CS 255 Business Requirements Document

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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?

- To build a comprehensive online DriverPass system for training students for their DMV driving tests.
- Facilitate online learning through classes, practice tests, and downloadable materials.
- Offer optional on-the-road training for a complete learning experience.

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 bridge the gap in effective driver training and reduce DMV test failures.
- The system will encompass online learning modules, practice tests, downloadable resources, and optional in-person driving lessons.
- Accessible data management allows Liam to access, analyze, and work on reports from any device, online or offline.

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?

- Implement engaging online learning modules covering driving theory and practical skills.
- Develop comprehensive practice tests mirroring the format and difficulty of the DMV exam.
- Provide downloadable materials for offline study and revision.
- Integrate an optional booking system for in-person driving lessons with certified instructors.
- Enable secure and flexible data access for Liam across various devices and locations.
- Generate detailed reports and data insights for performance analysis and system improvement.

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 have low latency for smooth user experience.
- Response time for scheduling appointments should be minimal.

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 off the web, preferably over the cloud.

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?

- All user data and test results should be accurate and precise.
- The system should accurately track user progress.

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 be flexible to accommodate future changes in driving test requirements.
- It should allow for easy addition or removal of training packages.

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?

- Different user roles should be defined, with varying levels of access rights.
- Secure login mechanisms should be implemented.
- Data encryption should be employed to protect sensitive user information.

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."

User Registration and Authentication

- The system shall facilitate user registration by collecting necessary information such as first name, last name, address, phone number, state, and payment details including credit card number, expiration date, and security code.
- The system shall validate user credentials during the authentication process to ensure only authorized users can access the system.
- The system shall provide a password recovery mechanism for users to reset their passwords in case they forget them.

- **Practice Exams**
- The system shall provide users with access to a variety of practice exams covering topics relevant to the driving test.
- The system shall track user progress within practice exams, displaying which exams have been taken, current progress, scores, and completion status.
- The system shall provide feedback to users on their performance in practice exams, highlighting areas of improvement.

Scheduling Appointments

- The system shall allow users to schedule driving lessons, specifying date and time preferences.
- The system shall enable users to select from different training packages, each offering varying hours of on-the-road training and additional materials such as online classes and practice tests.
- The system shall send confirmation of scheduled appointments to users and provide relevant notifications/reminders leading up to the scheduled lesson.

Management of Driving Lessons

- The system shall assign available drivers and cars for scheduled lessons based on user preferences and availability.
- The system shall display detailed information about scheduled lessons, including date, time, assigned driver, and car details.
- The system shall allow users to cancel or modify their scheduled appointments, with appropriate notifications sent to relevant parties.

Reporting and Tracking

- The system shall track user activities within the platform, including reservations made, modifications, and cancellations.
- The system shall generate activity reports summarizing user interactions, including details of past reservations and changes made.

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 should be user-friendly and intuitive.
- Users should be able to easily navigate through the platform to access practice exams, schedule appointments, and track their progress.
- The interface should reflect DriverPass branding and incorporate the provided design sketch.

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 will have access to internet connectivity for online activities.
- Users will provide accurate information during registration and scheduling.

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 will not support offline data modification.
- The system will not provide driving lessons remotely; on-the-road training will be conducted in person.

Gantt chart


DriverPass
Jan 22-26
Jan 29-Feb 2
Feb 5-9
Feb 12-16
Feb 19-23
Feb 26-Mar 1
Mar 4-8
Mar 11-15
Mar 18-22
Mar 25-29
Apr 1-5
Apr 8-12
Apr 15-19
Apr 22-26
Apr 29-May 3
May 6-10
Collect Requirements
Build Activity Diagrams for Each Use Case
Research User Interface Designs
Build Class Diagram
Get Customer Approval
Build Interface
Link DB to Interface
Build Business Logic
Test System
Deliver System
Sign-Off Meeting