provide dashboards for: Students, Instructors, Admins, Secretaries.
* The interface must be mobile-responsive and browser-based.
* Students: view courses, scores, schedule lessons.
* Instructors: view schedule, enter notes.
* Secretaries: register users, schedule lessons.
* Admin: oversee all users, deactivate packages.

### 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?*

* Users have access to internet-enabled devices.
* Staff are trained to use the system.
* DMV provides timely updates in a compatible format.

### 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?*

* Voice/screen-reader accessibility not included in version 1.
* Manual developer involvement needed to modify core features.
* Payment processing requires integration with third-party services.

### 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

AI-generated content may be incorrect.

A diagram of a diagram

AI-generated content may be incorrect.

A diagram of a sequence diagram

AI-generated content may be incorrect.A diagram of a process

AI-generated content may be incorrect.

A diagram of a software process

AI-generated content may be incorrect.