# CS 255 System Design Document Template

## UML Diagrams

### UML Use Case Diagram

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### UML Activity Diagrams

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A diagram of a flowchart

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### UML Sequence Diagram

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### UML Class Diagram

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## Technical Requirements

For the DriverPass system, the design I created with the UML diagrams shows that we need both hardware and software support to make the system work smoothly. Since the system will be a web application, students and instructors should be able to use it on common devices like laptops, tablets, or even phones as long as they have a modern web browser and internet connection. That means there are no special hardware requirements on the user side, but the servers running the system need to be reliable and fast enough to handle scheduling, payments, and practice tests without crashing or slowing down.

On the software side, the system needs a front end where users log in, schedule lessons, and take practice tests. This can be built with a framework like React or Vue so the interface is quick and works on different screen sizes. The back end should run on a secure web server using something like Node.js or Java Spring. This will allow us to process payments, store lesson schedules, and keep track of student progress. A relational database such as MySQL or PostgreSQL will be needed because our class diagram shows clear entities and relationships like Students, Lessons, Instructors, and Payments.

The infrastructure has to include hosting in the cloud, which gives flexibility to grow as more students use the system. Using a cloud service like AWS or Azure would make it easier to scale, add backups, and keep uptime high. The database should also have automated backups and protection against data loss. Payment processing must go through a secure third-party gateway such as Stripe or PayPal so sensitive card data is never stored directly in our system. For notifications like lesson confirmations, the system should connect to an email or SMS provider.

Finally, security is a major requirement. All connections must use HTTPS so data is encrypted in transit. Passwords should be stored safely using hashing, and user roles (student, instructor, admin) should be enforced to make sure people only have access to the parts of the system they are supposed to. Regular monitoring and logging are also important to quickly catch any problems with performance or errors.

Overall, the system needs to combine simple hardware requirements for the users with strong server software, a relational database, cloud hosting, and secure payment and notification services. These technical requirements are what will allow the DriverPass system to reliably deliver the functions shown in my UML diagrams.