# 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 system

Description automatically generated*

### UML Activity Diagrams

### 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.]*

### 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.]*

## Technical Requirements

***Hardware Requirements:***

* ***Servers****: High-performance servers to host the DriverPass application, ensuring high availability and reliability.*
* ***Network Infrastructure****: Robust networking equipment to handle internet connectivity, ensuring seamless communication between clients and servers.*
* ***Storage****: Sufficient storage capacity to store user data, logs, and backups securely.*

***Software Requirements:***

* ***Operating System****: The servers should run a stable and secure operating system, such as a Linux distribution (e.g., Ubuntu Server) or Windows Server.*
* ***Database Management System****: A reliable DBMS like MySQL, PostgreSQL, or Oracle Database to manage user data and transaction records.*
* ***Web Server Software****: Software such as Apache or Nginx to serve the web application.*
* ***Development Framework****: A robust web development framework such as Django (Python), Spring (Java), or ASP.NET (C#) to develop the DriverPass application.*

***Tools:***

* ***Integrated Development Environment (IDE)****: Tools like Visual Studio Code, IntelliJ IDEA, or Eclipse for developing and maintaining the codebase.*
* ***Version Control System****: Git for source code management and collaboration.*
* ***Automated Testing Tools****: Tools like Selenium or JUnit for automated testing to ensure the application functions correctly.*
* ***Monitoring and Logging Tools****: Tools like Prometheus, Grafana, and ELK Stack (Elasticsearch, Logstash, Kibana) for monitoring system performance and logging errors.*

***Infrastructure:***

* ***Cloud Services****: Using cloud services like AWS, Google Cloud Platform, or Microsoft Azure for scalable and flexible infrastructure.*
* ***Backup and Recovery****: Regular backup procedures and disaster recovery plans to ensure data integrity and availability.*
* ***Security Measures****: Implementing security protocols such as SSL/TLS for data encryption, firewalls, intrusion detection systems, and regular security audits to protect user data and application integrity.*

*These technical requirements ensure that the DriverPass system is robust, secure, and capable of handling the needs of its users effectively.*