# CS 255 Business Requirements Document

**Christopher Clark**

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## 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 client, DriverPass, has requested a system designed for online driver education training.
* The purpose of this project is to satisfy the client requirements and expectations and provide completed deliverables as outlined in this document. This project has been initiated to plan, design, and build the DriverPass web-based training system.
* DriverPass is intended to fill a specific market requirement for more substantive driver education and training. Given market research, there is a need for better driver education.
* This project will provide a system needed to fulfill the training requirements for driver education by allowing students to study and test online. The students will need the ability to schedule testing and training online. The client has requested the system be cloud based with online and offline access.

**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 an innovative company made up of the company owner, an IT manager, company secretary and ten driving instructors.
* Most students fail driver testing. This is likely due to the nature of currently available options for students. DriverPass intends to provide higher quality education and training options for students.
* DriverPass has performed market research indicating a need for these services. Their intent is to fill this need by providing better training options in the marketplace.
* The DriverPass system should able able to satisfy the training requirements for driver education. There should be consistent and reliable access for students and system managers. A user-friendly interface with easy access to system information will be required.
* The DriverPass system will be web-based and hosted by a cloud service. This should ensure more reliable and convenient access for both the client and its customers.

### 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 main object of this project is to provide a web-based solution to the needs for the client, DriverPass.
* A system will be developed to provide online driver education training, testing, and scheduling.
* The students will have choices provided for training in separate packages developed by the client. The system managers will have the capability to update, edit, or disable the packages as needs change.
* The system will be connected to the local DMV network to access the most current training and testing requirements for the student.
* This system will be cloud-based and hosted online. All data storage, security, and recovery will be handled by the cloud service provider.
* System access will be available online with limited offline access for system users. Data manipulation will be protected and only available when the user has online access.
* System managers will be provided mobile device access with database mirroring for offline access. This should be limited to documents and system reports and should be a selectable option to best manage device memory requirements.
* System managers shall include the company owner, IT manager, and the company secretary. The company secretary should have more limited access as determined by management. There will be measured access granted for other company employees, i.e., driving instructors, as deemed necessary by the system managers.
* This system will grant permissions as designated by DriverPass management. The company owner and IT manager will have full access. Students will have the ability to create new accounts and edit personal settings and passwords as required.
* System managers will have tracking capability to allow monitoring of system changes and data usage by employees and students.
* System managers will be able to add and delete customer accounts as needed.
* Students will be able to schedule training and make reservations with the ability to edit those choices when necessary. Testing will also occur online.
* Students will have access to testing progress and completion. There will be account information for students with the ability to edit as needed.
* Needs for system updates and changes will be discussed at a later time. This project will be implemented to satisfy the current needs of the client.

## Requirements

### Nonfunctional Requirements

*In this section, you will detail the different nonfunctional requirements for the DriverPass system. You will need to think about the different things that the system needs to function properly.*

#### 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 be available online with mobile device access.
* Some instances of the system shall be available offline after user download.
* The system should operate with minimal downtime. User access is critical given certain deadline requirements.
* There should be little to no system lag. The system should provide a fast response to user input. The system should be able to handle high workloads based on suer activity. Multiple users will be supported at any given time.

#### 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 operate on multiple platforms including Windows, Android, IOS, and Linux based systems. Other platforms can be supported at the client’s request.
* The system shall run on a cloud-based platform.
* The system shall provide a database for customer information and history. Another database for testing and documents shall be provided by the cloud service.
* The system shall provide for administrative support to the client with the ability to create, read, update, and delete (CRUD) system offerings and user data.

#### 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 provide unique accounts for each user. User data will include the user’s name, address, phone number, state, and credit card number information. All entries will be case sensitive.
* The system shall provide a spell check and address confirmation for user entries.
* The user shall be able to store multiple forms of payment is desired.
* The system shall alert users and administrators via error checking. This will occur when more than three unsuccessful login attempts are made. This will also occur when there is an issue with user payment information.
* The system shall notify the administrators of any account changes made by users.
* The system shall notify the administrators of any new account creation or deletion requests by users.

#### 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 the user to create a new account.
* The system shall allow the user to modify their account as needed. The user will have the ability to modify their name, address, phone, email, and credit card information.
* The system shall require the user to verify their account and identity for registration and changes to accounts.
* The system will verify user identity via email or SMS text with code verification.
* The system shall notify users of any updates to the client program when platform updates occur.
* System updates will be rolled out with notifications to the users via email. Updates will be automatic based on user settings.
* System administrators will have CRUD capabilities.
* System administrators will receive notifications of user account creation, update, and deletion request. Users will have to request account deletion from the administrators.

#### 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 dual factor verification for user login.
* The system shall provide the user with a verification code for validation of user when login attempts fail, user changes account information, and when the user first registers an account.
* The system shall provide for RSA client-server encryption for secure connections.
* The system shall provide for a brute force protection service to scan for brute force applications.
* The system shall provide for account lock-out when the user login fails more than three attempts.
* The system shall require users to contact system administrators for account lock-out. User verification will be require to unlock all user accounts.
* The system will provide a “reset password” feature for users that have forgotten their passwords and have not reached the lock-out limit for failed attempts.

### 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 provide scheduling/calendar resources.
* The system shall provide access to student services.
* The system shall provide a means for assignment grade reporting.
* The system shall require user account verification.
* The system shall provide user account administrative services.
* The system shall provide user assignment information and access.

### 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 system shall provide the user with a client-side user interface (UI).
* The UI shall operate on multiple platforms as determined by the client.
* The UI shall provide the user with the ability to register a new account, login, and reset password.
* The UI will give the user the ability to register for online courses and testing services.
* The UI will give the user the ability to schedule driver training.
* The UI will provide the user with a payment system for chosen courses.
* The UI will provide the user with an account page. The user will be able to save personal information and payment options in a secure environment.
* The UI will provide the user with the ability to contact system administrators for help. There will be a FAQs page for user interaction.

### 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?*

* The system users will be driving students and instructors.
* The system shall link to DMV resources and databases.
* Users will access the system using the platforms mentioned previously.
* Users will be operating the latest versions of the platforms and devices they use to access the system.

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### 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 shall not provide for CRUD tools when accessed offline.
* The system shall not provide for non-developer changes to system modules.
* The system will not be hosted locally. Reliability and security will be based on a third-party service provider.

### 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 picture containing table

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