# CS 255 Business Requirements Document

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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, requires a system to help users with passing their written driving tests.
* Should also include on-the-road training programs

### 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?*

* Client feels too many people fail their driving tests because of a lack of practice materials
* The solution they have is a secure system where users can reserve different tiers of driver training packages based on need
* Practice tests would accurately reflect tests used by DMV by alerting system to material updates
* Multi-level account system with restrictions for lower-level users
* Track user modifications to the system
* IT can modify and update the system
* Users and secretary can make appointments and book reservations
* Match cars in inventory to drivers and customers
* Offer specific packages for customers, with admin ability to disable packages
* Customer registration of personal info and pickup/drop-off locations
* Customer ability to change/reset forgotten password

### 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?*

* Access to data on and offline
* Easy access to logs of changes made to system
* Useable on computer or mobile
* Secure, multi-level accounts
* User status tracking
* Driver tracking and database
* Status of cars used for training
* Records access by DMV and Trainers/Drivers
* Reservation and appointment system accessible by online customers and secretary

## 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?*

* Web-based (preferably cloud-based)
* Fast, safe connection to users for secure personal information transfers
* Updates regularly, but necessary when DMV updates testing requirements and material

#### 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 itself should run on Unix for its cloud-based software
* Should be accessible on all major web applications (Firefox, Chrome, Edge, etc.)
* User, driver, appointment, and changelog databases should be included

#### 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?*

* Users distinguished by personal email and password
* Case-sensitive input allows for more password combinations and security
* If a user cannot remember their password or attempt to login too many times with a bad password admins should be notified

#### 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?*

* User access and profile changes should be possible without code changes
  + User should be able to change/update password, boss should be able to reset or block account access
* System should be updated to work with any new platform releases quickly
* IT should be able to make these updates and modifications as they are needed

#### 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?*

* A recognized user email and password needed for login
* A secure connection can be made with third-party security software monitoring the system and connections
* Brute-force hacking should lock the account after 3 failed attempts (3 strikes)
  + IT can unlock account with user verification and pass reset
* If a user forgets pass, send email to user email for a link to update to new pass

### 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 authenticate users when signing in
* The system shall display the user’s student page with current test progress, driver lesson notes, photos of both, and personal information/special needs of the student
* The system shall intake requests for appointment reservations from users or the secretary and compare them to the database of appointments
* The system shall track users and create a log of changes made by them easily accessed by the boss account
* The system shall send notification of DMV updates to system admins
* The system shall create new users through an input form
* The system shall display certain package options and can disable individual options from the boss account

### 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.)?*

* Interface is made up of a user page, input form, company contact page, and student contact page
  + The user page needs to display test progress, user information, driver notes, special needs of the user, and a photo of the user and the driver assigned to them
  + The input form needs to display fields for entering a new user’s personal information
  + The contact pages should display ways to contact the company and a way to contact a student
* The users of this interface are the boss, the secretary, the IT admin, drivers, and any students
  + The boss should be able to access the entire system, on a mobile or desktop device, and on or off-line
  + The IT admin should be able to access the whole system for account issues, updates, and maintenance work, on mobile and desktop platforms, and online
  + The secretary should be able to access the input form and user pages to add new users and appointments, on desktop, and online
  + The drivers should be able to access the student’s profiles that are assigned to them to leave comments on lessons, on desktop or mobile, and online
  + The students should have access to the input form to create an account and their specific user page for appointment information, on desktop or mobile, and online

### 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?*

* Minimum running requirements for system available at company
* All employees can access system and have basic knowledge of computer/browser use
* All employees have secure accounts and understand safe data practices
* Secure connection to DMV allowed and is possible
* Scalable system for future additions and increased userbase

### 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?*

* Cannot be updated/changes will not take hold while accessed off-line
* Packages and their descriptions can only be updated in the code, not on the fly
* Development is limited to current web browser capabilities and software compatible with web applications
* Multiple months of build time, possibly longer with revision requests
* New company, smaller budget than established ones

### 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.*

Chart, timeline

Description automatically generated