CS 255 System Design Document Template

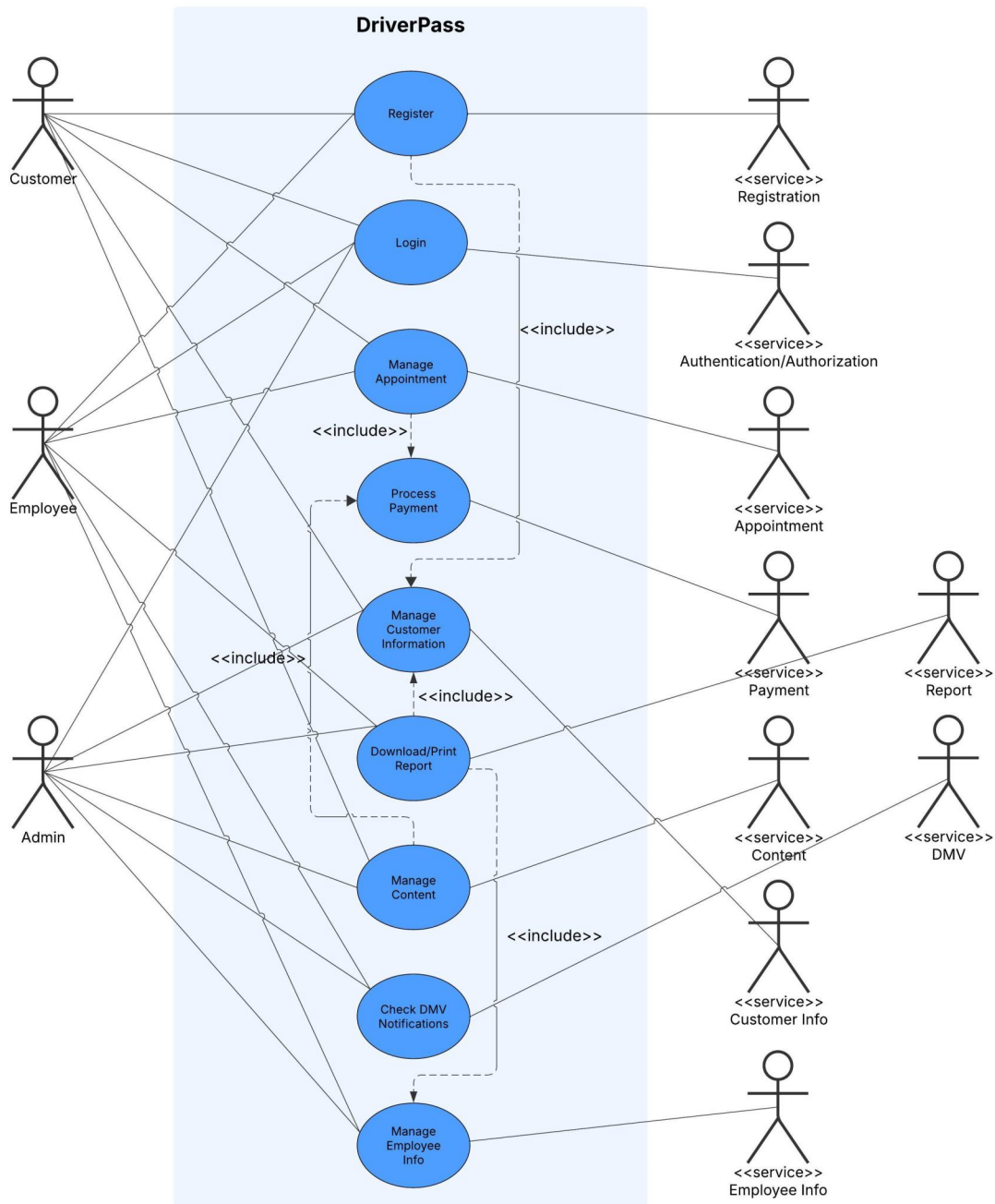*CS255*
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Aidan Farhi
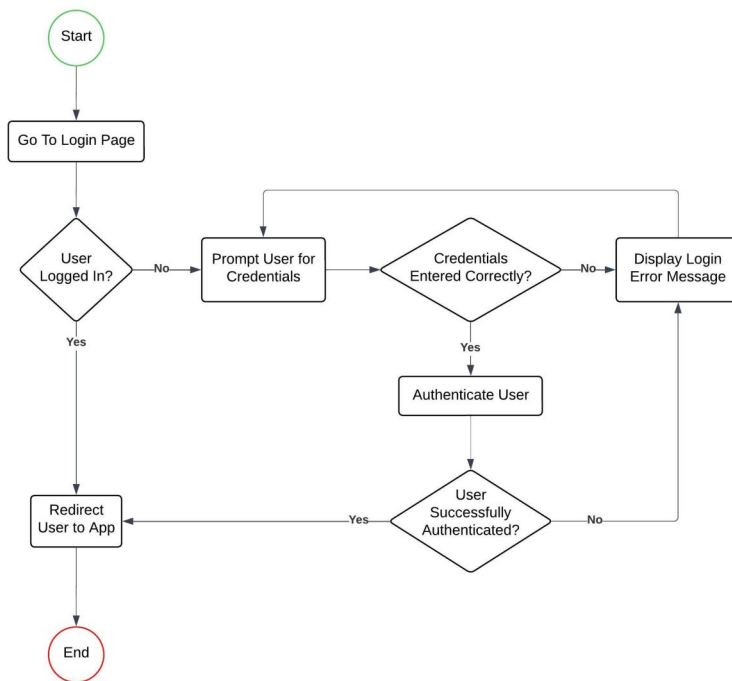
UML Diagrams

UML Use Case Diagram
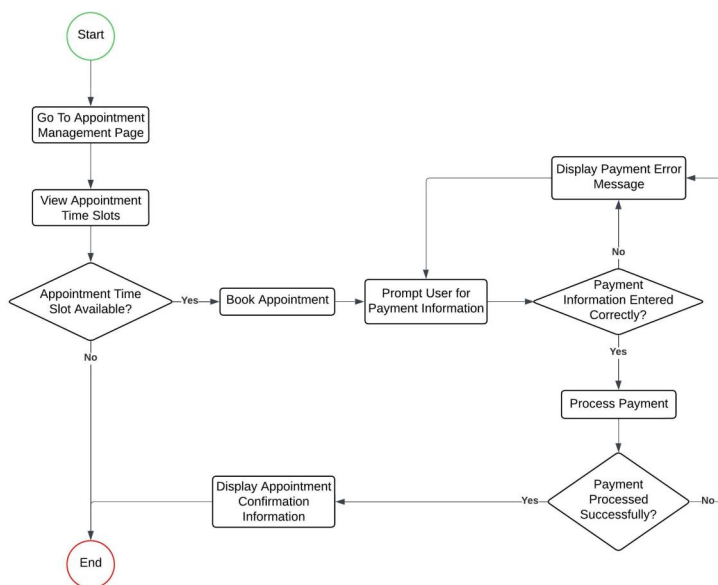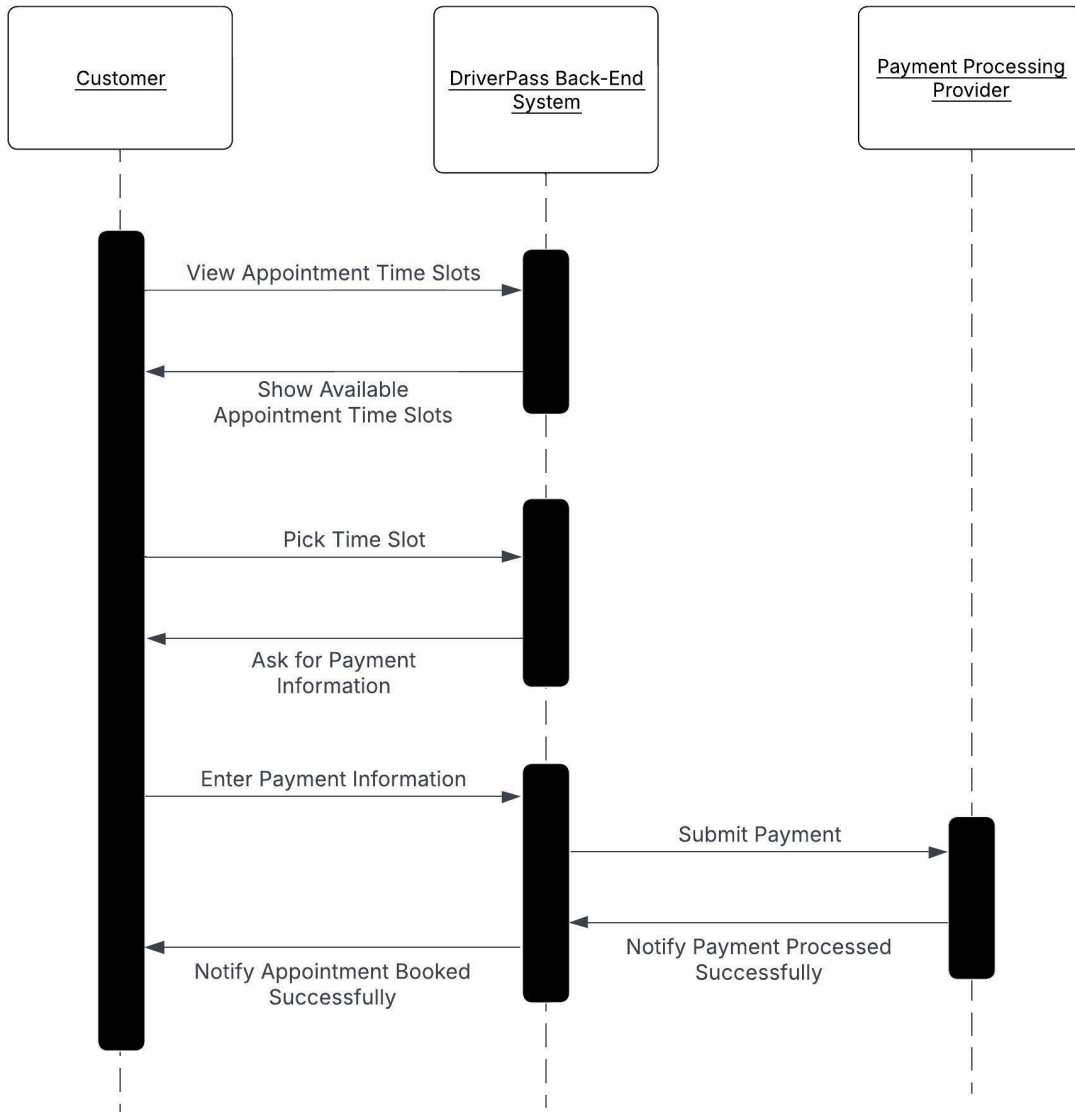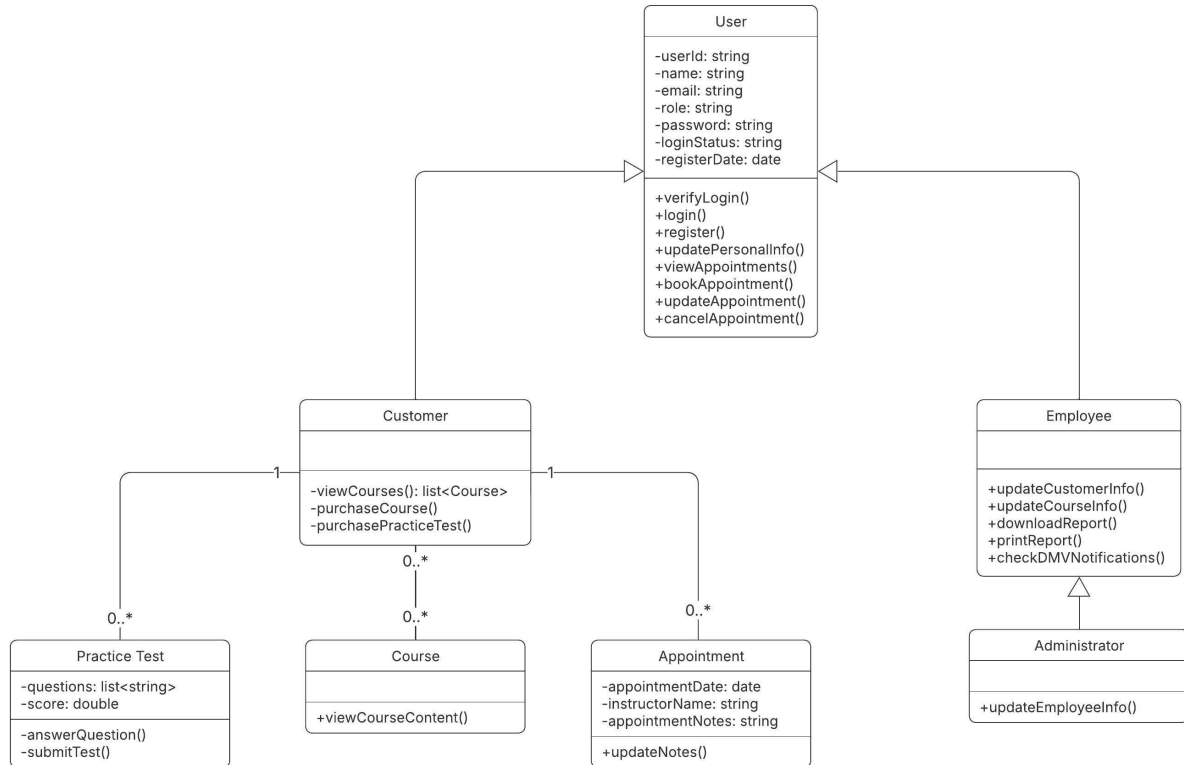
UML Activity Diagrams

Activity Diagram | Login

Activity Diagram | Book Appointment

UML Sequence Diagram

UML Class Diagram

Technical Requirements

The DriverPass system needs an application server and a server to run the database. Each server should have sufficient CPU, RAM, and SSD to handle the anticipated workload. Both of these servers can be virtual machines provisioned on a cloud provider.

The system shall be accessed by PCs, laptops, tablets or smartphones with internet access. The front-end logic will be coded in a combination of HTML, CSS, and JavaScript. The back-end logic can be built with Java, Go, PHP, or JavaScript. If the development team is comfortable with a specific set of frameworks, languages, and tools, those should be prioritized to expedite development.

The database should utilize a relational database management such as PostreSQL or MySQL. Security best practices must be implemented, including HTTPS with TLS, Argon2 password hashing, role-based access control, and rate limiting to prevent DDoS attacks. All data should be encrypted at rest.

To ensure a seamless and organized development process, the engineering team should use version control with Git and adopt CI/CD practices. Containerization of the application would be an excellent choice to ensure platform agnostic deployments and smoother integrations.

The system needs to integrate with the DMV as well as a secure payment service like Stripe or PayPal for transaction and payment processing. All interactions with third-party APIs should be thoroughly documented and understood by the engineering team.

Comprehensive testing should be conducted during and after development to maintain high standards of quality assurance. Once the system is successfully implemented, training sessions should be held for all employees and administrators to ensure efficient management and usage of the system.