CS 255 Business Requirements Document Template

System Components and Design

Purpose

To develop a compressive online system for DriverPass, aimed at preparing new drivers for their DMV driving tests through online classes, practice tests, and on-the-road training. The system will serve as a centralized platform for managing lessons, tracking progress, and facilitating the administrative aspects of the training process. It is designed to reduce the high failure rate of driving tests by offering accessible and effective training resources

System Background

DriverPass aims to address the significant challenge many face with the high failure rate of driving tests by providing a unique and effective training solution. The proposed system will include online theoretical training modules, practical on-the-road training sessions, and an efficient reservation system for scheduling lessons. The system is intended to be accessible globally, allowing students to engage in training and practice tests online. This is complemented by physical driving lessons. Key components of the system will include a user-friendly interface for students to manage their training, role-based access control for system administrators and staff, and a backend infrastructure that supports data management, security, and communication with DMV for compliance updates.

Objectives and Goals

- Enable students to register and manage their accounts, including scheduling, modifying, and cancelling driving lessons
- Implement a role-based administrative feature for different users (System administrator, Agent/Secretary, and students) to ensure secure access to system functionalities
- Provide both online and offline data access from any device, with modifications possible only when accessed online to prevent data redundancy.
- Offer customizable driving lesson packages that DriverPass can modify or disable as needed.
- Collect essential student registration information through a secure form, including personal and payment details, and pick-up/drop-off locations.
- Feature a contact page for DriverPass, enabling direct communication between students and the company.
- Allow students to autonomously reset their passwords to enhance user convenience and security.
- Facilitate timely updates from the DMV to ensure the training content remains current and compliant

- Operate as a cloud-based solution to avoid direct management of backups and security by DriverPass, focusing on ease of use and minimal technical maintenance.
- Design an intuitive user interface that displays test progress, driver notes, lesson schedules, and allows for easy navigation and interaction by all users.
- Ensure the system is modular, scalable, and maintainable.

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 must be a web-based application accessible via common web browsers on both computers and mobile devices
- It should perform efficiently, with pages loading within 2 seconds under standard network conditions
- The system should undergo maintenance and updates during off-peak hours bi-monthly to ensure minimal disruption to users.

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 must be platform-independent, supporting Windows, macOS, Linux, iOS, and Android
- The system needs a cloud-based database such as Azure SQL for robust data management
- The system should be scalable to accommodate growth in user demand and data volume

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 provide unique identification for users through usernames and role-based access.
- The system requires case-sensitive inputs for critical data entries like passwords.
- The system should alert administrators immediately regarding operational or security issues.
- The system must conduct regular data validation checks to ensure accuracy and reliability.

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 must allow administrators to add/remove/modify user accounts without code changes.
- The system should be designed to easily adapt to and incorporate platform updates.
- The system needs to provide superuser access to IT administrators for comprehensive management
- The system must be flexible to allow for future enhancements and module integrations

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 must secure user authentication with encrypted login credentials.
- The system should employ TLS encryption for all client-server exchanges.
- The system must lock accounts after multiple consecutive failed login attempts to prevent brute force attacks.
- The system should provide an automated password reset process with secure verification steps.

Functional Requirements

- The system shall securely validate user credentials during login.
- The system shall offer a robust booking system for driving lessons and training sessions
- The system shall enable administrative staff to manage and update lesson packages, user accounts, and system reports efficiently
- The system shall integrate with the DVM and other necessary external databases for up-to-date compliance and information retrieval.

User Interface

- The system must offer an intuitive interface suitable for users with varying levels of technical proficiency.
- The system shall provide distinct functionalities tailored to the roles of students, instructors, and administrators
- The system must support responsive design for efficient use on both desktop and mobile devices.
- The system shall facilitate straightforward navigation for lesson scheduling, account management, and educational content access.

Assumptions

- The system presumes that users have basic technical skills necessary for operating the online platform
- The system assumes a reliable internet connection for user access to online functions
- The system considers that adequate user training will be conducted to ensure efficient system use.
- The system assumes reliable functionality and updates from external integration points like the DMV.

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 constraints in feature scope due to budgetary limitations.
- The system's initial feature set and integrations might be limited by time constraints affecting the development and testing phases.
- The system could have limitations in scalability and advanced feature implementation at the initial launch due to resource constraints.

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.