# 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

A diagram of a diagram

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### UML Activity Diagrams

*A diagram of a flowchart

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### UML Sequence Diagram

*A diagram of a flowchart

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### UML Class Diagram

A diagram of a computer

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## Technical Requirements

**Initial Overview:**

First, the system will be online, meaning users will access the system via the internet. Additionally, since the required information needs to be downloadable and can be controlled offline later, creating a pure website becomes impractical. Therefore, there should be an application and a server that sends the necessary data. The platform should be developed to allow data to be downloaded to this application whenever desired, and a web service must be established on the server side. For the server side, SOAP or REST can be used; however, since SOAP (Simple Object Access Protocol) is not very suitable for download operations, it can complicate the situation even though there are extensions available. Therefore, REST should be used. Additionally, the system should regularly visit local DMV addresses for updates.

**Non-Functional Requirements:**

**Hardware Requirements:**

Based on the design summary above, we should first determine the hardware requirements and limitations. The hardware should be capable of storing users and content in terms of RAM, processing power, and hard drive capacity, and it should allow for horizontal scaling. Network-wise, the number of connections and access to external resources creates a limitation, so the network bandwidth should be sufficient, and servers should be authorized for access to local DMVs over the network.

**Software Requirements:**

In terms of software, since the systems used by users are unknown, and developing an application for each system would negatively impact time and cost, cross-platform programming languages, frameworks, and components should be chosen. On the server side, since migration presents a constraint, it should be designed to work cross-platform as well, and easy migration should be provided, along with migration documentation.

**Security Requirements:**

The security of the system should be ensured by following best practices on both the hardware and software sides.

**Regulatory Requirements:**

DMV regulations should be constantly updated and monitored.

**Functional Requirements:**

**Hardware Requirements:**

The system must have an application server, a database, and a network connection.

**Software Requirements:**

* The system should have a role-based system to differentiate between users.
* A login and signup system based on this role system should be implemented.
* The system should successfully provide access to documents, lessons, and exams.
* The system should successfully handle reservation creation and cancellation operations.
* A payment system should be included.