# CS 255 Business Requirements for DriverPass

## 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 believes they’ve found a hole in the market that they hope to fill by providing an online application for student drivers
* The client would like the online application to be a source where students could take online practice tests and book on-the-road training to prepare for their driving exams.

### 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 would like the system to provide both online and offline capabilities
  + Data won’t be modified/updated offline but it should be able to be downloaded while online and accessible offline
* DriverPass needs the system to be able to handle different roles and permissions
  + Admin needs to be able to reset passwords or block access for any account
* DriverPass needs the system to handle driving lesson reservations and send updates for those reservations to the appropriate channels
  + The reservation should include date, time and the customer information of the account that made the reservation
  + In the reservation form, the customer should be able to choose one of the packages DriverPass offers
  + DriverPass should be able to disable a package if they no longer want reservations made for a certain one
  + If the customer schedules over the phone, DriverPass needs to be able to input this information for the customer including their first name, last name, address, phone number, state, and their credit card number, expiration date, and security code.
  + The reservation form should also prompt the user for pick-up and drop-off locations
* DriverPass would like the system to connect to the DMV’s system so they can receive notifications whenever there are updates to any new rules, policies, or sample questions
* DriverPass would like the system to be ran over the cloud, so they do not have to keep up with security and backups
* DriverPass would like the UI to display the tests a customer took and the status of it (in-progress, completed, not taken, etc.), comments the driver has left for the customer as well as other details on the lesson like the time.
  + The UI should also display an input form for student information
  + The UI should include a page for DriverPass’ contact info
  + The UI should also provide a page for the customer’s contact info allowing DriverPass to contact the customer

### 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?*

* Upon completion the system should allow a customer to take online practice assessments and make reservations for on-the-road training with DriverPass
* The system should be able to assign multiple roles with varying permissions to each user
* During the design phase, a technical stack must be researched and chosen for the application
* During the design phase, deliverables for database design must be finished like UML Models, flowcharts, etc.
* During the design phase, a cloud provider must be researched and chosen
* During the design phase, deliverables for UI/UX design must be finished like wireframes, mockups, user research documentation, etc.

## 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?*

* System will be web-based and operated through the cloud
* System should be fast enough to not cause a high bounce rate for users
* System should update when new rules, policies, etc. are added from the DMV

#### 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?*

* System should probably be run on a Linux platform since many cloud infrastructures are based on Linux
* A database will be needed to persist user data, the cloud platform we utilize would ideally have this as part of the environment

#### 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 user should sign up with an email and password, the email should be unique between all users helping to differentiate between ones with the same names.
* Input should be case-sensitive since emails are case-sensitive, same with passwords
* The system should inform the admin of a problem when any technical errors (potential site-breaking errors) occur. Not for errors where the user may have mistyped, or something expected and already guarded within the code

#### 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 should be able to make changes to the user without changing the code. For instance, admins may need to automatically reset a users’ password if they forget it
* When new features are added to the next iteration of the DriverPass application, upgrades will be made so the system will be able to handle platform updates easily with the most current technology
* The IT admin will need to be able to manage Users and Roles, so they can add, remove or modify customers and other employees as well as establish their role permissions.

#### 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?*

* For the user to log in, they will need an email and password
* To secure the connection, the cloud will handle most of the security for requests coming in and responses going out of the server, we’ll utilize cryptography to securely send information from the client-side
* If a “brute force” hacking attempt has occurred, then that user’s account should be deactivated and the user’s information should be reported to the IT admin as well technical support to ensure nothing was breached and ramp up security if needed
* If the user forgets their password their will be a link provided that will contact the IT admin who will reset the user’s password and notify them by email when the password is reset

### 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 handle different roles and permissions levels for users
* The system shall allow the customer to make a driving lesson reservation
* The system shall allow administrators to make driving lesson reservations
* The system shall allow the customer to take tests updated by the DMV’s rules/policies
* The system shall allow administrators to disable packages that can be chosen during the reservation process

### 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 interface needs the user data from the database
* Customers need the interface to show tests they took, their progress on it as well as forms for reserving driving lessons
* DriverPass employees need the interface to allow them to reserve driving lessons on behalf of the customer, reset the customers password, leave driver notes and perform updates
* Since the application will be web-based the user should be able to interact with the interface on mobile and on desktop browsers

### 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?*

* We are assuming the user has internet connection
* No budget was specified so we are assuming there are no constraints for that as well
* We are assuming we have complete control over which cloud infrastructure we utilize as the client didn’t specify one in particular
* We are assuming we have complete control over design of the database as the client did not specify if they already had a database or if they care to switch databases if there was already an established one

### 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?*

* Though no time limit was specified, this application could take a long time depending on how many features we include, so we’ll want to limit the amount of features included in each iteration to get the product out faster

### Gantt ChartTimeline Description automatically generated with low confidence