

Ava Lindgren - CS 255 Business Requirements Document

System Components and Design

Purpose

- The purpose of this project is to design a web-based system for DriverPass that supports driver education and training
- The client, DriverPass, wants a system that helps students better prepare for DMV driving tests through the following:
 - Online practice exams
 - Online instructional content
 - On the road driving lesson scheduling
- The system must support multiple user roles, including customers, administrative staff, IT staff, and management
- The system should centralize scheduling, learning content, reporting, and user management

System Background

- DriverPass wants a system that does the following:
 - Provides online classes and practice tests
 - Allows students to schedule in-car driving lessons
 - Tracks student progress and lesson history
- DriverPass wants to fix the problem where over 65% of students fail DMV driving tests due to insufficient preparation
- Components needed for the system include:
 - User account management
 - Online testing and progress tracking
 - Lesson scheduling and reservation management
 - Package management
 - Reporting and audit tracking
 - Cloud-based hosting and storage

Objectives and Goals

- This system should be able to:
 - Enable students to register, log in, and manage their accounts online
 - Allow students and staff to schedule, modify, and cancel driving lesson appointments
 - Provide online practice exams aligned with current DMV requirements
 - Track lesson details, instructor comments, and test results
 - Support role-based access for management, IT staff, secretaries, and customers
 - Maintain up to date DMV rules and practice questions through system updates
 - Generate reports for management review and accountability

Requirements

Nonfunctional Requirements

Performance Requirements

- The system shall be web-based and accessible via browsers on desktop and mobile devices
- The system shall be hosted in the cloud to support remote access and reduce local maintenance
- The system shall respond to user actions within an acceptable time:
 - Like load pages within a few seconds
- The system shall support periodic updates when DMV rules or test content change
- The system shall allow users to view data offline but only modify data while online

Platform Constraints

- The system shall run on modern web browsers:
 - Google Chrome, Microsoft Edge, Firefox, Safari
- The system shall support Windows, macOS, and mobile operating systems
- Cloud services shall handle backups, security, and availability
- The back end shall use a database to store user accounts, lessons, test results, and audit logs

Accuracy and Precision

- The system shall uniquely identify users by a secure username or email
- The system shall validate all user input fields to prevent incorrect/ incomplete data
- The system shall accurately log who created, modified, or canceled reservations
- The system shall process sensitive data accurately and securely
- The system shall notify administrators of system errors or failed transactions

Adaptability

- The system shall allow administrators to enable or disable training packages without code changes
- The system shall support adding/ removing users through administrative controls
- The system shall adapt to browser and platform updates with minimal disruption
- The IT administrator shall have full access to:
 - Password resets
 - Modifying system settings
 - Disabling accounts

Security

- The system shall require the authentication of usernames and passwords for users
- The system shall encrypt data transmitted between the client and server
- The system shall enforce role-based access control

- The system shall lock and/or flag accounts after multiple failed login attempts, and in case of brute force hacking
- The system shall allow users to automatically reset forgotten passwords
- The system shall securely store sensitive data such as payment information

Functional Requirements

- The system shall allow customers to create and manage user accounts
- The system shall assign lessons to specific drivers, vehicles, dates, and times
- The system shall allow customers to schedule, cancel, and modify driving lesson appointments
- The system shall support predefined training packages:
 - Six-hour package
 - Eight-hour package
 - Twelve-hour package
- The system shall track lesson duration in two-hour increments
- The system shall provide online practice tests and track test progress
- The system shall display test status, score, time taken, and completion status
- The system shall store and display driver comments for each lesson
- The system shall allow administrative staff to register customers over the phone or in person
- The system shall generate activity and audit reports
- The system shall notify users when DMV-related content is updated

User Interface

- The system shall provide a web-based interface accessible via desktop and mobile browsers
- The interface shall display tables and forms like the client's provided sketches
- Secretaries shall be able to:
 - Create customer accounts
 - Schedule and modify appointments
- Management shall be able to:
 - View reports
 - Track activity logs
- Customers shall be able to:
 - Register and login
 - Schedule and manage lessons
 - View test progress
 - View lesson notes and comments
- IT administrators shall be able to:
 - Manage users and permissions
 - Reset passwords
 - Disable accounts

Assumptions

- Users have reliable internet access to fully interact with the system
- Users have basic computer or mobile device proficiency
- Payment processing will be handled by a secure third-party service
- DMV updates will be available through a compatible data source or notification method
- System users will access the platform primarily through web browsers

Limitations

- The system depends on external DMV updates for accuracy of test content
- System scalability is constrained by the selected cloud service plan
- Custom package creation by non-technical users is not supported in the initial release
- Time and budget constraints may limit advanced customization
- Offline access is limited to viewing data only

Gantt Chart

