# 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

A screenshot of a diagram

Description automatically generated

### UML Use Case Diagram

### UML Activity Diagrams

A diagram of a computer process

Description automatically generated

A diagram of a software company

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### UML Sequence Diagram

A diagram of a user account

Description automatically generated

### UML Class Diagram

A diagram of a product

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## Technical Requirements

Hardware Requirements for Host:

* Physical Server: Robust server hardware capable of handling concurrent user requests and database operations.
* Networking Cables: High-quality cables to ensure optimal connectivity and data transfer rates.
* Peripheral Devices: Monitor, keyboard, and mouse for server setup and maintenance.
* Power Solutions: Uninterruptible Power Supplies (UPS) for power backup.
* High-Speed Internet: A reliable and fast internet connection from a reputable provider.

Hardware Requirements for Client:

* Computing Device: Desktop or laptop computer with adequate processing power and memory.
* Networking Solutions: Wi-Fi Router or Ethernet cables for stable internet connectivity.
* Power Solutions: Reliable power sources, including surge protectors for safety.

Software Requirements for Host:

* Windows Server Operating System: For managing server resources and applications.
* DriverPass Software: Custom software tailored to DriverPass's operational needs.
* Docker: For containerization of applications, ensuring efficient VM traffic handling.
* Security Software: Advanced software for protection against hacking, data breaches, and malware.

Software Requirements for Client:

* Web Browser: Modern browsers like Firefox or Chrome for accessing the DriverPass web interface.
* Operating System: Compatibility with major OS like Mac, Linux, Windows.
* Security Software: To protect end-users from potential cyber threats.

Tools Required for Development:

* Programming Software: IDEs like Visual Studio, Eclipse for software development.
* Version Control Systems: Tools like Git for code management and collaboration.
* Testing Tools: For both automated and manual testing of the software.
* Continuous Integration/Continuous Deployment Tools: For streamlined development and deployment cycles.

Infrastructure Required:

* Server Location: A secure, controlled environment for physical servers or a reliable cloud service provider.
* Network Infrastructure: Efficient network setup for internal communications and external access.
* Backup and Recovery Solutions: Both onsite and cloud-based solutions for data backup and disaster recovery.

Additional Considerations:

* Compliance and Regulations: Ensuring all hardware and software comply with industry standards and legal requirements.
* Scalability: Planning for future growth, both in terms of user load and data storage.
* Performance Monitoring Tools: For real-time tracking of server performance and resource utilization.
* User Experience Optimization: Ensuring the client hardware and software are optimized for the best possible user experience.
* Environmental Controls: For physical server locations, ensuring optimal temperature and humidity levels for hardware longevity.

These requirements give a comprehensive overview of the technical needs for the DriverPass system, taking into account both current and potential future needs.