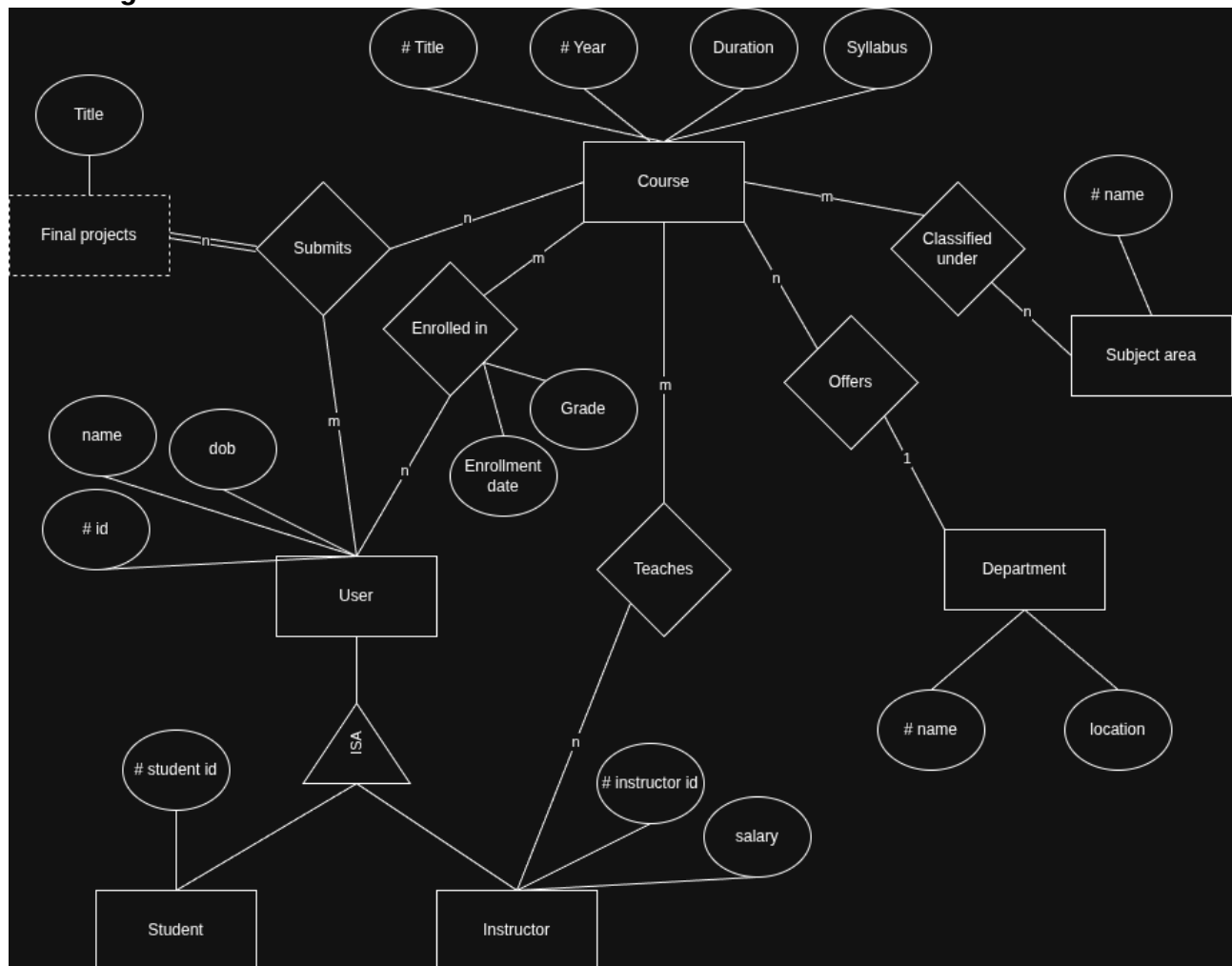# DBMS Assignment

University course database

Assumptions:
1. Final projects is a weak entity which is dependent on the student entity.
2. The enrolled in relation has a descriptive attribute named enrollment date to store the date of enrollment for student enrolled in a course.
3. The name and date of birth of two students can be same so the primary key of student is set to a unique student id.
4. The name and date of birth of two instructors can also be same so the primary key of instructor is set to a unique instructor id.
5. User is a super entity connected with student and instructor via ISA hierarchy and stores their common attributes.
6. Instructors receive salaries which are stored.

ER diagram:

Relational schema:
Note: Primary keys are represented by underline.
FK: Foreign Key
PK: Primary key

Course(<u>title</u>: string, <u>year</u>: string, duration: string, syllabus, offeredBy: string FK Department.name)

SubjectAreas(<u>name</u>: string)

CourseClassification(courseTitle: string FK Course.title, courseYear: string FK Course.year, subjectArea: string FK SubjectAreas.name)
Composite PK: (courseTitle, courseYear, subjectArea)

User(<u>id</u>: integer, name: string, dob: date)

Student(<u>studentId</u>: integer FK User.id)
PK: studentId

Instructor(instructorId: integer FK User.id, salary: integer)
PK: instructorId

Enrollments(enrollmentDate: date, grade: string, userId: integer FK User.id, courseTitle: string FK Course.title, courseYear: string FK Course.year)
Composite PK: (userId, courseTitle, courseYear)

FinalProjects(title: string, userId: integer FK User.id, courseTitle: string FK Course.title, courseYear: string FK Course.year)
Composite PK: (userId, courseTitle, courseYear)

ProjectSubmission(userId: integer FK User.id, courseTitle: string FK Course.title, courseYear: string FK Course.year)
Composite PK: (userId, courseTitle, courseYear)

Department(<u>name</u>: string, location: string)

CourseFaculty(instructorId: integer FK Instructor.instructorId, courseTitle: string FK Course.title, courseYear: string FK Course.year)
Composite PK: (instructorId, courseTitle, courseYear)

DepartmentCourses(departmentName: string FK Department.name, courseTitle: string FK Course.title, courseYear: string FK Course.year)
Composite PK: (departmentName, courseTitle, courseYear)