

Faculty of Technology and Engineering

Chandubhai S. Patel Institute of Technology Department of Computer Science & Engineering

Date: 08 / 08 / 25

Laboratory Manual Performa

Academic Year	:	2025-26	Semester	:	5 TH
Course code	:	CSE301	Course name	:	SOFTWARE ENGINEERING

Practical - 7

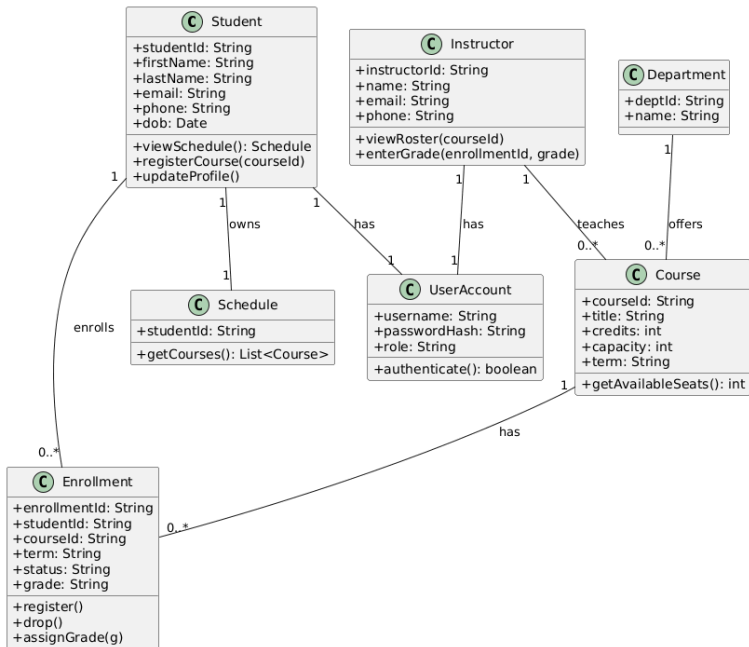
Problem Description:

To develop comprehensive design documents using both Object-oriented and Procedure-oriented methodologies, utilizing relevant tools

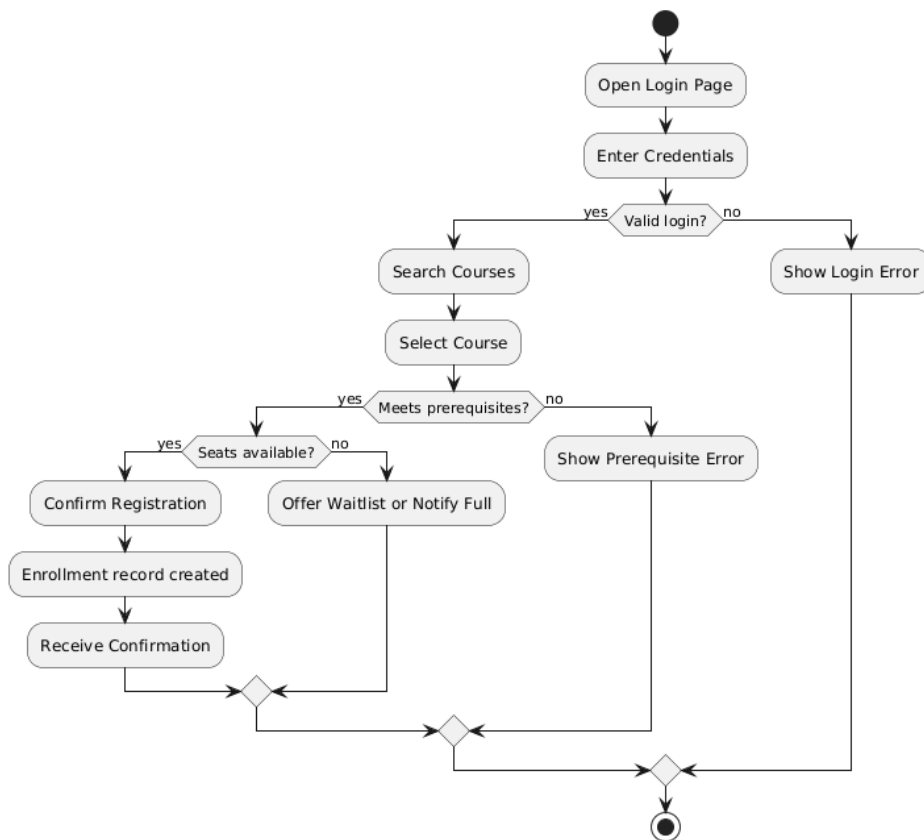
Scenario: You have been tasked with developing a student registration system for a university. The system should allow students to register for courses, view their schedule, and update their personal information. Additionally, instructors should be able to view class rosters and enter grades. The university administration requires a comprehensive design document that covers both Object-oriented and Procedure-oriented methodologies.

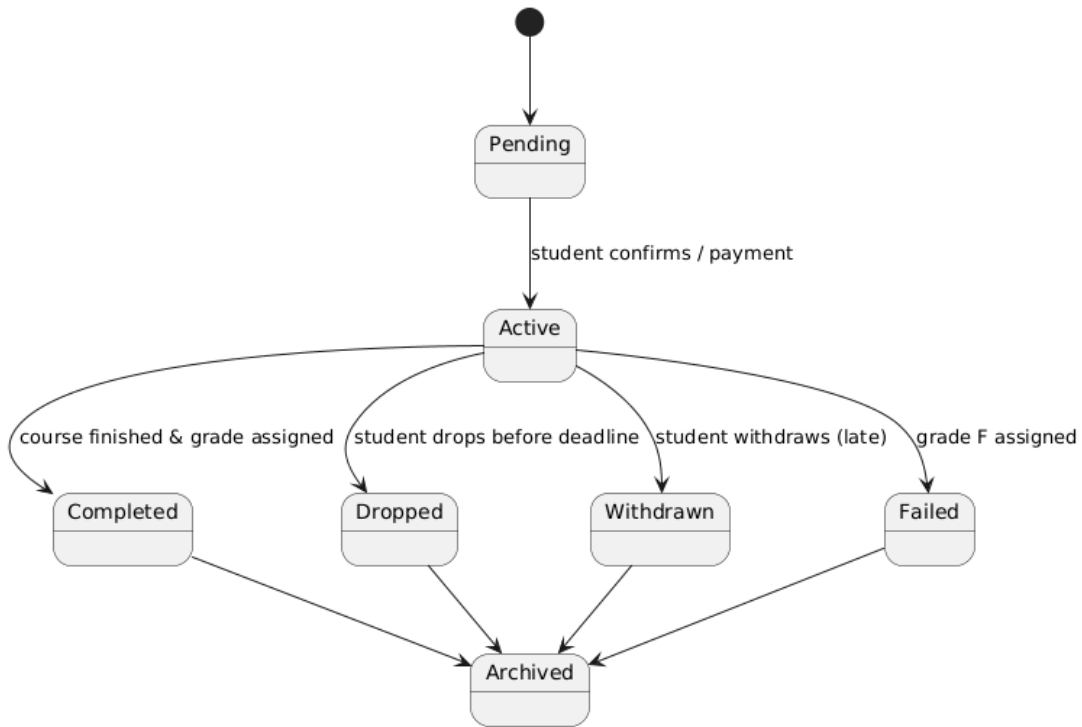
Object Oriented Methodology:

Class Diagram:

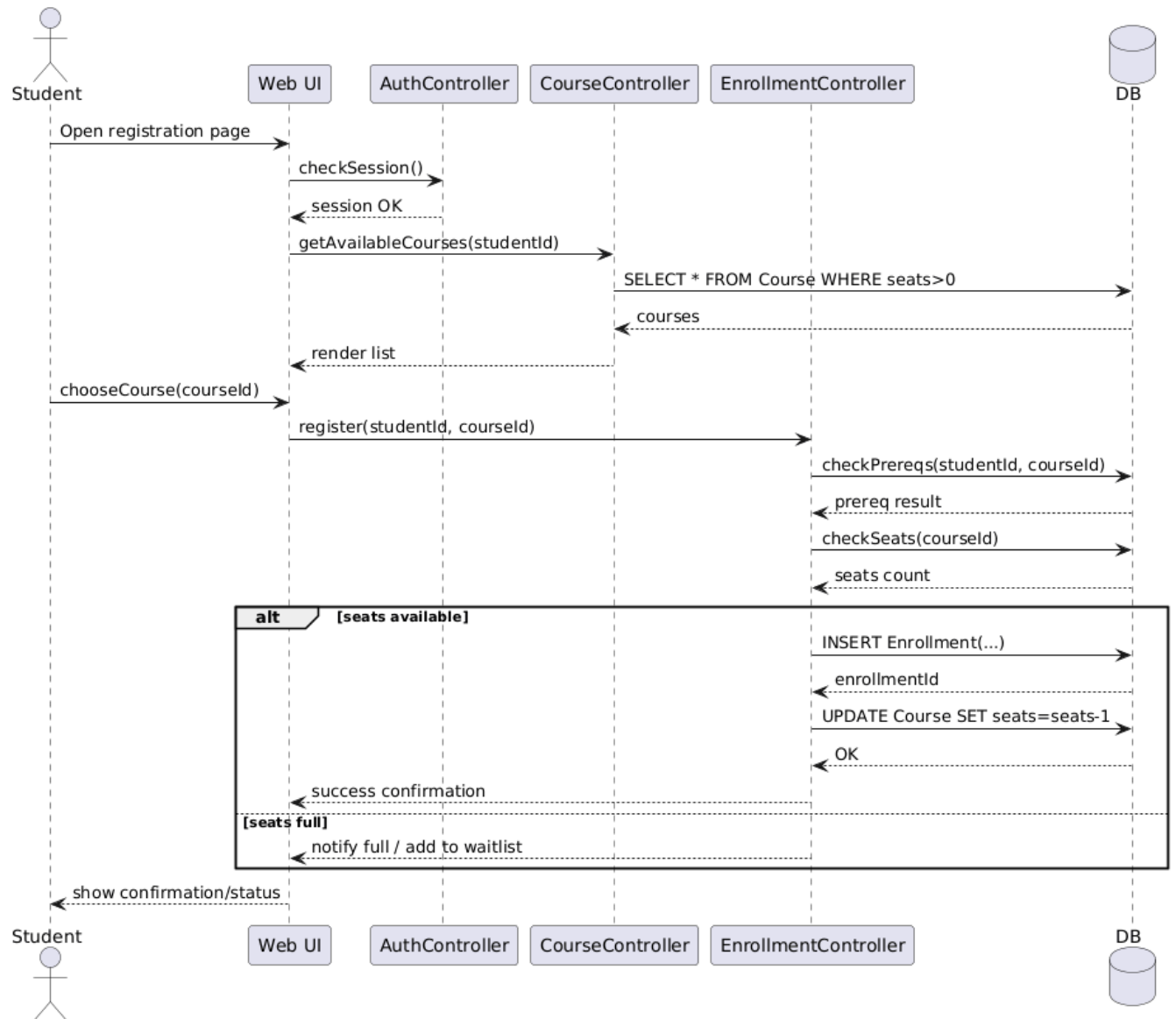


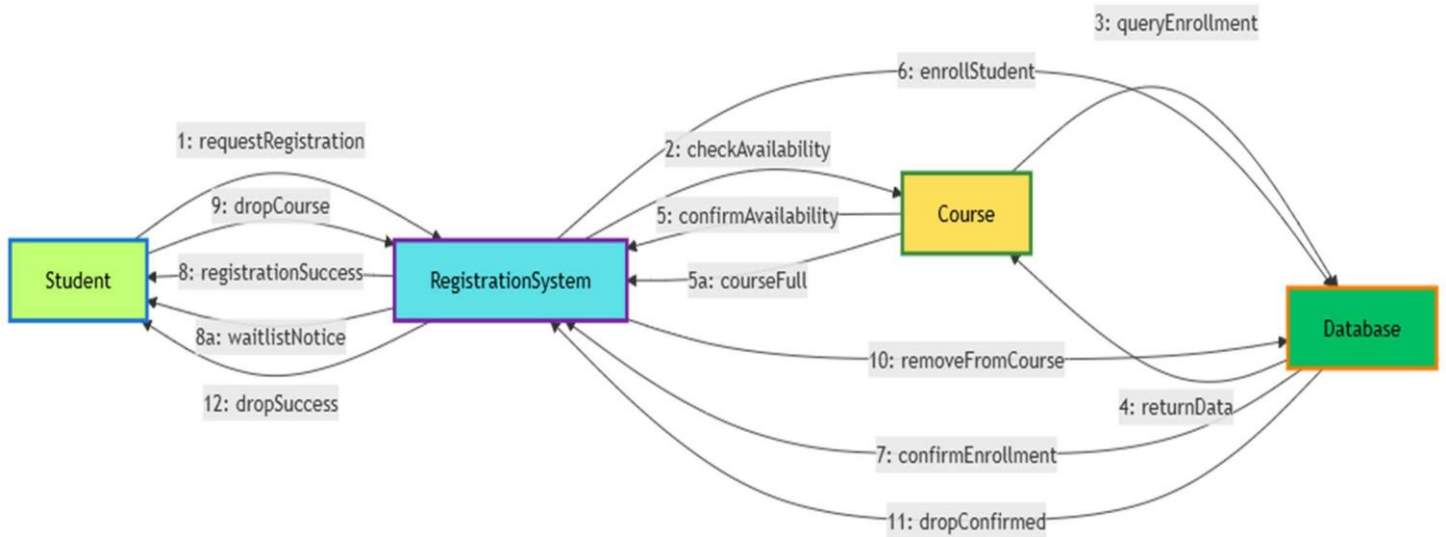
Activity Diagram:



State Chart Diagram:

Sequence Diagram:



Collaboration Diagram:**UI Design:**

Student Registration System

Manage your academic journey with ease

Switch to Instructor View

Registration

Course Selection

Schedule

Profile

Student Registration Form


Student ID

Full Name

Email Address

Phone Number

REGISTER STUDENT

 **Student Registration System**
Manage your academic journey with ease


Switch to Inst

Registration

Course Selection

Schedule

Profile

 **Course Selection Interface**

Search courses by name, code, or instructor...

12


Available Courses

CS101-01 - Introduction to Programming
Instructor: Dr. Smith
Schedule: MWF 10:00-11:00 AM
Credits: 3 | Available: 15/30
Prerequisites: None

MATH205-02 - Calculus II
Instructor: Prof. Johnson
Schedule: TTH 2:00-3:30 PM
Credits: 4 | Available: 8/25
Prerequisites: MATH101

ENG100-03 - English Composition
Instructor: Dr. Davis
Schedule: MWF 1:00-2:00 PM
Credits: 3 | Available: 20/30
Prerequisites: None

ENROLL IN SELECTED COURSES

 **Student Registration System**
Manage your academic journey with ease


Switch to Instructor View

Registration


Course Selection

Schedule

Profile

 **My Schedule**

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM					
10:00 AM	CS101 Programming Room 204		CS101 Programming Room 204		CS101 Programming Room 204
1:00 PM	ENG100 Composition Room 101		ENG100 Composition Room 101		ENG100 Composition Room 101
2:00 PM		MATH205 Calculus II Room 305		MATH205 Calculus II Room 305	

 **Student Registration System**
Manage your academic journey with ease


Switch to Instructor View

Registration

Course Selection

Schedule

Profile

 **Profile Update Form**

Full Name

Nisarg Patel

Email Address

nisarg@university.edu


Phone Number

(555) 123-4567

Address

123 Main St, City, State 12345


UPDATE PROFILE

 **Student Registration System**
Manage your academic journey with ease

Switch to Student View


Class Roster

Grade Entry

 **Class Roster Viewer**

Select Course


Student ID	Name	Email	Enrollment Date	Status
123456	John Doe	john.doe@university.edu	2024-08-25	Enrolled
123457	Jane Smith	jane.smith@university.edu	2024-08-26	Enrolled
123458	Mike Johnson	mike.johnson@university.edu	2024-08-27	Waitlisted

 **Student Registration System**
Manage your academic journey with ease

Switch to Student View

Class Roster

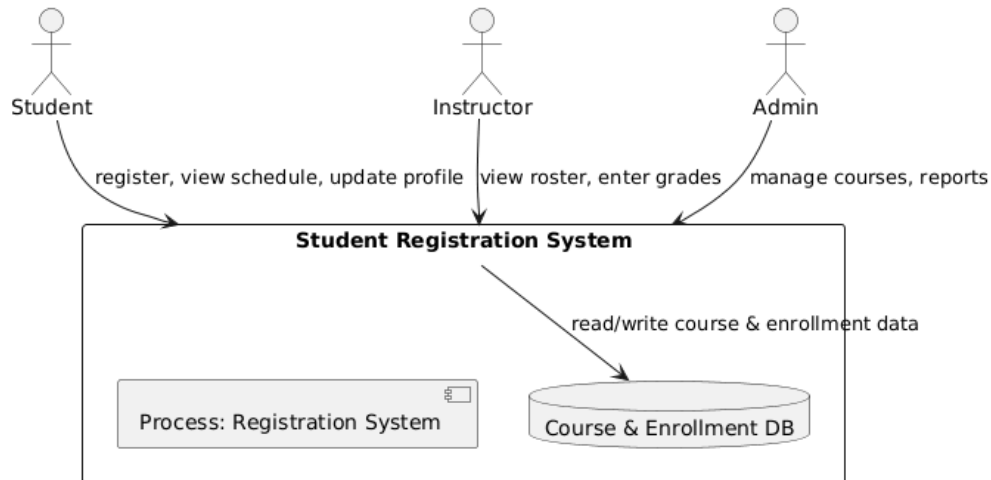
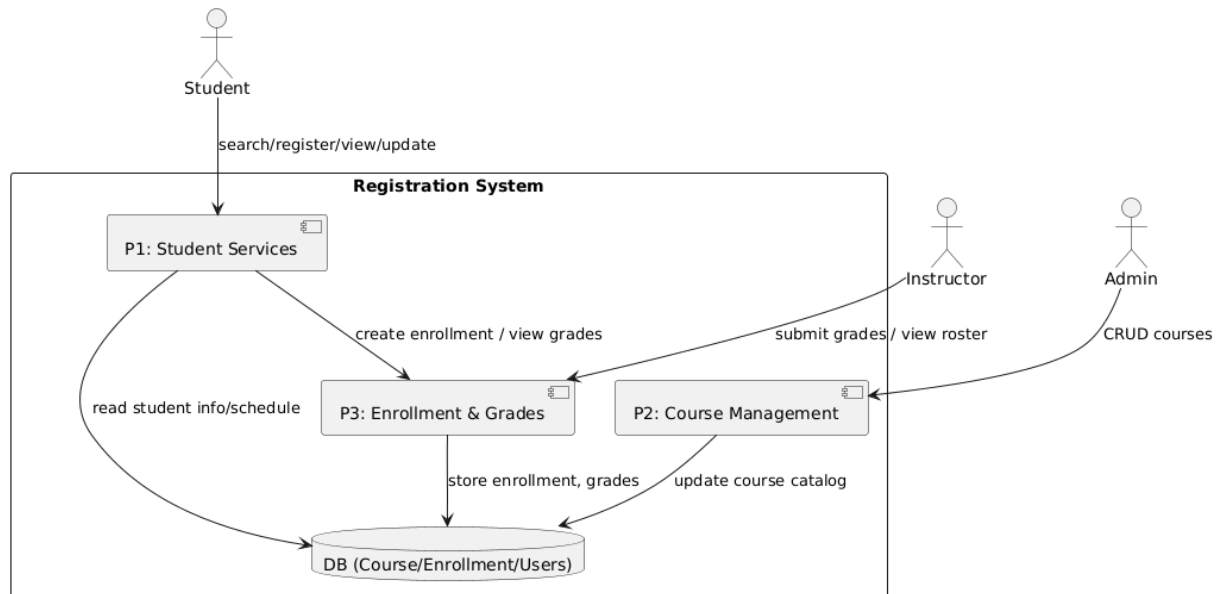
Grade Entry

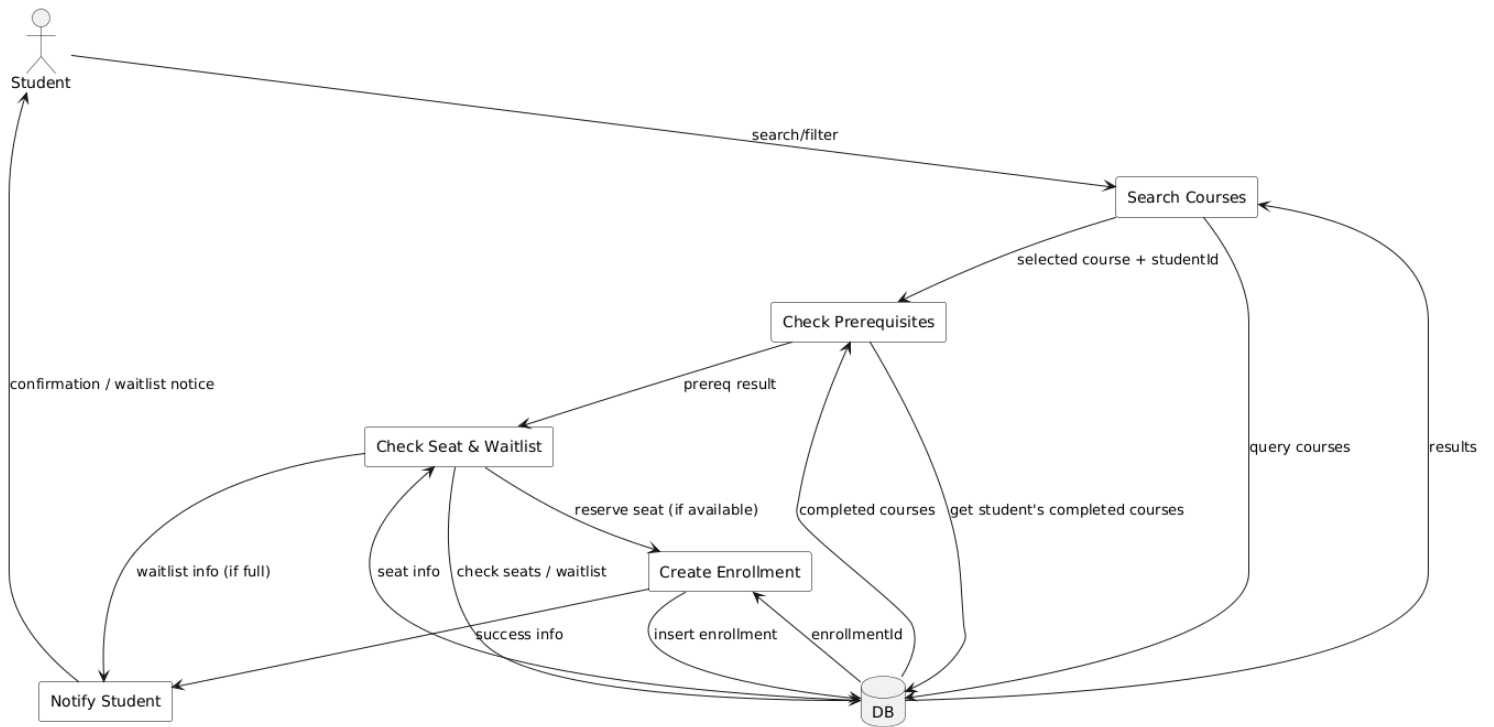
 **Grade Entry Form**

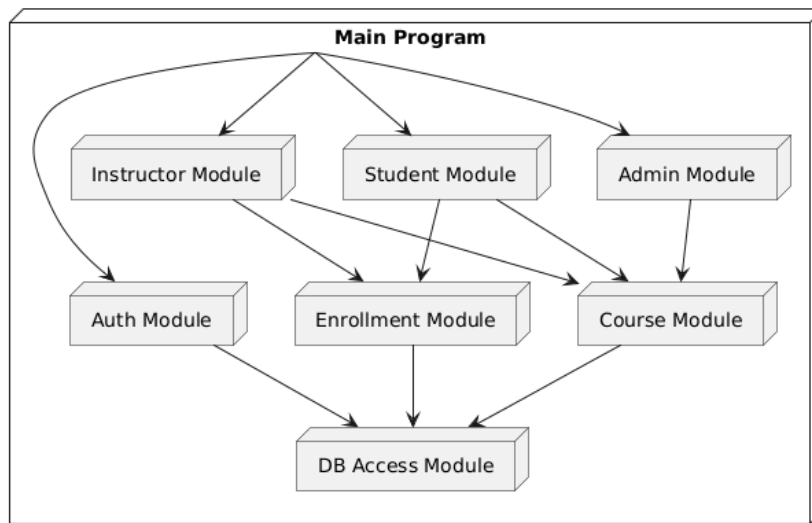
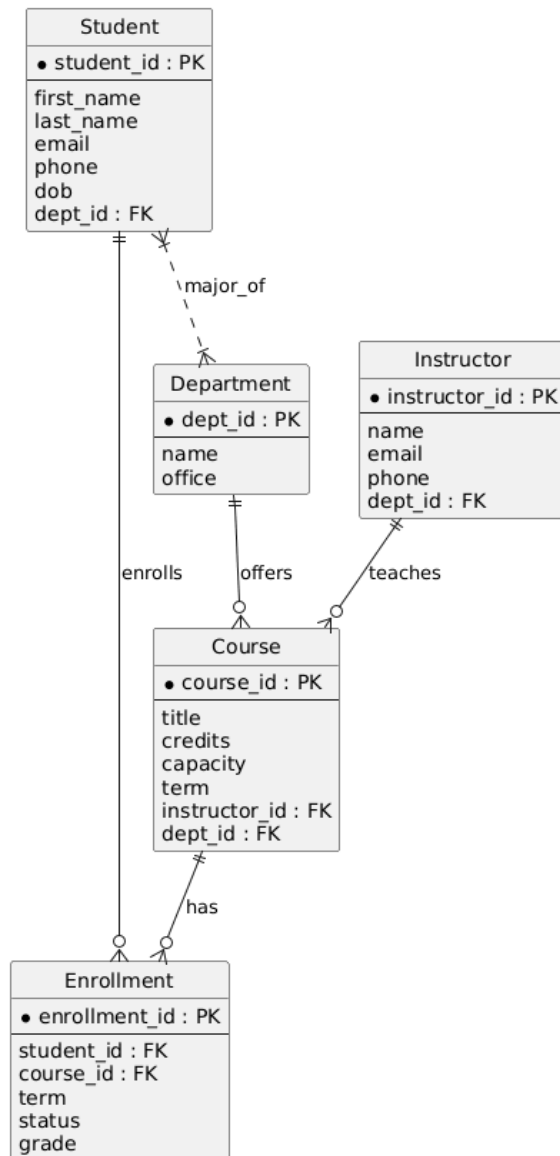
Select Course

Student ID	Name	Current Grade	New Grade	Action
123456	John Doe	B+	<div>Grade</div>	<div>UPDATE</div>
123457	Jane Smith	A-	<div>Grade</div>	<div>UPDATE</div>
123458	Mike Johnson	C+	<div>Grade</div>	<div>UPDATE</div>

SAVE ALL GRADES

Design Document:**Data Flow Diagram:****Level-0:****Level-1:**

Level-2:

Structure Chart Diagram:**E-R Diagram:**

Data Dictionary:**Student Registration System - Data Dictionary****Data Elements Definitions**

Element	Type	Description	Constraints	Example
studentID	Integer	Unique identifier for each student	Primary Key, Auto-increment, NOT NULL, Range: 100000-999999	123456
name	String	Full name of student or instructor	VARCHAR(100), NOT NULL, Alpha characters and spaces only	"John Smith"
email	String	Contact email address	VARCHAR(255), UNIQUE, NOT NULL, Valid email format	"john.smith@university.edu"
courseID	String	Unique course identifier	VARCHAR(10), Primary Key, NOT NULL, Format: DEPT###-##	"CS101-01"
schedule	String	Course schedule information	VARCHAR(200), NOT NULL, Format: Days/Time/Location	"MWF 10:00-11:00 Room 204"
grade	Char	Letter grade assigned to student	CHAR(2), Valid values: A+, A, A-, B+, B, B-, C+, C, C-, D+, D, F	"B+"