CSE 111 Fall 2024: Project Checkpoint 1
CubCourses
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Synopsis:
This project aims to develop a high school management system called CubCourses™. The system will help administrators, teachers, and students manage various aspects of the school's operations, including class enrollment, grading, club memberships, and faculty management. The system will have three main user roles: Student, Teacher, and Administrator.

The primary use case centers on a student's interaction with the system to enroll in classes and view their grades. Alternate use cases include teachers assigning grades to students and administrators giving themselves bonuses.

Student:
- View Classes: Students can see a list of available or enrolled classes.
- View Grades: Students can see their grades after the teacher assigns them.
- Enroll in Classes: Students can choose and enroll in the classes they want to attend.
- View Clubs: Before joining, students can view a list of available clubs to see what interests them
- Join Clubs: Students can join different clubs offered within the school.

Teacher:
- Receives Bonuses: Teachers may receive bonuses, which are managed by administrators
- Assign Grades: Teachers can assign grades to students for each class.
- Advise Clubs: Teachers may advise and supervise student clubs.

Administrator
- Manages Faculty: Administrators are responsible for managing the faculty at the school, including hiring new teachers.
- Manages Students: Administrators can add and remove students from the system.
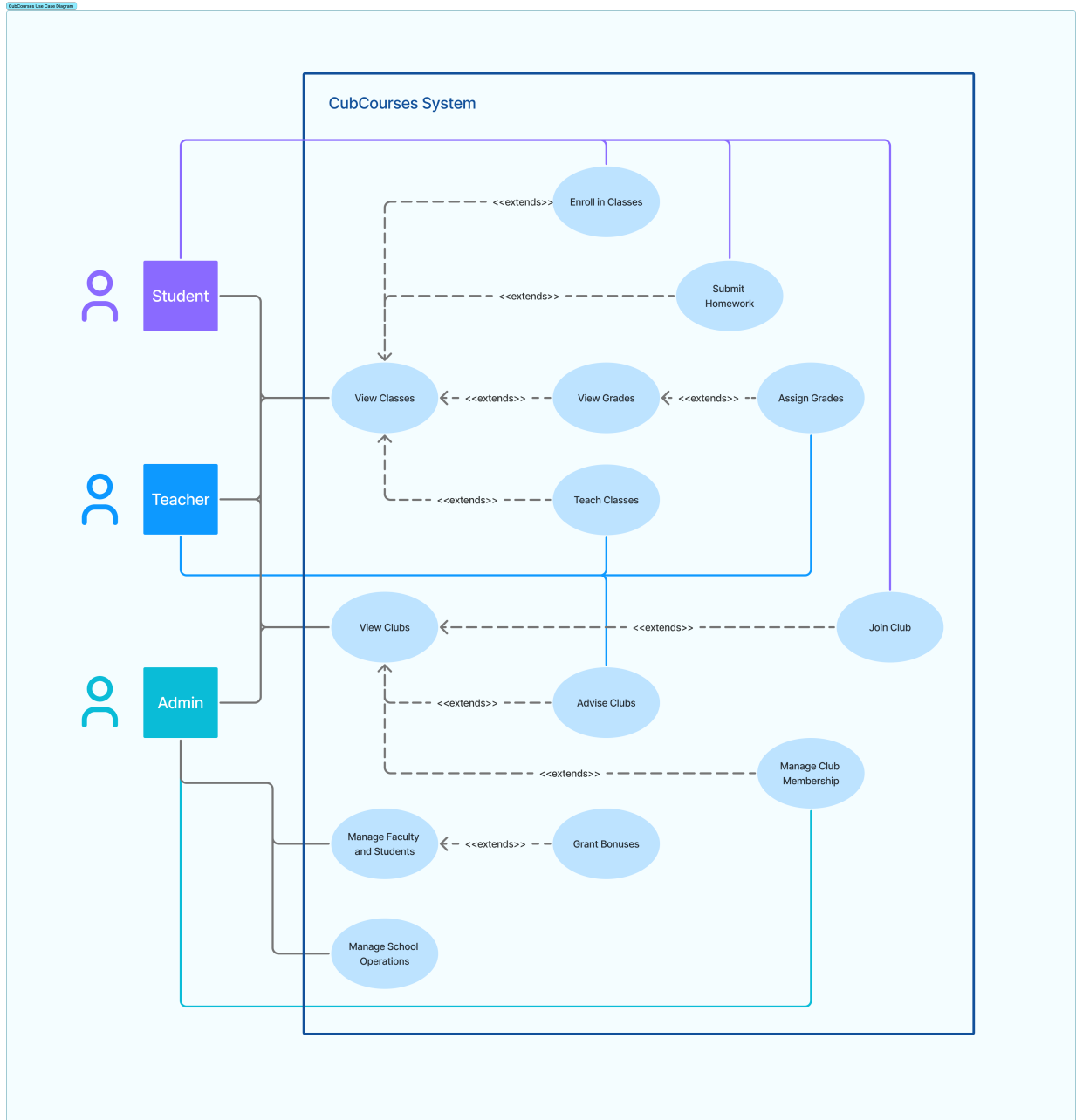- Grant Bonuses: Administrators may grant bonuses to faculty as a reward.
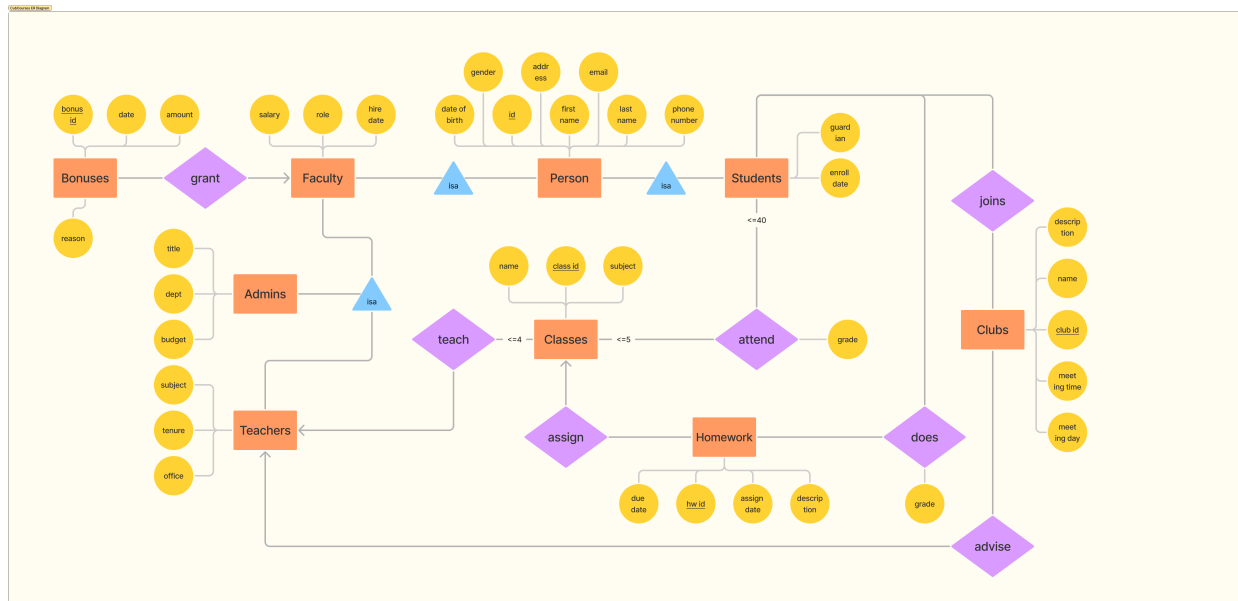
Main Use Case:
Student Viewing their Grades
1. The student logs into the system.
2. The student navigates to the View Classes use case, which displays all available classes.
3. The student selects a specific class from the list.
4. The teacher has used the Assign Grades use case, the student can see their grade for that class.
Post-condition: The student knows their grade in that class.

UML Use Case Diagram

CubCourses System

Student · Teacher · Admin

- Enroll in Classes
- Submit Homework
- View Classes
- View Grades
- Assign Grades
- Teach Classes
- View Clubs
- Join Club
- Advise Clubs
- Manage Club Membership
- Manage Faculty and Students
- Grant Bonuses
- Manage School Operations

ER Diagram

Relational Schema

Person(id, first_name, last_name, phoneNum, email, address, gender, dob)
Faculty(faculty_id, hire_date, role, salary)
Student(student_id, guardian, enroll_date)
Administrator(admin_id, position_title, department, budget_responsibility)
Teacher(teacher_id, subject, tenure, office)
Class(class_id, name, teacher_id, subject)
Grades(grade_id, grade, grade_date, comments)
Clubs(club_id, teacher_id, name, description, meeting_time, meeting_day)
Bonuses(bonus_id, date, amount, reason)

Teaches(class_id, teacher_id)
Advises(club_id, teacher_id)
Attends(student_id, class_id)
Joins(student_id, club_id)
Granted(bonus_id, faculty_id)
Assign(homework_id, class_id)
DoesHomework(homework_id, student_id, grade)