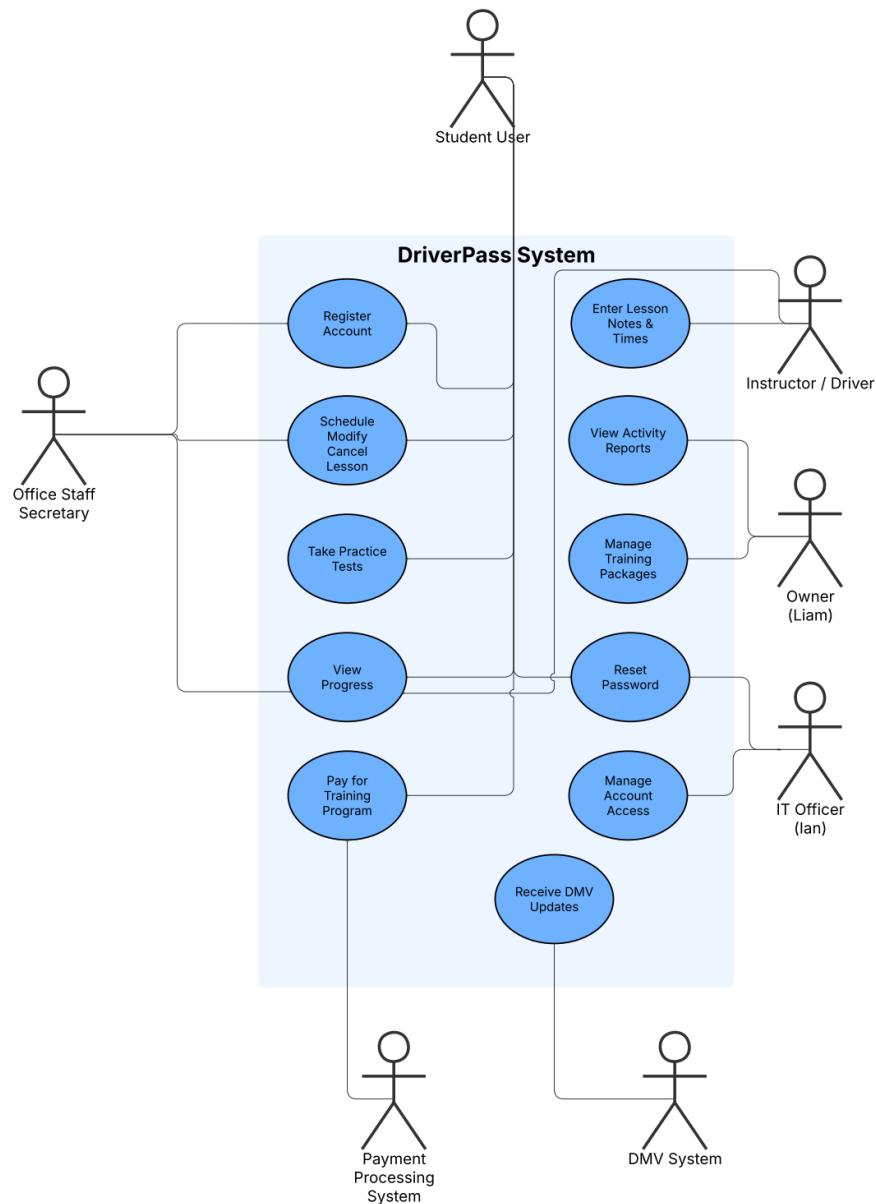


CS 255 System Design Document

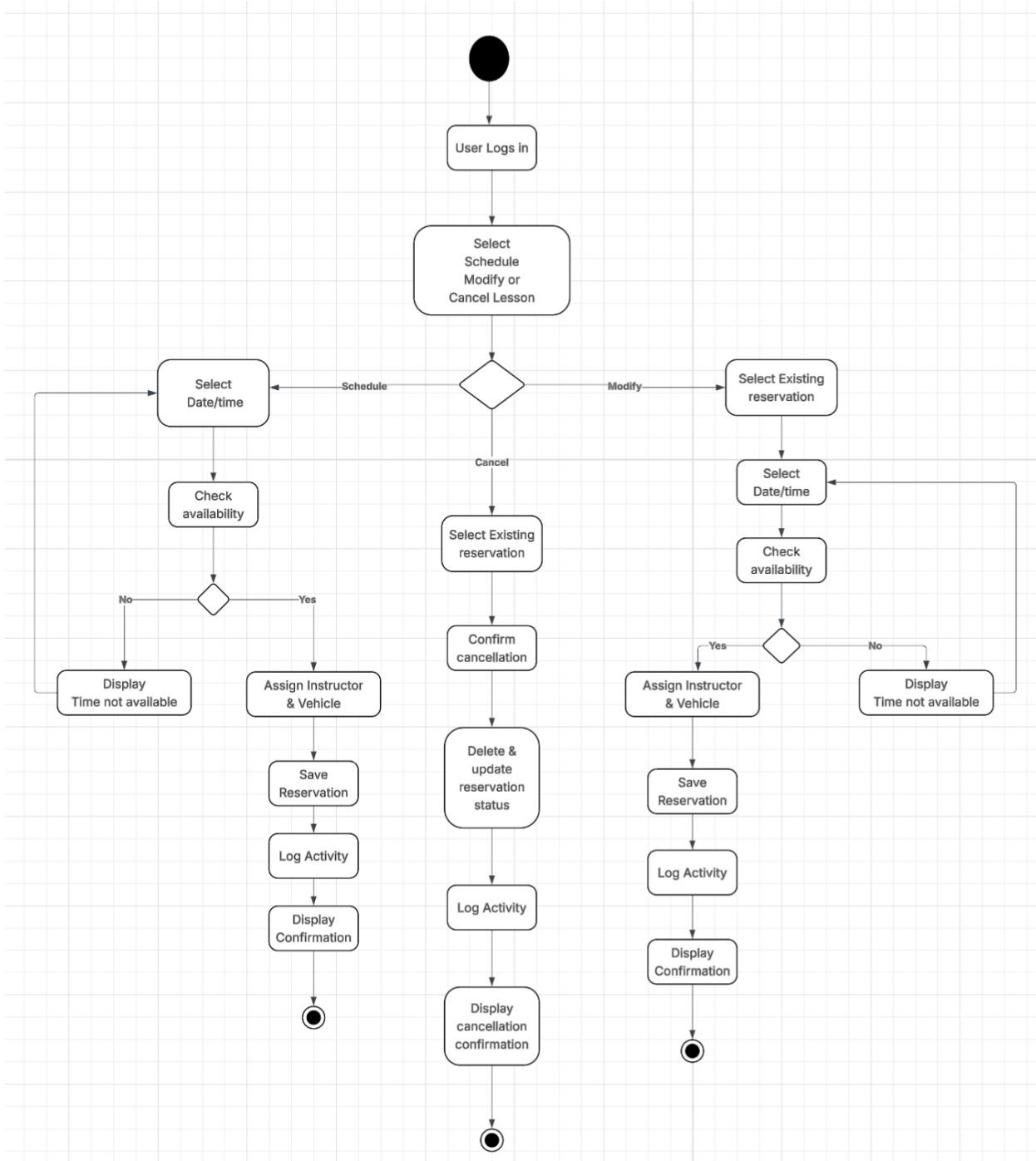
UML Diagrams

UML Use Case Diagram

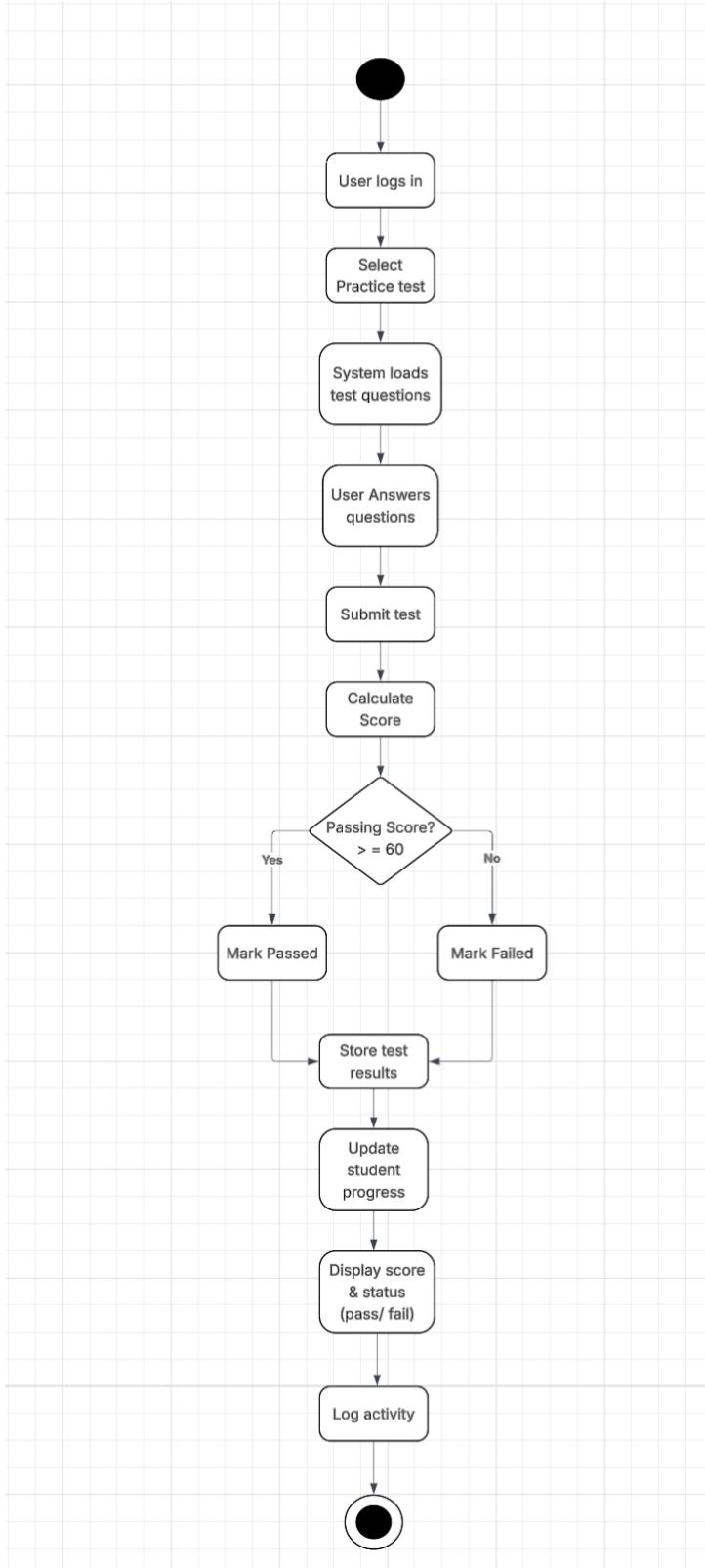


UML Activity Diagrams

Schedule / Modify / Cancel a Lesson:

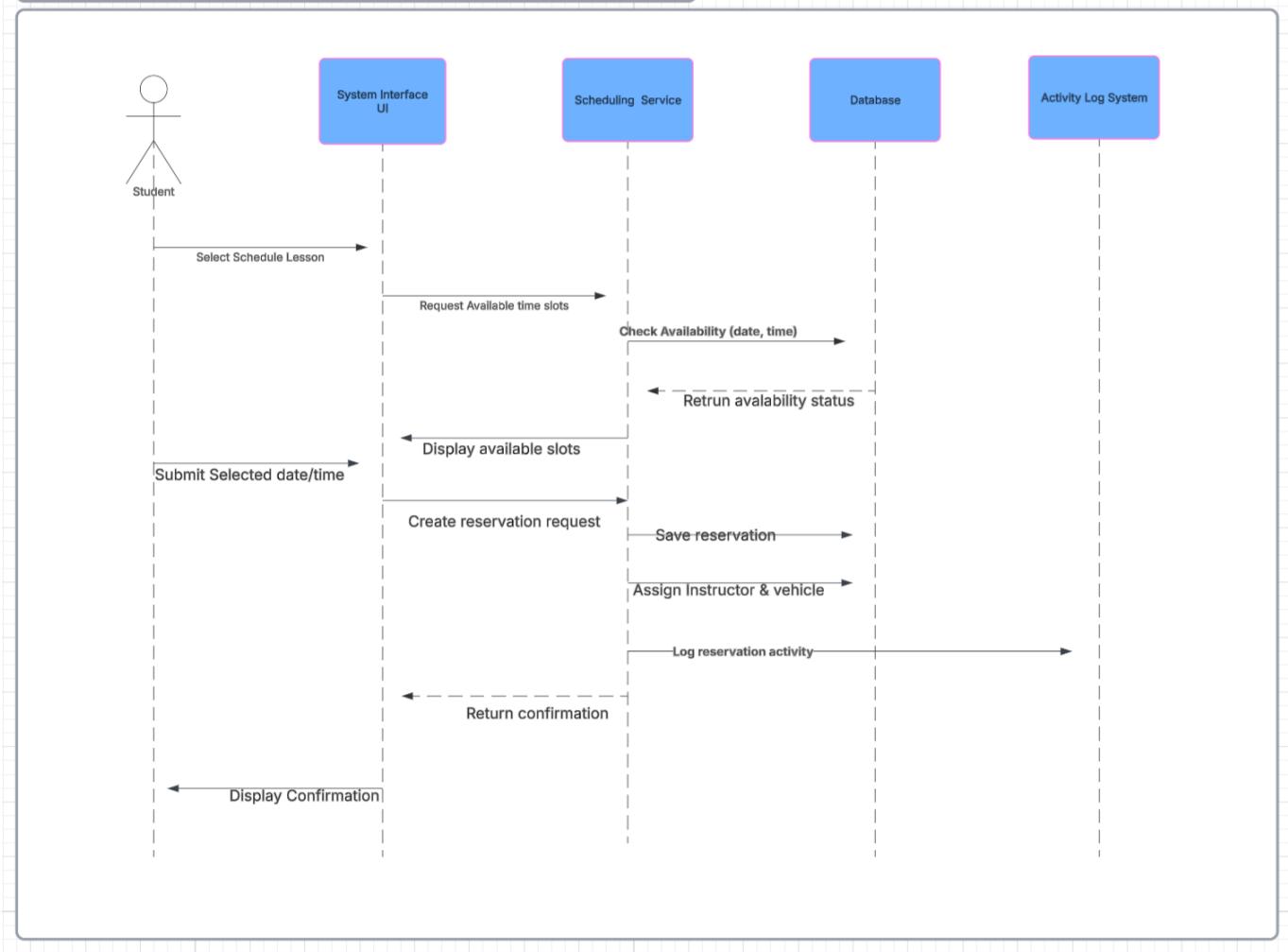


Take Practice Test:

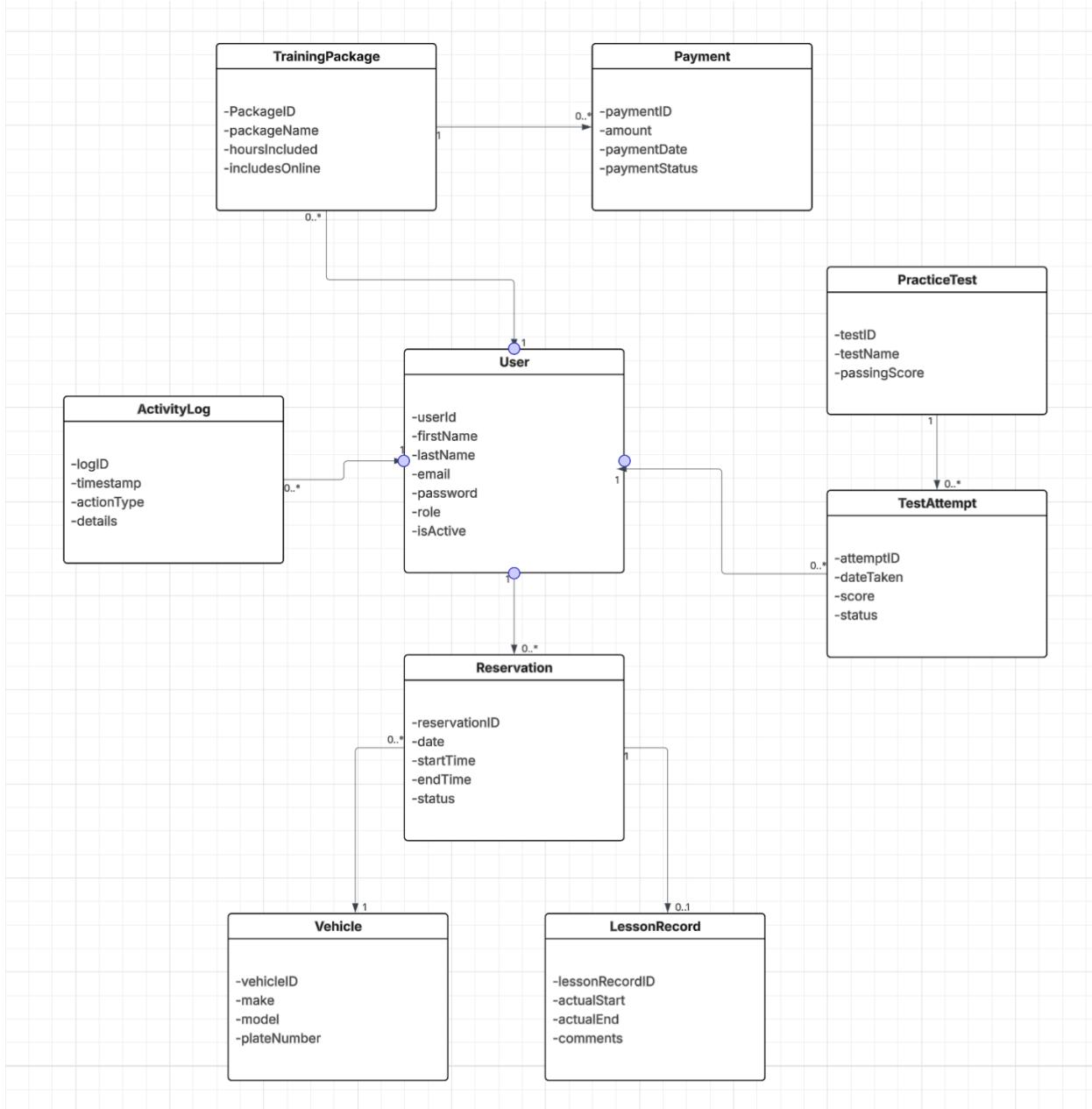


UML Sequence Diagram

Sequence diagram - Schedule Lesson



UML Class Diagram





Technical Requirements

Hardware Requirements

Client-side Hardware

Desktop, laptop, tablet, or smartphone capable of running modern web browsers
Reliable internet connection
Standard input/output devices (keyboard, mouse, touchscreen)

Server-side Hardware (cloud hosted)

Cloud based virtual servers
Scalable processing power to support concurrent users
Secure storage for database & application files
Redundant backup storage

Software Requirements

Web-based application accessible through modern web browsers
Relational database management system
Web browser compatibility

Infrastructure Requirements

Cloud hosting

System hosted on a secure cloud platform
Automatic scaling to support increased usage
24/7 availability

Network

HTTPS secure communication
Encrypted data transmission

Backup & Recovery

Daily automated database backups
Disaster recovery plan
Data redundancy across servers

Security Requirements

Role based access control
Secure password storage using encryption or hashing
Account lockout after multiple failed attempts
Activity logging for all reservation changes
Secure payment processing via 3rd party payment gateway



Encrypted storage of sensitive data

Integration Requirements

Integration with 3rd party payment processing system

Ability to receive DMV updates for rules, policies, & practice test questions

Performance Requirements

System must support simultaneous access by students, instructors, & administration staff

Page load times must meet usability standards & provide responsive user experience

Real time availability checking for reservations.