# 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 person's work flow

Description automatically generated*

### UML Activity Diagrams

*A screenshot of a computer screen

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### UML Sequence Diagram

*A diagram of a driving lesson

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### UML Class Diagram

*A white sheet of paper with black text

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## Technical Requirements

To meet the technical requirements for the web application, a robust server or cloud-based service is essential for hosting the application, managing the database, and handling user sessions. Workstations are needed for administrative and instructor staff for various system interactions, while mobile devices like smartphones or tablets will allow remote access for functionalities such as scheduling and progress viewing. The server should run an OS like Linux, Windows Server, or use a cloud service like AWS or Azure. A relational database such as MySQL, PostgreSQL, or a cloud solution like Amazon RDS is required for data management. Web server software like Apache, Nginx, or IIS will serve the web application, and a development framework (e.g., Django, Ruby on Rails, ASP.NET) is necessary for robust application development.

Tools like Lucidchart are needed for UML modeling, while an IDE (e.g., Visual Studio, Eclipse) is crucial for coding and debugging. Version control is managed with Git, using platforms like GitHub or Bitbucket. CI/CD tools like Jenkins or GitHub Actions will automate testing and deployment processes.

The infrastructure requires reliable internet connectivity with sufficient bandwidth, systems for data backup and recovery, and robust security measures including firewalls and SSL certificates. Cloud services might include AWS EC2 for servers and AWS S3 for storage. The system should be scalable to handle varying loads, have a plan for maintenance and support, and comply with relevant data protection regulations like GDPR or HIPAA.