Southern
New Hampshire
University

CS-255 Business Requirements Document

System Components and Design

Purpose
- DriverPass wants a system that integrates online practice tests with the scheduling and management of on-the-road driving lessons to better prepare students for their driving exams.
- The system should streamline business operations, provide training tools for customers, and manage user data effectively.

System Background
- DriverPass aims to address the high failure rate of driving test applicants by providing a comprehensive online training platform.
- DriverPass wants to take advantage of the lack of integrated tools that offer both written practice (online tests) and practical application (on-the-road lessons) along with efficient management of these services.
- Key components include: User authentication and management (for customers and staff), course/package management, online testing module and progress tracking, a scheduling system for lessons, a customer information database, reporting features, and an interface for receiving updates from the DMV.

Objectives and Goals
- Provide customers with access to online practice driving tests and performance/lesson tracking.
- Enable customers or DriverPass staff to schedule, view, and manage on-the-road driving lessons online.
- Efficiently manage company resources, including 10 cars and driving instructors, for scheduling purposes.
- Securely store and manage customer information, including personal details, contact information, and potentially payment details.
- Implement role-based access control for different user types (Customer, Instructor, Secretary, Admin/IT).
- Provide administrative tools for managing users, packages, and viewing system activity/reports.
- Ensure the system stays current with DMV rules and sample questions.
- Allow data export for reporting and analysis.
- Provide a user-friendly interface accessible via web browsers on both computers and mobile devices.
- Track changes made to reservations and other key data for auditing purposes.

Requirements

Nonfunctional Requirements

Performance Requirements
- The system must be web-based and accessible from standard web browsers on computers and mobile devices.
- The system should provide reasonably fast response times for user interactions.
- The system should reliably handle concurrent users (like multiple customers taking tests or booking lessons simultaneously).
- Updates regarding DMV rules/questions should be reflected in the system promptly after being received/processed.

Platform Constraints
- The system should preferably run on a cloud-based infrastructure to minimize technical management for DriverPass.
- A back-end database is required to store all system data. The specific database system is not currently defined but must support the required functionality and scalability.
- The user-facing component is primarily web-based, implying general compatibility with major operating systems via web browsers.

Accuracy and Precision
- User accounts must be uniquely identifiable. Login credentials will be used for distinction.
- Input validation is required for forms to ensure data integrity.
- The scheduling system must reflect the availability of instructors and cars to prevent double-booking.
- Test scoring and progress tracking must be accurate.
- The system should log errors or significant events and potentially notify the IT admin.

Adaptability
- Administrators must be able to add, remove, and modify user accounts and permissions without code changes.
- The system should ideally allow non-developers to add/remove/modify driving package components or modules.
- The system design should anticipate potential platform updates and aim for resilience.
- The IT admin requires full system access for maintenance, user management, and troubleshooting.

Security

- User authentication is required via secure login.
- Data transmission between the client and server should be encrypted.
- Sensitive data, particularly credit card information, must be handled securely.
- A password reset mechanism must be available for users who forget their passwords.
- Consideration should be given to protection against common web vulnerabilities and brute-force login attempts.
- Role-based system access must be implemented to ensure users can only access functions and data relevant to their role.

Functional Requirements

- Allow users to register for an account.
- Authenticate users based on their role (Customer, Secretary, Admin, Instructor).
- Allow customers to view available driving packages.
- Allow customers and the secretary to schedule driving lessons based on availability.
- Track the schedule of driving lessons, assigned instructors, and cars.
- Provide customers access to online practice tests.
- Record and display customer progress on practice tests (status, score, time taken).
- Allow instructors to record notes related to driving lessons.
- Store customer information (name, address, contact, photo, special needs).
- Store driver/instructor information (name, photo).
- Allow administrators to manage user accounts (create, modify, disable).
- Allow administrators to manage driving packages (view, modify, disable).
- Provide a mechanism for updating content based on DMV updates.
- Generate reports on user activity, test results, and schedules.
- Allow data export to formats like CSV or Excel.
- Provide password reset functionality for users.
- Log significant actions and identify the user responsible.
- Provide a "Contact Us" page/functionality.
- Handle pickup/drop-off location information for lessons.

User Interface

- The user interface should be intuitive and easy to navigate for all user roles.
- It needs to be responsive and function correctly on various screen sizes.
- **Key UI components:**
  - Login/Registration Area
  - Customer Dashboard: View profile, schedule, test progress, package info.
  - Online Test Area: Take tests, view results.
  - Scheduling Interface: View available slots, book/cancel lessons.
  - Admin Panel: User management, package management, reporting, system settings.
  - Secretary View: Customer lookup, scheduling tool, registration form input.
  - Instructor View: View assigned schedule, access student notes section.
  - Information Display: Customer details, driver details, photos, special needs.
  - Driver Notes Log: Table format (Lesson Time, Start Hour, End Hour, Comments).

Assumptions

- DriverPass employees and Customers have access to the internet and compatible devices/browsers.
- DriverPass will provide the initial content for practice tests and DMV rules.
- A mechanism exists (or will be defined) for obtaining DMV updates.
- Payment processing will be handled either through integration with a third-party gateway or via procedures outside the scope of this system's initial design.
- The scope defined in the requirements is agreed upon for the initial release.

Limitations

- The initial version may not include the feature for non-developers to customize package modules as this is identified as a future enhancement.
- Offline access is not a primary requirement based on the discussion and may be limited or non-existent.
- The system does not cover aspects like vehicle maintenance tracking, instructor payroll, or financial accounting beyond basic transaction logging.
- The project operates under the time constraints defined in the schedule.
- Budgetary constraints may limit the scope or choice of technologies.
- Dependency on external factors like DMV update availability and format.

Gantt Chart

TASK	JAN	FEB	MAR	APR	MAY
Collect Requirements	1/22 - 2/4				
Create Use Case Diagrams		2/11 - 2/18			
Build Activity Diagrams		2/15 - 3/9			
Research UI Designs		2/27 - 3/7			
Build Class Diagram		3/1 - 3/9			
Get Customer Approval		3/10 - 3/11			
Build Interface		3/12 - 3/24			
Link DB To Interface			3/24 - 4/3		
Build Business Logic			4/5 - 4/27		
Test System				4/27 - 5/7	
Deliver System				5/8 - 5/9	
Sign-off Meeting				5/9 - 5/10	