# CS 255 Business Requirements Document Template

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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?*

* Liam is the owner of DriverPass, he sees a void in the market when it comes to quality driver’s training, and preparing students for their driver’s test.
* Liam want’s his users to be able to create an account, which will allow them to choose and buy a package that best suits their needs.
* Customers should be able to create and update their profile to include their personal information that includes where driving instructors can pick them up for their lessons.
* Customers should be able to schedule driving time with instructors, which means they should also be able to view instructors’ schedules – which should update as soon as someone schedules or cancels their appointment.
* Customers should be able to view their progress on their profile, view notes from their instructors, and take tests, and also reset their password to gain access to their account if needed.
* The DMV should be able to send updated requirements to the administrators at DriverPass.
* Instructors should be able to update their availability, track their current schedule, and view their current appointment schedule.
* Administrators should be able to make appointments for customers as needed, and IT personnel should be able to update or upgrade and makes changes to the system as needed.
* Edits to the system should be made online only so that there is a record of who makes changes to either the system or appointments for customers.

### 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 seeking to fill a void in the driver’s training market and provide better quality driver’s training. This is because many people are failing their tests at the DMV. Since they can schedule time and do work online, this will provide better and flexible learning opportunities to help customers pass their driver’s test.
* The system needs to have a secure database that houses customer’s personal information, the customer’s account information, the availability of instructors, and the currently scheduled driving sessions.
* The frontend user’s see when logging onto the system should have an interface to make an account, reset their password if needed, update their account information, purchase a driver’s education package, schedule sessions with driving instructors, access online tests/lessons, view their progress, view notes from their driving instructors, and finally cancel or reschedule lessons as needed.

### 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?*

* Data needs to be accessible offline to the owner, Liam.
* Administrators such as the owner Liam, his IT officer Ian, and Liam’s secretary need to be able to make edits to the system while online.
* Edits to customer’s appointments and profiles need to be tracked.
* There are multiple administrative and IT users and different permissions that need to be managed for each person
* DriverPass has multiple, and will potentially having changing packages - so they need to be handled by the system
* Customers should be able to reset their own password by choosing “forget password”’
* Notifications to administrators of the system should be set up, so when changes are made to requirements there is an urgent alert
* Customers should be able to schedule/reschedule/cancel appointments, and the secretary and other administrators should be able to access this as well
* Customers can purchase driver’s education packages through the site
* Customers should be able to edit account information, view their progress, view notes from their instructors, and access online tests/lessons from their dashboard
* IT personnel should have access to manage, upgrade, or update the system as needed

## 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 should be web-based, but be able to be accessible on mobile browsers as well
* The load time for the majority of the site’s users should be 1-2 seconds, and absolutely no more than 3 seconds for the rest
* Minor updates should occur weekly (updates that require no downtime), big updates should occur monthly and be no longer than 2 hours during times the site is least used (this should be determined by a report of web-traffic)

#### 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 website should be able to run on most desktop and mobile browsers, ideally it should run on all of them.
* The user interface should automatically adapt if a mobile browser is being used, and should format accordingly so all features of the website are still accessible.
* The backend needs to have a database for customer’s account information as well as logs of changes made to the system

#### 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?*

* Passwords to log into the system will be case-sensitive, other input to the site will not be
* The site will be able to distinguish from different users based on their login information, customers will have different account credentials then administrators and IT personnel. Cookies from the web front-end can also be utilized to help distinguish between various types of users.
* A report of all site activity will be produced at the end of every day, if any critical errors are detected (such as hacking attempts) an urgent message should be sent to notify IT personnel

#### 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?*

* Changes to users can be made without changing code, it can be done by an administrator with proper access managing user accounts database
* As new updates to web applications and sites come up, the site will need to remain up to date as well – these can be done in the monthly or minor weekly updates.
* IT personnel and more specifically the head IT officer need to have access to the database of customers
* IT also needs to have access the systems server to be able to manage it correctly – but varying levels of access should be given based on job

#### 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?*

* If 5 incorrect passwords are entered, the account should be locked or the password for the account should automatically be reset and sent to the email on file.
* Two-factor authentication should be an option for user’s, this would require two forms of identification for them to gain access to their account. This could be done with email and a text message to the phone number on file.
* Correct password and username/email are required to login

### 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 notify administrators when there is a requirement or change at the DMV involving driver’s education
* The system shall schedule or cancel appointments with driving instructors when prompted by user or administrative command
* The system shall update customer information in the database when a user or administrator gives the command – this should update the backend data
* The system shall update instructors’ availability when the command is given by the instructor or administrator
* The system shall track available and filled appointments for the driving instructors
* The system shall show users their progress, notes from driving instructors, and upcoming appointments when they login
* The system shall track who makes changes to user accounts or the system as a whole
* The system shall validate a user’s password and username/email address when logging into their account
* The system shall send a text message to the user if they are opted into two-step account verification upon login
* The system shall lock a user’s account if five incorrect password attempts are made
* The system shall warn a user about how many failed attempts they have to login left
* The system shall send a temporary password to a user’s email address when prompted by the user, or 5 failed login attempts
* The system shall allow users to access online lessons and tests
* The system shall allow users to look at and choose a driver’s training package out of multiple options

### 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 be a web-based system available in most if not all internet browsers
* The user interface needs to adapt when accessed from a mobile browser
* Customers can create an account and access their account which includes: viewing multiple driver’s education packages currently available, buying a driver’s education package, view history of purchases, view their current progress, view notes from their driving instructors, update their personal information, set preferences such as for two-step authentication, view lessons, take online tests, schedule/reschedule/cancel appointments with driving instructors, and view past appointments
* Administrators should be able to make changes to customers accounts and appointments on their behalf when necessary

### 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?*

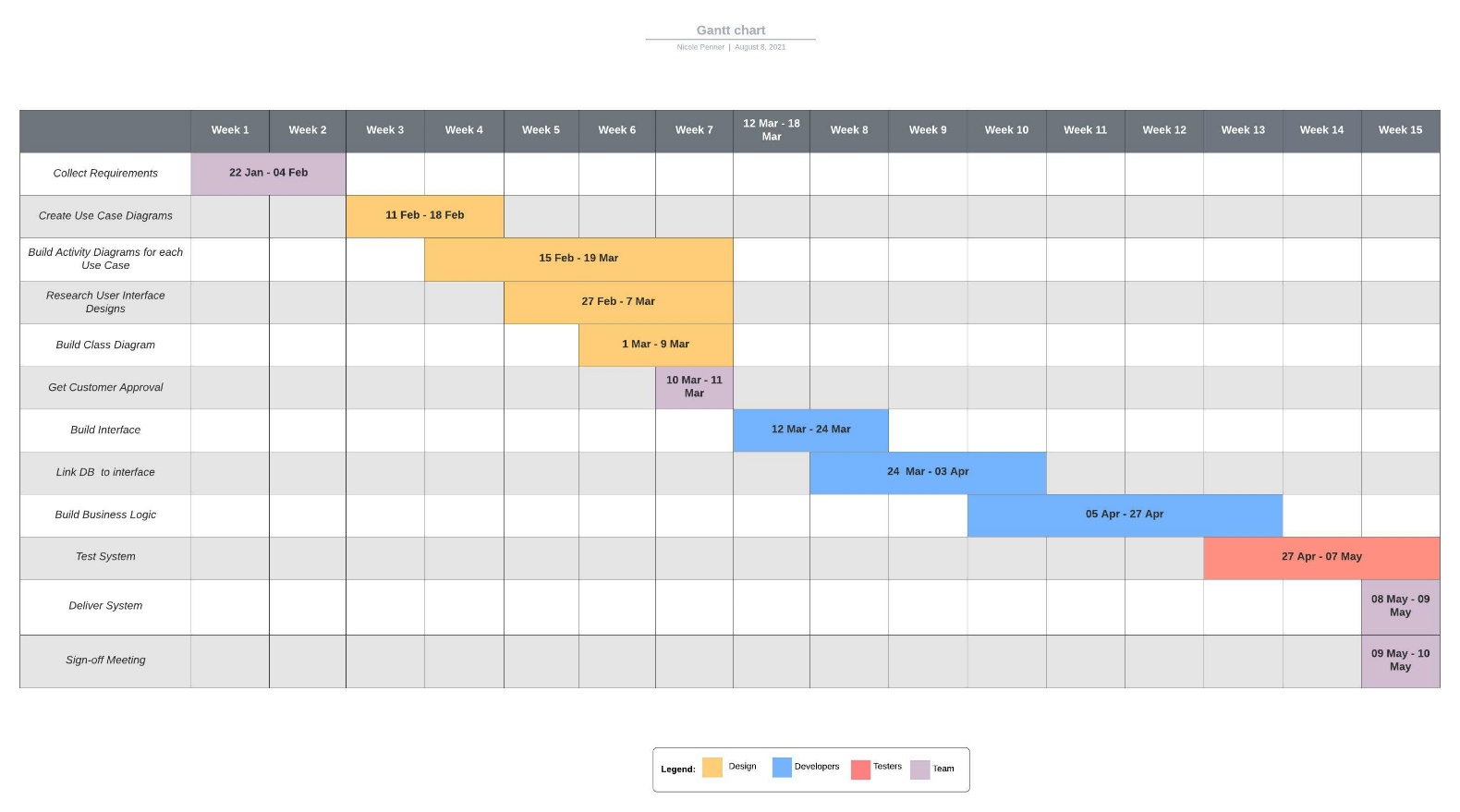
* I assume that customers will have access to a web-browser whether it is on a mobile device, or a computer
* I assume customers have access to up to date and modern web-browsers
* I assume that customers will have an email address they can use for account creation
* I assume customers will have access to internet or mobile-data from their phone
* I assume there is a way to track DMV requirements automatically or to have them notify DriverPass of changes

### 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?*

* There is a 15 weeks project completion expectancy
* Inability to predict changes to the DMV’s requirements
* Inability to control updates and/or changes to desktop and mobile web-browsers
* The front-end user interface needs to be compatible with all major web-browsers
* The user-interface needs to adapt when being used on a mobile device

### 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.*