# CS 255 Business Requirements Document Version Two - Melissa Chessa

## 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?*

* [The purpose of the project is to develop a secure, scalable, cloud-based system for DriverPass, a company that is aiming to improve driver test pass rates by offering online classes, practice tests, and on-the-road training. DriverPass is the client represented by its owner, Liam, and IT officer, Ian. They want a system that is accessible online, allows lesson reservations, supports different training packages, and maintains detailed records of customer progress and system activity. The system should allow users to interact with it through a secure web interface while enabling the business to scale, manage user roles, and maintain compliance with DMV regulations.

The system will include secure authentication, encrypted data handling, and role-based access aligned with RBAC principles (Valacich and George, 2020). It will also support auto-assignment algorithms for instructors and offer administrative override options for managing availability and emergencies.]

### 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 is responding to a common problem; many individuals are failing their DMV driving tests due to inadequate preparation. To solve this, the company wants to offer a flexible, structured driver training program that blends online and in-person experiences. The system will need to handle scheduling for driving lessons, access to digital training content, and user management for students, instructors, and administrators. It must also allow users to register for services either online or through staff-assisted methods like phone calls or in-person scheduling. Additionally, DriverPass wants the system to track appointments, manage different user permissions, integrate secure payment processing, and maintain up-to-date training materials that align with DMV standards. Liam also highlighted the importance of system flexibility, including the ability to disable training packages when needed, and secure offline data access through downloadable reports.

The platform should support concurrent user sessions, provide administrative filtering tools, and include built-in validation for lesson scheduling conflicts. All training material should be version-controlled and timestamped to ensure DMV alignment (Lucidchart, 2023)]

### 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?*

* [The completed system should provide clear, measurable functionality that supports both the customer and the business staff. Students should be able to register, log in, reset their passwords, and schedule or cancel their driving lessons through the web interface. The system must offer three distinct training packages, each with varying levels of service, and display the student’s lesson history, test progress, and feedback from the instructors. For administrators and staff, the system should include tools for managing appointments, assigning instructors and vehicles, and accessing logs of user actions such as who created, modified, or canceled a reservation. The IT admin should have full system access, including the ability to manage user accounts and security settings. The system should also be capable of displaying DMV updates and notifying staff of changes to training content or test requirements. Ultimately, the goal is to build a reliable, secure, and flexible system that improves user experience while supporting the growth and operational efficiencies of DriverPass.

Reports should be exportable in PDF or CSV format and printable. The system should include visual analytics dashboards for tracking student progress, instructor workload and DMV compliance metrics (Luciudchart, n.d.; WAI, 2025)]

## 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 web-based and cloud-hosted to ensure access from any computer or mobile device with an internet connection. While the client wants limited offline capabilities such as downloading reports for later viewing, the system will only allow data modifications while online to avoid duplication or inconsistencies. Performance-wise, the system should respond to user actions within a few seconds with a maximum acceptable delay of 10 seconds for loading pages, retrieving data, or processing form submissions. Updates to the system, such as new content or fixes, should be scheduled every week. Aligning with the business's desire for our system that can stay as current with DMV content and offers reliable functionality.]

#### 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 DriverPass will run on all modern web browsers and support both desktop and mobile platforms, making it compatible with Windows, Mac OS, iOS and Android operating systems. There is no mention of support for legacy systems or proprietary platforms, so cross-browser functionality will be prioritized. On the back end, the system will require a secure cloud-based database to store user data, scheduling information, payment details and progress tracking. This database should support secure API integration to allow for updates from the DMV or third-party services. No physical server management will be required by DriverPass staff, as they prefer the hosting provider to handle all maintenance, backup, and security responsibilities.]

#### 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?*

* [To distinguish between different users, the system will implement role-based access control (RBAC) tied two individual login credentials. User inputs such as username, emails and passwords will be case sensitive to ensure system integrity and security. The system will validate all form submissions for accuracy and completeness before processing. Administrators will be notified of any major system errors or failed login attempts, particularly in scenarios that indicate a breach or a failed data operation. For example, if a driver or customer fails to be assigned due to assistant conflict of overbooking, the system will alert the staff in real time.]

#### 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 support administrative tools for managing user accounts, including adding, modifying, or disabling users without requiring changes to the code base. While future development to add or remove training packages may require developer involvement. The client has requested that they be able to disable existing packages without technical support. The IT administrator must have full system access, including the ability to reset passwords, lock account,s and manage user permissions. In terms of platform updates, the system should be built using scalable technologies that can adapt to Future browser or device changes with minimal intervention.]

#### 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?*

* [User login will require a valid username and password combination, with optional multi-factor authentication considered for future implementation. All communication between the client and the server must be encrypted using SSL/TLS protocols. In the event of multiple failed login attempts (e.g., three incorrect passwords), the system will lock the account and require manual or automated password recovery. Customers must be able to reset their passwords automatically via email, while it administrators should retain full control over employee account access. Sensitive data such as credit card numbers and user credentials must be securely stored and handled in compliance with current data protection standards.]

### 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.”*

* The system shall validate user credentials when logging in.
* The system shall allow users to reset their passwords automatically via email.
* The system shall allow customers to register for an online account.
* This system shall allow customers to schedule, cancel, and modify driving lesson appointments.
* The system shall store and manage customer information, including name, address, phone number, credit card details, and pick-up and drop-off locations.
* The system shall allow the secretary to create appointments on behalf of customers who call or visit in person.
* This system shall assign each scheduled appointment to a specific driver, vehicle date, and time.
* The system shall track lesson completion and store driver comments for each session.
* The system shall provide customers with access to practice tests in online course materials, depending on their selected package.
* The system shall track customer progress through practice tests, showing test name, time taken, score, and status (e.g., not taken, in progress, failed, passed).
* The system shall allow administrators to enable or disable training packages from public view.
* The system shall generate printable activity reports showing who created, modified or canceled appointments.
* The system shall log and timestamp all user activity for audit purposes.
* The system shall notify administrators when DMV content is updated.
* The system shall provide role-based access control for different users. (owner, IT, admin secretary, student, instructor)
* The system shall allow IT administrators to add, modify, disable, and delete user accounts.
* The system shall export selected data to Excel-compatible formats for offline review.

### 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 user interface will serve multiple roles and must be intuitive, accessible, and responsive across desktop and mobile platforms. For students, the interface must allow them to register for an account login, view their upcoming lessons, access their online courses and practice exams, and view test progress. A progress tracker should display the name of the test taken, their completion, staff scores, and time spent. Students must also be able to view and modify their personal information, manage appointments, and contact support if needed.
* For employees such as the secretary, the interface must allow for quick entry of customer data and appointment creation. It should include search and filtering tools to locate customer records in the lesson history efficiently. Drivers will use the system to log comments after each session, which should be displayed to students and available to administrators. The administrator dashboard must offer full visibility into user activity, system logs, and package availability. Additionally, there should be a mechanism to toggle specific training packages on and off without removing them entirely.
* All users will access the system through a secure browser-based interface, which must be optimized for both PC and mobile use. Key designed priorities include clarity, ease of navigation, and accessibility features such as screen reader compatibility and alternative input options. The look and feel of the system should reflect the sketch and design preferences shared by Liam, focusing on claim professional layout that fully visually tracks, training, and lesson data.]

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### 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?*

* [In designing the DriverPass system, several assumptions were made based on the available information from the client interview. It is assumed that all users, including customers, staff, and administrators, will have access to modern devices with a stable internet connection. It is also assumed that the users have basic technical skills and can navigate a web-based platform without needing detailed instructions. Since no specific payment processor was mentioned is assumed the system will use a standard third-party service for handling credit card transactions securely. Additionally, while the client requested updates from the DMV is assumed that the DMV provides accessible APIs or data feeds for transmitting updated rules and content. Lastly, although offline data access was mentioned, it is assumed that only limited functionality will be available offline and all data modification actions will require an online connection.]

### 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 current system design comes with several limitations due to budget, time and technical constraints. First, even though the client had expressed interest in enabling or disabling training packages. The ability to be able to fully add or remove packages easily without developer assistance is not supported in this phase of the project. This kind of flexibility should be conserved for a future system release. Additionally, offline functionality will be limited to downloading and viewing certain data. Full offline interaction is not possible without risking data duplication or integrity issues. Time is also a constraint as the project follows a tight schedule from January through May, leaving limited room for scope, changes or delays. Budget constraints were not specified, but based on the client's concern about minimizing technical management, it is assumed that system hosting and maintenance will be outsourced to a third-party cloud provider. Also, integration with external systems like the DMV relies on the availability and reliability of their update mechanisms, which the project team cannot fully control.

Language translations, automated instructor reassignment, and full offline training access are excluded from this version. Role approval workflows, such as for instructors or IT admins, will require admin review (Tpoint Tech, 2025) ]

### 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.*

A screenshot of a project

AI-generated content may be incorrect.

References:

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Valacich, J. S., & George, J. F. (2020). Modern systems analysis and design (9th ed.). Pearson.

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