Southern New Hampshire University

CS 255 Business Requirements Document Template

System Components and Design

Purpose

- The DriverPass initiative aims to modernize driver education by launching an integrated, cloud-based training platform. Our goal is to bridge the gap between classroom theory and the DMV road test through a centralized hub where students can manage their entire journey, from practice exams to behind the wheel scheduling. By streamlining operations for both students and staff, we are building a scalable solution that improves passing rates and operational efficiency.

System Background

- DriverPass identified a widespread problem in society: a high number of individuals fail their DMV driving test due to inadequate preparation and limited access to quality training resources. Traditional driver education options do not always provide flexible scheduling or sufficient practice opportunities. DriverPass wants to address this problem by offering a combined solution that includes online classes, practice tests, and on the road driving instruction.
  The proposed system will allow students to register for training packages, complete online coursework, take practice exams that align with current DMV requirements, and schedule driving lessons with certified instructors. By offering a cloud-based platform accessible from any device, DriverPass aims to modernize driver education, improve student success rates, and ensure instructional content remains current with DMV rule changes. The system will include user account management, scheduling and reservation tools, online testing modules, lesson tracking with instructor notes, and administrative reporting capabilities.

Objectives and Goals

- **Provide online access to training materials.**
  The system shall allow students to log in and access online classes, practice tests, and test progress results, including scores and completion status
- **Support appointment scheduling and management.**
  The system shall allow students and office staff to create, modify and cancel driving lesson reservations, including selecting dates, times, drivers, and vehicles.
- **Manage training packages.**
  The system shall provide three predefined training packages and allow authorized users to disable a package to prevent future student registrations (if fully booked)
- **Store and manage student registration information.**
  The system shall securely store student registration data, including name, address, phone number, state, payment information and pickup/drop off location.
- **Record driver lesson details and instructor notes**
  The system shall allow authorized staff to record lesson start and end times and store instructor comments associated with each driving lesson.

- **Manage multiple user roles securely.**
  The system shall support different user roles (student, secretary, IT officer, and owner) with role-based access controls to ensure appropriate permissions.
- **Track and audit system activity**.
  The system shall log and track all reservation and record changes, including who made the change and when, and allow administrators to generate activity reports.
- **Maintain DMV compliance.**
  The system shall receive updates related to DMV rules, policies, and practice test content and notify administrators when updates occur.
- **Ensure cloud-based accessibility and data security**
  The system shall operate as a cloud hosted, web-based application accessible from desktop and mobile devices while ensuring secure data storage and backup.

  These objectives ensure the system meets DriverPass's operational needs while supporting future growth and system enhancements.

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 shall operate as a web-based application accessible through standard web browsers.
- The system shall support simultaneous access by students, instructors, and administrators without performance degradation.
- The system shall load pages and process user requests within a reasonable response time to ensure usability
- The system shall support regular updates to practice test content as DMV requirements change.

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 shall be hosted on a cloud-based platform to reduce infrastructure and maintenance responsibilities for DriverPass.
- The system shall be compatible with modern web browsers on both desktop and mobile devices.
- The system shall use a backend database to store user accounts, scheduling data, lesson records, and test results.
- The system shall not require local software installation for end users.

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 uniquely identify users through individual login credentials.
- The system shall accurately store and display student information, lesson schedules, and test results.
- The system shall track and record all changes to reservations and records, including the user who made the change and the time it occurred.
- The system shall notify administrators when critical errors or data inconsistencies occur.

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 shall allow authorized administrators to add, modify, or disable user accounts without modifying source code.
- The system shall allow authorized users to disable training packages without impacting existing student records.
- The system shall support updates to DMV related content without requiring system downtime.
- The system shall provide IT administrators with access needed to manage accounts, permissions, and system maintenance.

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 shall require users to authenticate with a username and password to access the system.
- The system shall support role-based access control to restrict functionality based on user roles.
- The system shall provide a password recovery mechanism for users who forget their credentials.
- The system shall securely store sensitive user and payment information.
- The system shall allow IT administrators to disable or lock accounts in response to suspicious activity or unauthorized access attempts.

Functional Requirements

- The system shall allow students to create and manage user accounts.
- The system shall allow students to schedule, modify, and cancel driving lesson appointments.
- The system shall allow administrative staff to create, modify, and cancel appointments on behalf of students.
- The system shall allow administrators to assign drivers and vehicles to schedule lessons.
- The system shall allow students to access online classes and take practice tests.
- The system shall display practice tests status, scores, and completion results.
- The system shall allow instructors to record lesson start times, end times, and instructional notes.
- The system shall generate activity and audit reports for administrative review.
- The system shall allow authorized users to manage training packages.

User Interface

- The system shall provide a web-based user interface accessible via desktop and mobile devices.
- The interface shall allow students to register, log in, schedule lessons, access learning materials, and view progress.
- The interface shall allow administrators to manage student accounts, appointments, and reports.
- The interface shall allow instructors to view lesson schedules and enter lesson notes.
- The interface shall present information in a clear, organized, and user-friendly manner.

Assumptions

- Users will have reliable internet access when using the system.
- Students and staff will access the system using modern web browsers.
- Payment processing will be handled through a secure third-party service.
- DMV updates will be available through an external notification or data source.
- Staff will receive basic training on system use.

Limitations

- The system will not support offline data modification to prevent data inconsistency.
- Major feature enhancements or package customization will require developer involvement.
- The initial system release will be limited to the features identified in the interview transcript.
- Project timelines and system functionality are constrained by available time and budget.

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Gantt Chart