# CS 255 Business Requirements Document Template

Complete this template by replacing the bracketed text with the relevant information.

This template lays out all the different sections that you need to complete for Project One. Each section has guiding questions to prompt your thinking. These questions are meant to guide your initial responses to each area. You are encouraged to go beyond these questions using what you have learned in your readings. You will need to continually reference the interview transcript as you work to make sure that you are addressing your client’s needs. There is no required length for the final document. Instead, the goal is to complete each section based on your client’s needs.

**Tip:** You should respond in a bulleted list for each section. This will make your thoughts easier to reference when you move into the design phase for Project Two. One starter bullet has been provided for you in each section, but you will need to add more.

## 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 is DriverPass.
* The goal is give drivers better driver training due to the amount of failures from the DMV.
* DriverPass wants to achieve this through online training and live instruction.

### 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 will be appointment based
* These appointments will be periods of instruction to better drivers for their DMV Test and will follow a package
* There is 3 tiers to the package
  + Tier 1 - 6 hours in a car
  + Tier 2 - 8 hours in a car with in person training for rules and policies of DMV
  + Tier 3 - 12 hours in a car with in person training for DMV and Online courses and material with practice test
* Different components to include interfaces and design perspective for:
  + Vehicles and Drivers
  + Instructors
  + Web based learning
  + Purchase page for packages
  + Log in / UI / Videos / Text Documents
  + Databases and infrastructure for system.
  + Languages and supporting models
  + IDE for the program to be built in
* Reporting and logging to show completion and drivers to track data accurately.
* Report downloading to include offline access
* System Roles for everyone and monitoring of these roles

### 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?*

* Create Account and Password
* Select a package
* Able to make, cancel, modify driving appointments
* View online course material from any device
* Take practice exams
* Track User progress and performance
* Store and allow modification for user data, contact, appointment, etc as a redundancy for errors.

## 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?*

* For the servers, which will manage all the data and backend processes, it is best to use Linux-Based servers which is the fastest servers.
* The system should be stressed tested and the servers should be able to at least handle max load at peak hours.
* The system should always be updating the base layer to ensure that progress is tracked properly and saved. The system should also be updating the master server anytime feedback is submitted, reservations are made, completed, or changed. Then when new guidelines are released.

#### 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 the. System is web based, you need to take into consideration what are the common OS systems (Windows, Mac, Linux) and what are the most common browsers (Chrome, Edge, Firefox, Safari). This is to ensure continuous support for all these platforms and web browsers.
* The system will require a backend and we can choose one of Sql options. Whichever has the best support at the time for our needs. This is subject to change depending on requirements but we can start with SQL

#### 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 will have their own accounts that are password protected.
* Username and passwords will be used for authentication
* System users stalled be given roles with different authorization levels to access resources
* Case sensitivity for passwords
* Limi on number of login attempts before resetting password to confirm identity

#### 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?*

* System users shall be able create, add, delete, modify accounts.
* Users should be able to modify account info.
* Patches and updates required to maintain browser and OS support.
* System updates will be done when features/bug fixes are completed using a agile scrum development and only update during the low usage hours to minimize impact on users
* Agile development should allow for smaller changes to be implemented.
* The admins will need full access to control all accounts.

#### 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?*

* Users shall need to unique username and passwords
* Network requests will be made with HTTPS which a secure network
* Sign in submission forms will be made with HTTPS request.
* All traffic will be encrypted.
* Too many log in attempts will cause a reset.
* Password reset will require username and email to send an email to reset the password on the account or through 5 step verification on the phone via Admin.

### 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 require user authentication and authorization; i.e., validate user credentials and when logging in. Authorization (access) level is determined by account type.
* The system shall be web-based. Instructional material may be accessed offline (by download) but data can only be updated/modified (reservations, password resets, etc.) online.
* The system shall track user activity, indicating which user made a reservation, canceled a reservation and last modified it.
* The system shall provide reporting, such as a detailed activity report.
* The system shall initially list three DriverPass course package types, and allow individual packages to be disabled. New packages may be added as features in future development.
* The system shall accept customer details for account registration
* The system shall allow users to reset passwords.
* The system shall provide instructional material compliant with current DMV guidelines.
* The system shall display user exam progress/grades.
* The system shall provide instructor feedback to students.
* The system shall allow exams/material to be added/modified/deleted.
* The system shall allow users to be contacted by instructors/secretary/admin.

### 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 user and seem access are:
  + DriverPass Owner
  + DriverPass Information Technology Officer
  + DriverPass Secretary
  + Customer
* The user will see the following:
  + Home Page
  + Account Setup
  + Course Material
  + Driving Lesson Scheduling
  + DriverPass contact information.
  + Student Information
    - Which includes progress

### 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 internet is available 24/7 for system communication, allowing the recording of student progress, exam updates, and driving lesson scheduling.
* It is assumed that DMV guidelines are consistently updated and freely available.
* Given the popularity of mobile apps, developing native DriverPass apps for iOS and Android may soon become a priority.
* DriverPass users are expected to have a compatible client device with internet connectivity, an operating system, and a browser that meet the system requirements.

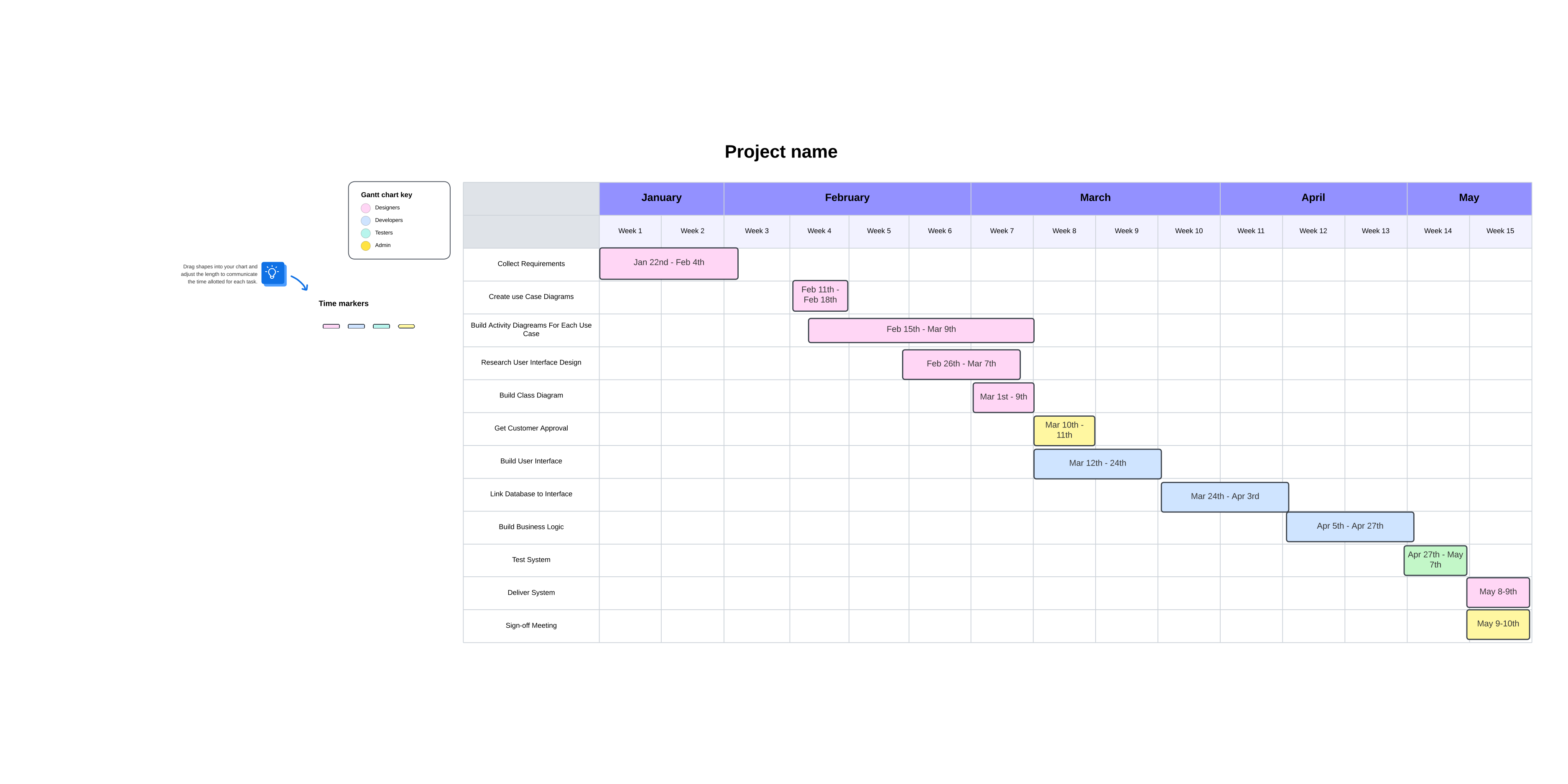
### Limitations

*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?*

* As a web-based application, this system depends on network connectivity. Users cannot create, update, or delete data without internet access. Additionally, content such as study materials and practice exams, or driving lesson reservations cannot be accessed offline, although downloadable options may be available for some content.
* The system requires electricity to power both the DriverPass platform and the client devices.
* Initial capital expenditure is a limitation, as physical hardware (servers) involves significant upfront costs and ongoing provisioning and maintenance expenses. A cloud-based backend/database architecture is recommended to reduce initial capital outlay, as costs are based on actual service usage. This approach also conserves financial resources and accelerates time to market by shifting development focus away from hardware management.
* Budget and time constraints will influence the number of staff assigned to the project and whether additional staff or outside contractors will be required.
* The skill set of the current staff may impact budget and time constraints, as developers will be needed for the web-based interface and cloud-based backend/database layers. Additional training may be necessary if the staff is unfamiliar with the required technology.
* DriverPass instructional material relies on current DMV guidelines, so there are limitations regarding the consistency, speed, and access to updated guidelines when changes occur.

### 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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