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# CS 255 Business Requirements Document Template

## 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?*

* DriverPass is a company who wants to offer a way for people to take online driving classes as well as schedule and facilitate in person, mock, driving tests to help practice for their DMV licensing test. As according to Liam, the owner of DriverPass, there is a need for better driver training.
* DriverPass also would like to offer on-the-road driving lessons as well.
* DriverPass would like a system that can be accessed by potential customers via a website where they can schedule appointments for tests or sign up for classes.

### 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 to decrease the amount of people who fail their driving tests at the DMV by providing people with better driving instruction.
* DriverPass would like to provide online practice exams, classes and on-the-road training that can be scheduled through a web-based system.
* DriverPass would like a system that employs data redundancy, administrator roles for security, tracking capabilities for driving test/lesson reservations, regular DMV synchronization/updates for compliance, and a cloud-based web interface for initial customer information intake as well as a landing page personalized based on each 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?*

* Customers should be able to schedule and modify appointments for driving tests/sign up for classes online.
* Customers should be able to take online practice tests and classes.
* DriverPass should be able to disable specific driving appointment packages based on their availability according to the appointment tracking system.
* Customers should be able to reset their password automatically.
* The web-based user interface should allow for the intake of new customers information and include a contact page as well as a landing page that displays their test/course progress and relevant information.

## 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 and accessed by a customer via an internet connection.
* The system should be fast enough to handle many users, concurrently. So a cloud based hosting service would be most effective at providing the server capacity required.
* The system should be able to receive updates when new features are needed/desired to be added.

#### 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?*

* Since Liam, the owner of DriverPass, would like data redundant servers for both online and offline accession of data, Unix would be the best platform for the backend of the system to run on.
* Unix also provides excellent integration for advanced security features that can better help secure the database of information that will be required when maintaining the records of all current customers and their relevant information.
* Through a cloud-based host running Unix, the database management responsibilities would be forwarded to the third-party hosting company.

#### 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?*

* When users first register, they will create a username unique to them along with a case-sensitive password. The username should not be case sensitive.
* Two factor authentication can be implemented to further improve the security of a user’s account and assist in recovery of their password if they forget it, along with a reset password function.
* Liam, the owner of DriverPass, would also like the system to be updated with current DMV requirements so they can provide relevant driving instruction to potential customers. So when the DMV changes their requirements, the system should alert the administrator to update course material, or do it automatically.

#### 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?*

* Users should be able to be added/removed/modified from specific courses or deleted entirely through the privileges given to the IT administrator without the need to alter the source code for the system.
* The system should be developed in a modular way so that when new features need to be added, an update can be pushed to seamlessly integrate the new blocks of code into the original design with minimal interruption to the systems overall uptime.
* The IT administrator will need omnipotent access to both the front and backend of the website to monitor the system’s uptime and help identify/fix bugs when the need arises.

#### 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 user will need their unique username as well as their password to login as well as a two-factor authentication token generated via a third-party application, which they would have created and linked to their account when first registering with the site.
* Since the data supporting the system will be hosted in a myriad of third-party data centers and connected via the cloud, users will never be accessing the entirety of the database supporting the system. This provides redundancy as well as obfuscation of the source of data provided to each user as they access the system.
* After a certain number of failed logins, for example 5, the system should prevent further login attempts from being made and prompt the user to reset their password via their email.

### 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 intake customers information and store it for future reference.
* The system shall allow for new users to register through creating a username and password.
* The system shall provide practice tests and classes online.
* The system shall manage, and book reservations made by customers for driving lessons.
* The system shall run efficiently and provide a fast and responsive experience for the user.
* The system shall facilitate special access/roles based on a user’s required privileges.
* The system shall display course progress/previously completed tests and current progress.
* The system shall offer the three different driving packages to users.

### 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 initial registration page should display an input form where a student can fill in their information and register for an account.
* The interface for the main landing page once a user logs in should display a user’s online test progress and grades of previous tests, as well as their personal information, notes from their previous driving lessons, a photograph of the student driver and their driving instructor, and any special needs to student driver may require.
* There should also be a contact page that displays relevant contact information for technical assistance or support.
* There are five different users for this interface. One is the student who has registered and has basic level access to the website. Two is the driving instructor who needs access to tests for grading and the driving notes section of the website. Third is the administrator role who has complete access over all facets of the website. Fourth would be the secretary role who can modify students’ appointments. Fifth would be the owner role which would encompass all admin capabilities.
* A user should be able to interact with the website via mouse and keyboard on a PC or laptop in an internet browser or through touch screens on a mobile device and their respective internet browser.

### 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 users must have an internet connection to interact with the system.
* The users also must have an internet capable device, a mobile phone or computer, to access the system.
* The system also has no defined budget which means we can only assume everything listed can fit into the budget for the development of the system.
* The users must also be somewhat competent in navigating and using technology if they are pursuing a driver’s license.
* The users must also have an email to register for an account.

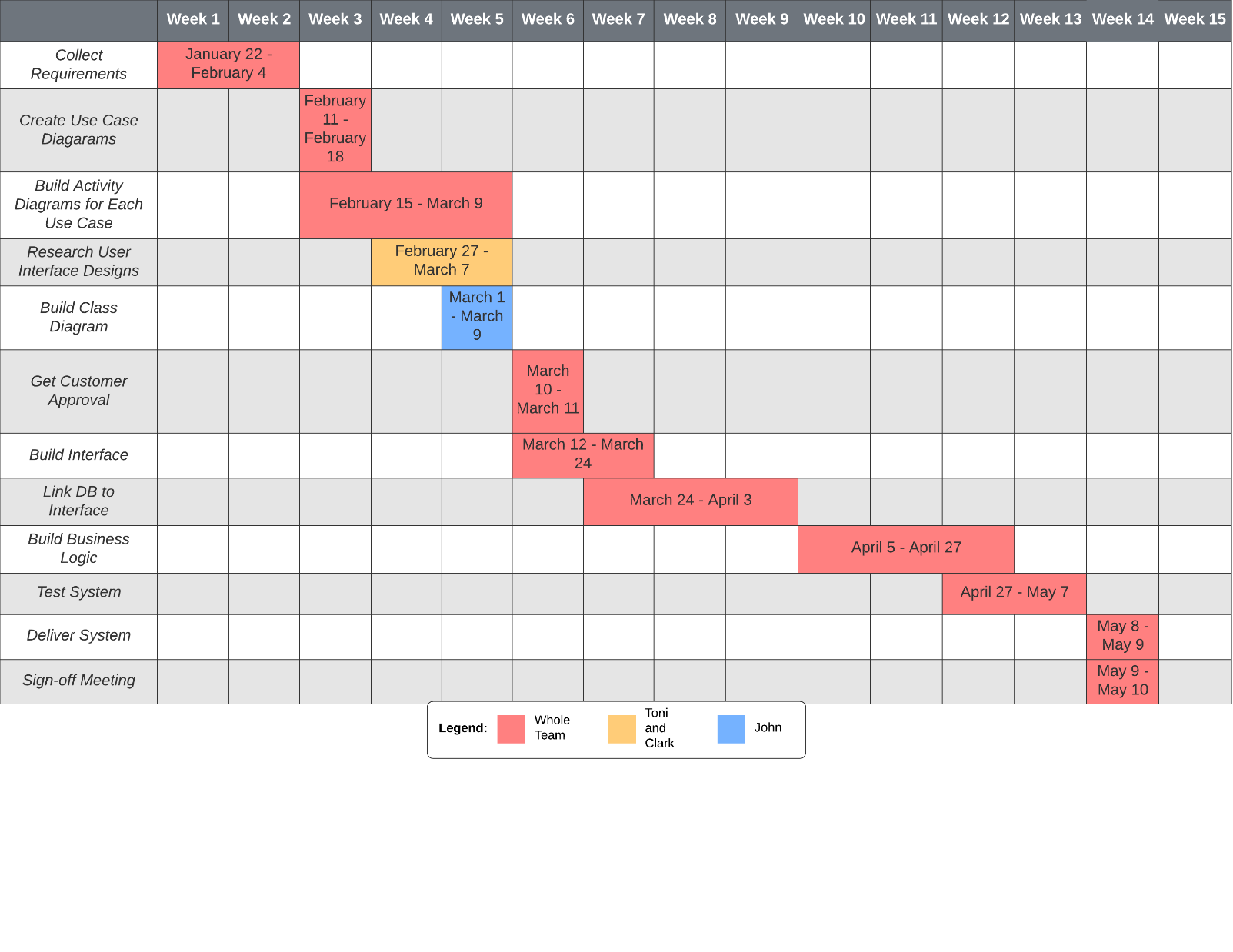
### Limitations

*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 no prescribed budget for the development of this system.
* Development is anticipated to take about 5 months, so there are only 5 months to implement all the functions and features laid out.
* Even though the DriverPass system is hosted on the web, hands-on driving instruction will only be able to be done with local customers, based on where DriverPass is located.
* There is no strategy for expanding access to hands-on driving instruction or what area they even intend to supply with this service.

### 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.*

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