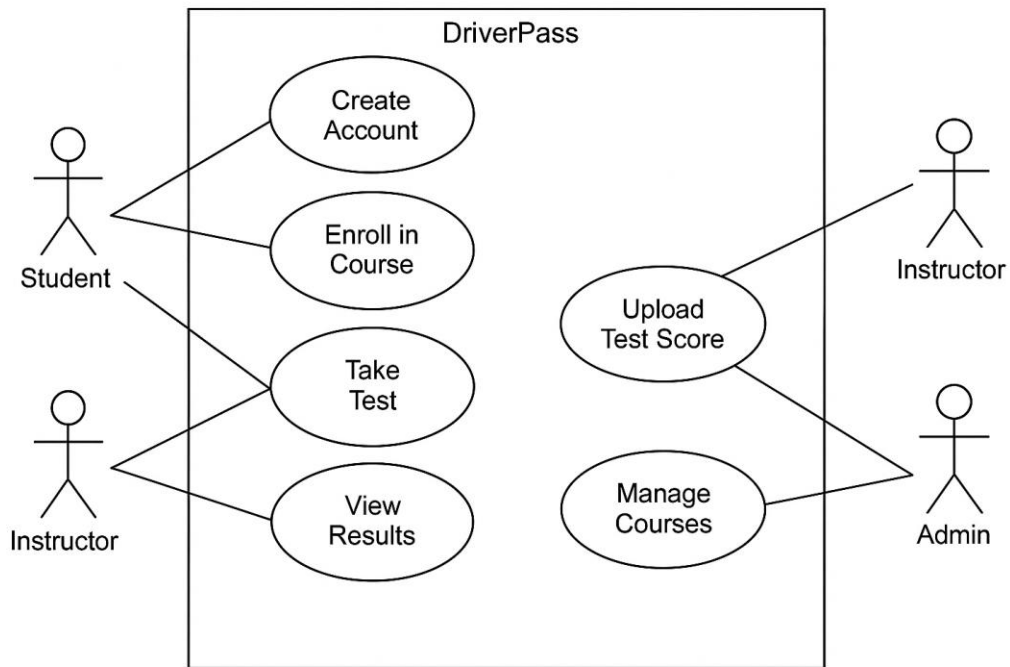


CS 255 System Design Document

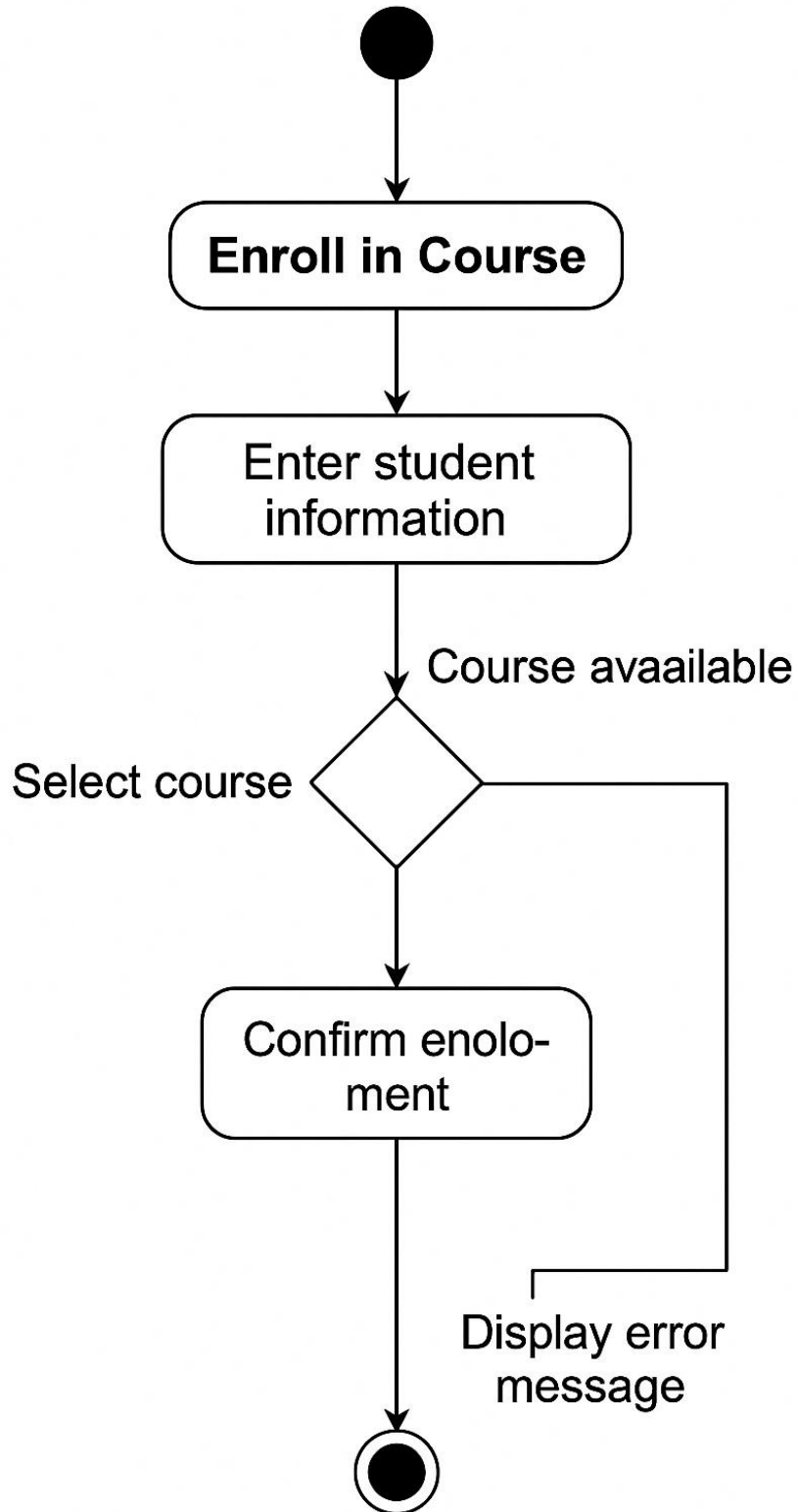
UML Use Case Diagram

The use case diagram for DriverPass identifies the main actors—Students, Instructors, and Admins—and their interactions with the system. Students can create accounts, enroll in courses, take tests, view results, and schedule sessions. Instructors can upload test results and manage student lists. Admins oversee course management and user account control.



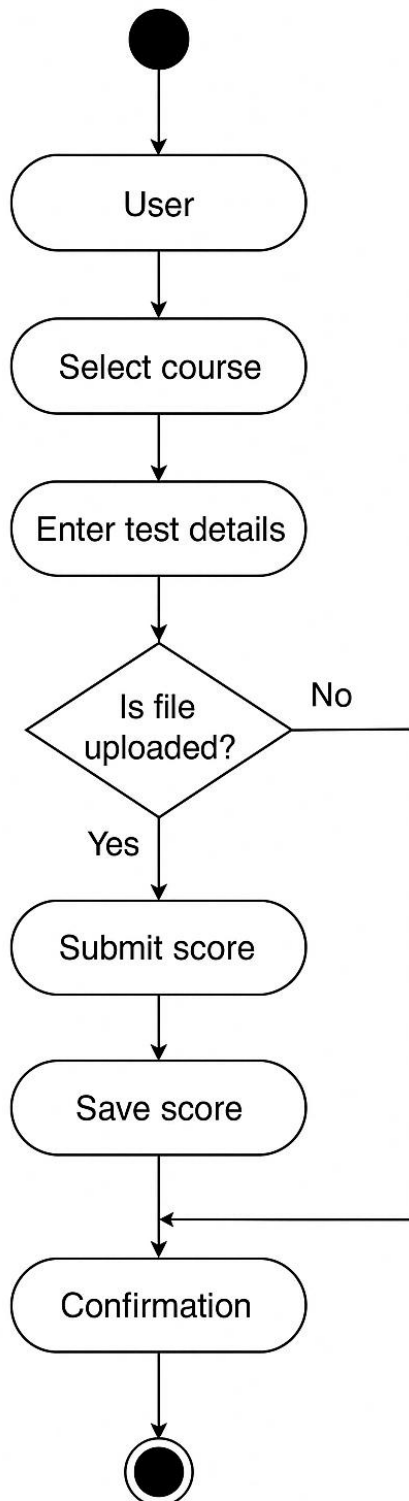
UML Activity Diagrams

Activity Diagram 1: Enroll in Course



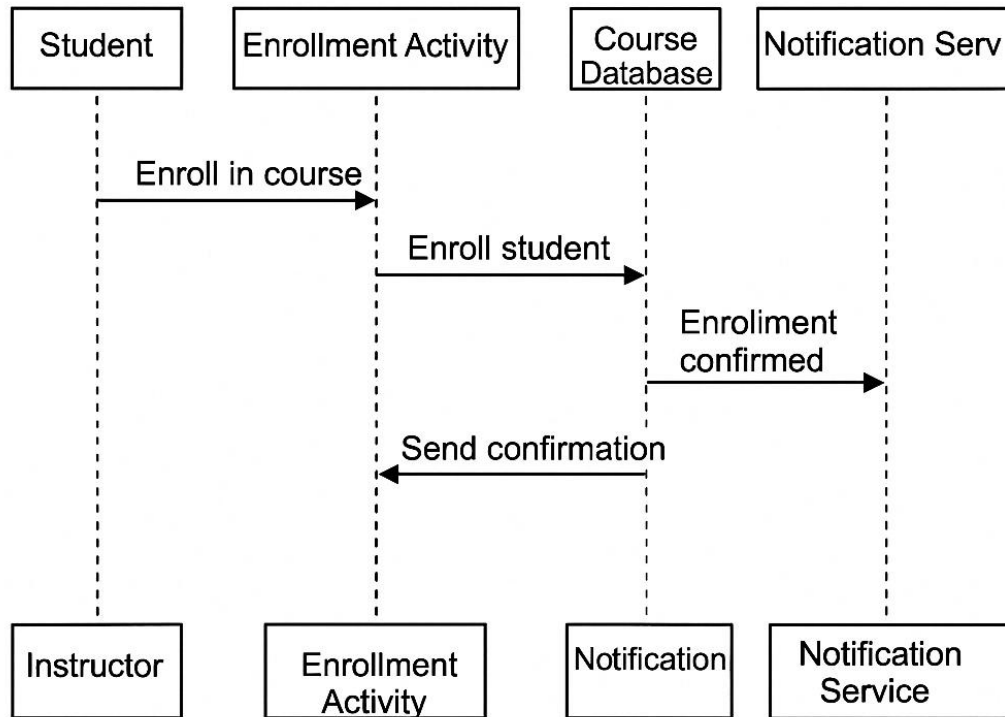
Activity Diagram 2: Upload Test Score

Upload Test Score



UML Sequence Diagram

This sequence diagram outlines the interaction between the Student, Web Portal, Course Service, and Database when enrolling in a course. It shows the flow of messages and how data is checked and returned.

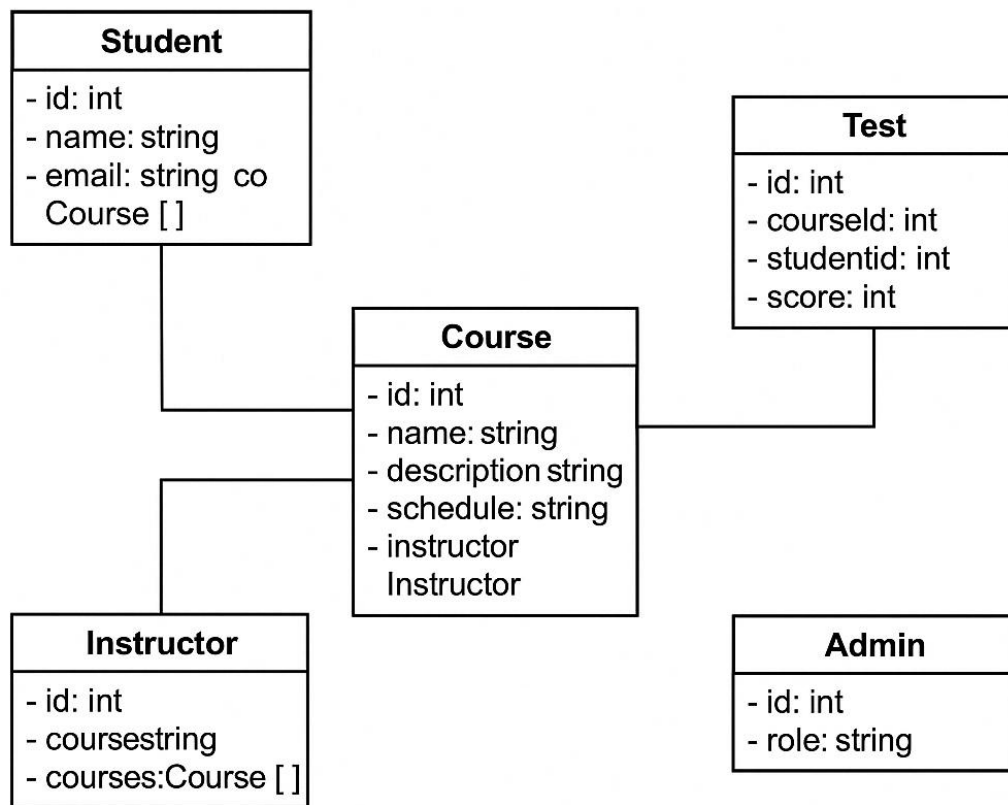


UML Class Diagram

The class diagram includes:

- Student (id, name, email, enrolledCourses[])
- Instructor (id, name, courses[])
- Course (id, name, description, schedule, instructor)
- Test (id, courseId, studentId, score)
- Admin (id, role)

These classes and attributes represent the core data structure for the DriverPass system.



Technical Requirements

The DriverPass system will require the following hardware, software, tools, and infrastructure:

Hardware:

- Web server with 8GB RAM, 4-core processor
- Client access from laptops, desktops, and tablets with internet connectivity

Software:

- Operating System: Linux (server), Windows/macOS (client)
- Backend Framework: Spring Boot
- Frontend Framework: React.js
- Database: MySQL
- Web Browser: Chrome, Firefox, Safari

Tools:

- Lucidchart for UML modeling
- Git and GitHub for version control
- Eclipse or Visual Studio Code as IDEs

Infrastructure:

- Secure cloud hosting with HTTPS
- OAuth 2.0 or JWT for user authentication
- Firewall and role-based access control
- Daily backup and recovery plan

These requirements ensure the system is scalable, secure, and accessible for all users.