# Courtney Warner

12/10/2023

# CS 255 System Design Document Template

This template lays out all the different sections that you need to complete for Project Two. Each section has guidance to prompt your thinking. 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 what your client’s needs are. Remove this note when you are finished, and replace all bracketed text with the relevant information.

## UML Diagrams

### UML Use Case Diagram

*[In Module Six, you were asked to complete a use case diagram based on your system design. If you would like to make any adjustments to your diagram, please do so. Please insert your use case diagram here. Check to make sure that you included appropriate components and symbols and that your design meets the client’s needs.]*

A diagram of a driver pass

Description automatically generated

### UML Activity Diagrams

*[You were asked to choose* ***two*** *use cases and create* ***two*** *activity diagrams, one for each use case. Please insert* ***both*** *of your activity diagrams here. Check to make sure that you included appropriate components and symbols and that your design meets the client’s needs.]*

A diagram of a username

Description automatically generatedA diagram of a computer program

Description automatically generated

### UML Sequence Diagram

*[You were asked to create a sequence diagram based on* ***one*** *of the use cases you chose. Please insert your sequence diagram here. Check to make sure that you included appropriate components and symbols and that your design meets the client’s needs.]*

*A diagram of a user account

Description automatically generated*

### UML Class Diagram

*[You were asked to create a class diagram based on the different classes and attributes needed for your system design. You are* ***not*** *required to include methods, but you may if you wish. Please insert your class diagram here. Check to make sure that you included appropriate components and symbols and that your design meets the client’s requirements.]*

*A diagram of a computer

Description automatically generated*

## Technical Requirements

*[Based on the diagrams you have created, describe the technical requirements of your system. These requirements should address the required hardware, software, tools, and infrastructure necessary for your system design.]*

Hardware:

1. Server Infrastructure:
   * A cloud-based server infrastructure, hosted on Google Cloud Platform.
   * Server can handle concurrent user interactions, data storage, and processing.
2. Database Server:

* A relational database management system hosted on Cloud SQL
* The database should efficiently store and manage data related to users, appointments, packages, and system configurations.

Software:

1. Operating System:

* The server should run on a suitable operating system based on the system’s compatibility and requirements.

1. Web Application Framework:

* A web application framework for developing the front-end and back-end components of the system.

1. Database Management System:

* Integrate a robust and scalable relational database management system.

1. Programming Languages:

* Use of programming languages suitable for web development for client interactions.

1. Web Browsers:

* Compatible with standard web browsers to ensure a seamless user experience.

1. Security Framework:

* Implementation of security measures such as encryption for secure data exchange.
* Role-based access control to manage user privileges and permissions.

Tools and Infrastructure:

1. Development tools:

* Integrated Development Environment for coding and debugging.
* Version control tools for collaboration development and code management.

1. Cloud Services:

* Utilization of cloud services for scalability and easy maintenance.

1. Backup and Recovery:

* Regular automated backups of the database to prevent data loss.
* Reliable backup and recovery to restore the system in case of failures.

1. Notifications:

* Integration with email and SMS notification services for sending alerts, notifications, and temporary passwords.

Miscellaneous:

1. Compliance Updates:

* Implementation of a mechanism to receive and process compliance updates from the DMV.

1. User Training:

* Provision of user training materials or a help center to assist users in navigating the system effectively.

1. Scalability:

* Design considerations for scalability, allowing the system to handle an increase in number of users and data over time.