# CS 255 System Design Document Template

## UML Diagrams

### UML Use Case Diagram

A diagram of a driverpass system

AI-generated content may be incorrect.

### UML Activity DiagramsA screenshot of a computer screen AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

### UML Sequence Diagram

A diagram of a software system

AI-generated content may be incorrect.

### UML Class Diagram

A diagram of a customer

AI-generated content may be incorrect.

## Technical Requirements

* Deployment: Cloud-hosted web app, single region, containerized on a managed service
* Frontend: React, modern browsers; basic accessibility
* Backend: REST/JSON API, server-side validation; OPENAPI spec
* Auth & Roles: Email/password, hashed with bcrypt/Argon2; email verification & reset; RBAC for Customer, Instructor, Secretary, Administrator, IT Officer
* Core Features:
  + Scheduling: conflict-free booking with 24-hour cancellation rule
  + Learning/Tests: modules, randomized questions, scoring, attempt history
  + Commerce: package catalog, purchases, payment gateway, receipts
  + Notifications: email/SMS for confirmations and reminders
* Data: Relational DB. Tables for User, Lesson, Vehicle, Availability, TrainingPackage, Purchase/Payment, PracticeModule, Question/Answer, TestAttempt, Notification, AuditLog
* Security: TLS 1.2+, encryption at rest, least-privilege IAM, input validation, CSRF/XSS protection, rate limiting, audit logging
* Reliability: Daily backups with restore resting; basic DR
* Observability: Centralized logs/metrics and alerts; error tracking
* DevOps/Tools: Git repo, CI/CD pipeline, laC, test automation
* Client Requirements: Works on latest Chrome/Edge/Firefox/Safari; mobile friendly