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# 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?*

* Purpose: To create a system that will provide customers with the appropriate driving lessons to pass their DMV tests.
  + The system will offer:
    - Online classes and practice tests.
    - An avenue to schedule on-the-road training.
* Client: DriverPass
  + Owner of DriverPass: Liam
* Client’s wants for the system:
  + To provide driving classes and practice tests online to prepare students for their DMV tests.
  + Users to able to:
    - Register their information.
      * Users will be billed on their provided credit or debit card (which will be authenticated) according to what they purchase.
    - Reserve driving lessons.
    - Purchase packages.
    - Access classes and practice tests online.

### 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?*

* Problem: Liam sees a void in the market when it comes to training students for the driving test at their local Department of Motor Vehicles (DMV), which is why many people have been failing their driving tests.
* Solution: A system that embodies DriverPass’s aspirations to provide better driving training than what is available in the market so more people can pass their driving tests at the DMV. This includes online classes, practice tests, and on-the-road training.
* The general components required for this system are:
  + A functioning cloud-based web application that fulfills DriverPass’s aspirations, which are:
    - A customer must be able to:
      * Schedule an appointment.
      * Reserve a driving lesson.
      * Purchase a package.
    - The system follows Driverpass’s requirements regarding:
      * Security.
      * Tracking.
      * Compliance.
      * Interface.

### 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?*

* The system must be able to do the following after completion:
  + Registration:
    - Customer must be able to schedule an appointment through the system.
    - The system must provide means for customer to provide their:
      * First and last name
      * Address
      * Phone number
      * Credit or debit card number, expiration date, and security code
    - Customers cannot schedule an appointment until all information is provided and authenticated.
  + A customer must be able to make reservations online using their accounts.
    - Reservation details:
      * Reservations are for driving lessons.
      * Each driving lesson is two hours long.
      * The reservation consists of the date and time of the driving lesson.
      * A customer is able to select a training driver and car from a list of what is available at that moment.
      * The customer is picked up and dropped off by their training driver:
        + The customer must be able to and must set pickup and drop-off locations.
  + A customer must be able to purchase one of three packages:
    - **Package One**: Six hours in a car with a trainer
    - **Package Two**: Eight hours in a car with a trainer and an in-person lesson where DriverPass explains the DMV rules and policies
    - **Package Three**: Twelve hours in a car with a trainer, an in-person lesson where DriverPass explains the DMV rules and policies—plus access to their online class with all the content and material. The online class also includes practice tests.
      * Since a driving lesson is two hours long, the total driving hours for each package will be divided into separate days according to the customer’s preference, each containing a two-hour driving lesson.
  + Security:
    - Access rights are assigned according to each employee’s respective role.
      * Known users of DriverPass and their access rights and role:
        + Owner: Liam

Access Rights:

Able to download company’s sensitive information.

Able to disable a package for use.

* + - * + IT officer: Ian

Access rights:

Full access over all accounts

Able to reset a password if either an employee or customer forgets it.

Although users should be able to reset their own password.

Through a link like “forgot my password.”

Able to block access of users.

* + - * + Secretary

Access rights:

Has access and can modify/update all user information.

Has access and can modify/update all purchases and reservations data.

* + Tracking
    - Every change in reservation for a driving lesson must be logged.
    - Data must be able to be summarized in an activity report and downloaded.
  + Compliance
    - DriverPass must be connected with the DMV.
    - DriverPass must get a notification whenever the DMV has implemented new rules, policies, or sample questions.
  + Interface
    - DriverPass Interface: Cloud-based web application
    - Web Pages:
      * Homepage of users: Liam’s (owner of DriverPass) sketch.A sketch of a test

        Description automatically generated with medium confidence
        + Online test progress shows the tests the customer took.

What test is in progress and what has been completed.

Consisting of test name, time taken, score, and status.

Status could be not taken, in progress, failed, or passed.

Driver notes would consist of the following table:

A table with text on it

Description automatically generated

* + - * Input page for student’s information
        + Filled out by the student or secretary.
        + Information to be filled:

First and last name

Address

Phone number

Credit or debit card number, expiration date, and security code

* + - * Contact page for a student to contact DriverPass, and vice versa.
        + If an employee of DriverPass with the appropriate access is accessing this page, then it will consist of:

Student’s contact information.

A text box for an employee of DriverPass to write a message, which will be sent to the student.

* + - * + If a student is accessing this page, then it will consist of:

DriverPass’s secretary’s contact information.

A text box for a student to write a message, which will. be sent to DriverPass’s secretary.

* The following measurable tasks must be included in the system design to achieve the goals of the system and must be completed within their respective timeline:
  + A table with a list of tasks

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## 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 needs to run in a web-based environment.
* The system should load in two seconds or less.
* The system should be updated regularly to include new DMV rules and any other necessary updates.

#### 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 should run on:
  + Windows
  + macOS
  + Linux
  + Any modern web browser (Chrome, Firefox, Safari, Edge)
* The back end requires:
  + A database such as MongoDB or MySQL.
  + A web server such as Node.js with Express.js.

#### 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 be distinguished by unique email addresses.
* Input will be case-sensitive where necessary, such as for passwords.
* The system should inform the admin immediately if there are issues like multiple failed login attempts, payment failures, or system errors.

#### 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 roles and permissions can be managed through an admin interface without changing the code.
* The system will use APIs to adapt to platform updates.
* The IT admin (Ian) needs full access to manage all user accounts, reset passwords, and monitor system health.

#### 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?*

* An email and password are required for a user to log in.
* Secure the connection using HTTPS and encrypt sensitive data.
* Implement account lockout mechanisms after multiple failed login attempts to prevent brute force attacks.
  + If a client’s account has been hacked by brute force, their account will be immediately closed till further notice.
* Provide a “forgot password” link for users to reset their passwords via email notification.

### 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 allow users to register with their personal information.
* The system shall enable users to schedule driving lessons.
* The system shall allow users to purchase training packages.
* The system shall track the progress of users in online classes and practice tests.
* The system shall log all changes in reservations.
* The system shall notify users and admins of important updates and reminders.

### 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.)?*

* Needs of the interface:
  + Intuitive and user-friendly design.
  + Accessible on both mobile and desktop browsers.
* Different users:
  + Students
    - Register and log in.
    - Enroll in courses.
    - Schedule driving lessons.
    - Track progress and results.
  + Instructors
    - Manage availability,
    - View and manage their schedule.
    - Provide feedback on lessons.
  + Admins
    - Manage users, courses, and schedules.
    - Generate reports.
    - Monitor system health and security.
* Interaction:
  + Through modern web browsers on both mobile devices and desktops.

### 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?*

* Users have access to modern web browsers and reliable internet connections.
* Users are familiar with basic computer and internet usage.
* Payment gateways will handle billing and transactions securely.

### 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?*

* System Design Limitations:
  + Dependence on third-party services for video hosting and payment processing,
  + Potential latency issues in regions with slow internet connectivity.
* Resources, Time, Budget, or Technology limitations:
  + Limited resources and budget for initial development and ongoing maintenance.
  + Constraints on development time due to project deadlines.
  + Limited access to high-end server infrastructure.

### 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.*

A calendar with a number of days

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