# 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 screenshot of a diagram

Description automatically generated

### UML Activity Diagrams

A diagram of a login system

Description automatically generated

A diagram of a company

Description automatically generated

### UML Sequence Diagram

*A diagram of a process flow

Description automatically generated*

### UML Class Diagram

*A diagram of a computer

Description automatically generated with medium confidence*

## Technical Requirements

**Hardware**: The system requires servers to host the application, database, and login management system. These servers should have sufficient processing power, memory, and storage capacity to handle multiple users concurrently. Additionally, secure, internet-connected devices such as desktops, laptops, or mobile devices are required for both customers and administrators to access the system.

**Software**: The application should be built using a secure, scalable web framework such as Java or Python for backend development, and HTML/CSS/JavaScript for the frontend. A relational database management system, such as MySQL or PostgreSQL, will be necessary to store user credentials, appointment details, and other relevant data. Secure communication protocols, like HTTPS, should be implemented to protect user data during transmission.

**Tools**: The development process will rely on integrated development environments (IDEs) like Eclipse or Visual Studio Code. Tools for testing, such as JUnit or Selenium, should be employed to ensure the functionality and security of the system. Version control systems, such as Git, will be essential for tracking changes and managing collaborative development.

**Infrastructure**: Cloud-based services such as AWS or Microsoft Azure will be ideal for hosting the web application and database due to their scalability and built-in security features. Additionally, a load balancer may be necessary to distribute traffic evenly across servers and ensure high availability. Finally, the system will require a reliable backup and recovery solution to protect against data loss.