# CS 255 System Design Document

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 picture containing diagram, text, screenshot, circle

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.]*

### 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:***

* *Server infrastructure: The system will require a dedicated server infrastructure to host the DriverPass application and handle user requests.*
* *Sufficient processing power and memory: The server must have adequate processing power and memory to handle multiple concurrent users and ensure optimal system performance.*
* *Storage capacity: Sufficient storage capacity must be available to store user data, course materials, and system logs.*
* *Networking equipment: Reliable networking equipment, including routers and switches, should be in place to ensure seamless connectivity.*

***Software Requirements:***

* *Operating system: The system will run on a suitable operating system capable of hosting the DriverPass application.*
* *Web server software: A web server software, such as Apache or Nginx, will be used to serve web pages and handle user requests.*
* *Database management system: A database management system, like MySQL or PostgreSQL, will be employed to store and retrieve data efficiently.*
* *Development frameworks and libraries: Relevant development frameworks and libraries, such as Django or Laravel, will be utilized for building the system.*
* *Security software: Robust security software, including firewalls and encryption mechanisms, will be implemented to protect user data and ensure secure access to the system.*

***Tools Requirements:***

* *CASE tool: The design team will use Lucidchart, a CASE tool, to create and maintain UML diagrams for the system.*
* *Code editor or IDE: Developers will utilize a code editor or integrated development environment (IDE) for writing and editing code.*
* *Version control system: A version control system, like Git, will be employed to manage code changes, facilitate collaboration among developers, and ensure code integrity.*
* *Testing frameworks and tools: Testing frameworks and tools, such as Selenium or PHPUnit, will be utilized to conduct thorough testing and ensure the reliability of the system.*
* *Project management software: Project management software, such as Jira or Trello, will be used to coordinate tasks, track progress, and manage project resources.*

***Infrastructure Requirements:***

* *Internet connectivity: A reliable internet connection is essential to ensure continuous accessibility of the DriverPass system.*
* *Backup and disaster recovery mechanisms: Regular backups of data and implementation of disaster recovery measures will be implemented to protect against data loss and ensure business continuity.*
* *Scalable infrastructure: The system should be designed to accommodate a growing user base and increasing demands, with the ability to scale resources as needed.*
* *Security measures: Robust security measures, including firewalls, intrusion detection systems, and regular security updates, will be implemented to safeguard the system against cyber threats.*
* *Monitoring tools: Monitoring tools will be employed to track system performance, identify potential issues, and ensure optimal uptime.*