# CS 255 System Design Document Template

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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 company's process

AI-generated content may be incorrect.

### UML Activity Diagrams

A diagram of a car

AI-generated content may be incorrect.A diagram of a card

AI-generated content may be incorrect.

### UML Sequence Diagram

A diagram of a customer service

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### UML Class Diagram

A diagram of a software company

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## Technical Requirements

The DriverPass system must be designed to function as a secure, reliable, and scalable webapplication. To achieve this, the system will be hosted on a cloud-based infrastructure that provides on-demand availability and high performance. The use of cloud services ensures that resources such as storage, bandwidth, and computing power can scale up or down based on traffic and user demand, which is essential for supporting a large and diverse user base without downtime or service interruption.

From a software perspective, the system will rely on modern web development frameworks that enable cross-platform accessibility. This means the application must run smoothly on both desktop and mobile devices, regardless of the operating system, so that users can access services conveniently at home, in the classroom, or on the go. The front end will need to deliver a responsive design with intuitive navigation, while the back end should integrate with secure databases for managing student records, training schedules, and testing results. Database operations must support concurrency, allowing multiple users to perform transactions at the same time without errors or data conflicts.

Security is a critical technical requirement for DriverPass, as the system will store personal data, learning progress, and sensitive testing information. To maintain confidentiality and integrity, the system must implement industry-standard encryption protocols, such as SSL/TLS, for all data in transit. Authentication will require strong password policies, and the system should support role-based access controls to ensure that administrators, secretaries, and students only interact with the portions of the system relevant to their responsibilities. Logging and monitoring features will also be necessary to track system activity and detect unauthorized access attempts.

Another important requirement is reliability and fault tolerance. The system should incorporate automated backup processes and redundancy to prevent data loss and minimize downtime in the event of hardware failures or network issues. Load balancing will be implemented to distribute user requests evenly across servers, improving response times and reducing bottlenecks. The infrastructure must also allow for routine maintenance and updates without interrupting user activity, ensuring continuous availability.

Finally, integration and extensibility are required to support the long-term goals of the project. The system must be able to connect with third-party services, such as payment gateways for course fees or state-level systems for testing and licensing. Additionally, the architecture should be modular, making it possible to add new features—such as advanced analytics dashboards, new training modules, or expanded reporting tools—without major redesigns. This flexibility will ensure that DriverPass can evolve alongside changing user needs and industry standards.