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CS255 System analysis and design

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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?*

* Liam the owner of DriverPass wants to create a system to help students be better prepared for their driving exam.
* DriverPass will provide online resources and hands on training.

### 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 offer tools such as online classes, practice test, and actual driving lessons.
* Many people fail their driving test and DriverPass will prepare the students with resources needed for success.
* System must be accessible from mobile or the web (cloud based).
* System should allow online scheduling, rescheduling and cancelation ect.
* System should have role-based access (management, IT, secretary, instructor, and student).
* Components: Databases for available vehicles, instructors, student information, all online learning material.

### 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?*

* Web and mobile access.
* Connected to DMV to ensure resources align with current DMV standards.
* Users can create and modify their account.
* User can access online resources, classes and practice test.
* User can schedule driving lesson (pick from 3 packages) or cancel or reschedule.
* IT manager will have access to all accounts for password reset or removal of role.
* Owner will have full access to all data and the ability to generate activity reports.

## 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?*

* Web based application that can be accessed on pc or mobile devices
* Cloud based to deal with backup and security
* Load times should as close to instant 1- 2 secs
* System is to be updated whenever the DMV is, so they are up to date on new rules or policies.

#### 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?*

* Operate on popular OS’ Windows, MacOS, Linux, iOS, and android.
* Application should run on multiple browsers Chrome, Safari, Firefox, and MS Edge.
* Web based server to handle requests and responses
* Cloud based API for backend processing and data management.
* Cloud infrastructure to automatically scale up during peak traffic time
* To store customer and system information a database should be used such as MySQL

#### 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?*

* System will distinguish between user by unique identifiers to separate customers from employees.
* Passwords should be case sensitive to be more secure.
* If there is an error the admin should receive immediate notification such as multiple failed login.
* If there’s is an error user should get immediate feedback such as wrong password input

#### 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 should allow changes to user (add/remove/modify) through admin user, without changing code
* System will be able to update in the background without users losing access.
* IT admin needs backend access to troubleshoot and update application as needed.

#### 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?*

* Unique username and passwords to login.
* SSL/TLS to secure communication between client and server.
* If there’s a brute force attempt system should lock user out.
* If user forgets their password admin can reset or user can do so through 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 at login
* The system shall allow users to update information
* The system shall notify the admin of login failure, errors, user activity and changes.
* The system shall allow admin to remove, modify, create and block users
* The system should have a user-friendly UI.
* The system should allow user to schedule and pay for appointments with available employees.
* The system should be linked to DMV to stay up to date with current rules, policies ect.
* The system shall store and retrieve data securely (encryption)
* The system shall allow the IT admin to update and troubleshoot the system without disrupting the system.

### 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 system should be optimized for mobile, browser, and tablets, with the same features for users based on their access.
* The different users: customers, employees and admin
* Customers should be able to access
  + Log in/Home page
  + Test progress and score
  + Driver notes from lessons
  + Packages available
  + Access company contact info
* Admin
  + Add and remove packages
  + See which driver is matched to which customer at what time, duration and comments
  + Allow users to reset password
* Employees
  + Access to contact student
  + Input notes on current student 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?*

* All users will have internet to access the application.
* Users will have modern devices that support the application.
* Users will know how to use application on web or mobile.

### 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?*

* Meeting DriverPass requirements in the timeframe and budget.
* Speed of application will depend on available internet connection.
* DriverPass only has 10 cars so booking an appointment is limited.
* The types of vehicles available might not have variety to meet a range of customer needs.

### 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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