CSE 3063 OOSD - FALL 2022

JAVA PROJECT

REQUIREMENT

ANALYSIS DOCUMENT

STUDENT MANAGEMENT SYSTEM

CONTENTS

1. Vision:

The Student Management System coordinates the timing and communication between faculty members regarding students. This system is a simulation prepared upon the course registration of the students and the advisors' approval of this registration process after certain checks. In addition, courses and curriculum are determined, students can see their grades, and include student, instructor information.

2. Problem Description:

The problem is the software implementation of course registration and course passing processes during the undergraduate programs of the students. Solving problems such as course conflicts, taking courses from previous or next semesters, credit problems, course pass status checks encountered during the course registration process.

3. Requirements:

3.1 Functional Requirements:

- Registers new students.
- Register lessons and labs for a particular semester.
- Records the course details and subject information.
- Records the number of students attending to courses.
-According to syllabus, sets the course limit for students.
-Assigns an advisor to each student.
- Advisors arrange schedule of the students according to rules stated.
- Considers only solid lines in prereqrusite tree.
- Records the grades of students.

- Considers final grade and total course grade
-Advisor allows course selection based on the curriculum and student's total credit
-Calculates the grade point average of the students for each course and determines the letter grade.
-Calculates the pass grade for each course.
-Determines the pass or fail status according to the student's grade.
-Simulates the registration process for all students.
-Enrolls each student randomly for a course for her semester.

3.2 Non-Functional Requirements:

- Performance:
  The performance of the functions and every module should be well.
- Scalability:
  The system should be able to handle inputs of varying sizes.
- Compability:
  The system must be platform independent.
- Reliability:
  Output given by system should not be too different.
- Maintainability:
  The system is sustainable.

4. Use Cases:

Actor	Student
Basic Flow	The system produces a list of courses that the student can take. Student chooses the elective courses randomly and all mandatory courses he/she can take. Looking at this information, the advisor checks whether the student has reached the total course amount that student can take, the credit limit for that period, the course quota. Checks the student's course overlap and prerequisitecourse status. If all conditions are appropriate, adds the course has chosen for this student.
Goal	Course registration request

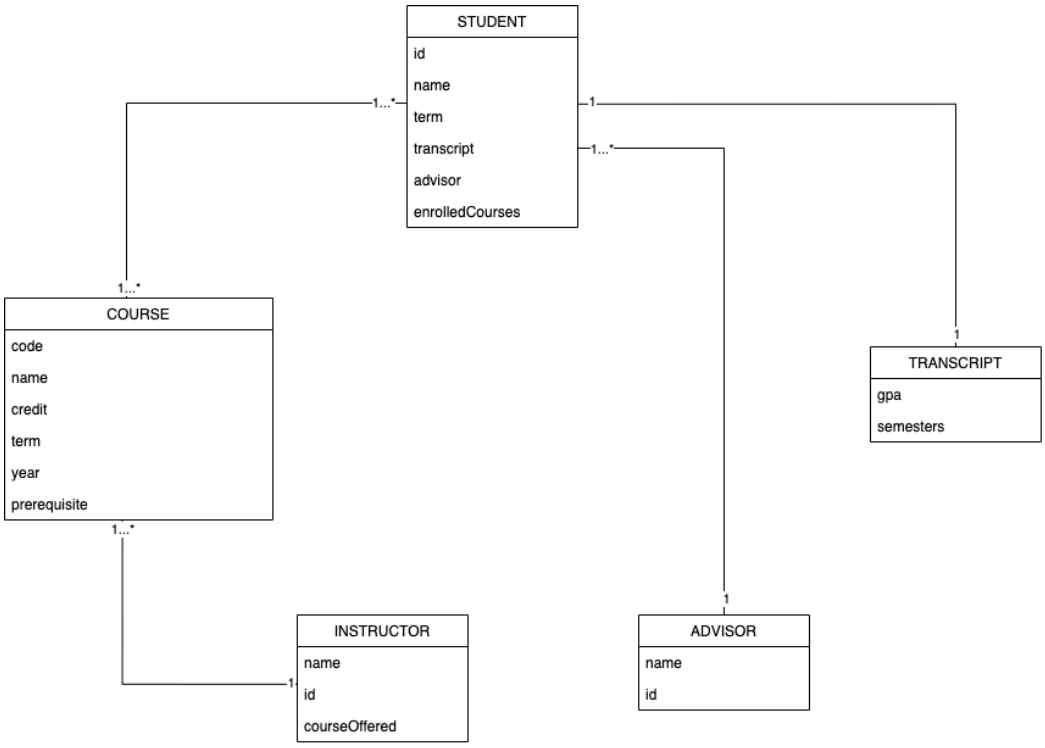
Actor	Department
Basic Flow	The system checks whether the course quota is more than the number of students enrolled in the course. If the conditionis met, it adds the student to the course. In the student deletion process, the system deletes the desired student fromthe course without checking.
Goal	Add and remove students from a course

Actor	Instructor
Basic Flow	The system requests the list of courses offered from the department and the list of students enrolled in this course from the advisor. Generates a number out of 4 using randomdistribution. Assigns this value to the given course of the students.
Goal	Grade students

Actor	Advisor
Basic Flow	System gets student list and avaliable course list. chooses a random course according to the curriculum. Course quota, course overlap, credit limit, prerequisite courses checks. If all conditions are met, system adds the student to the course.
Goal	Enroll students

Actor	System
Basic Flow	The system receives the current transcript of the student. It adds the information of the semester it is in to the transcript.Calculates the student's YANO . Converts grades to letter grades. Calculates GPA. Adds this new information to the transcript.
Goal	Calculate transcript

5. **Domain Model**:



6. Glossary:

-Advisor:

Arrange schedule of the students.

-Student:

Chooses the course.

-Student Semester:

Shows the grades of the student's current period.

-Pass Grade:

The minimum score a student must achieve to pass this course.

-Curriculum:

It holds the courses that must be taken for all semesters.

-Transcript:

It shows the grades for all semesters passed by the student and calculates the grade point average.

-Generator:

Generate students randomly.

-Enroll:

Enrolls students in courses.

-Elective Course:

A course that its population is formed by students who chose to take the course.