

# CSCI 4370: Assignment 1: Fall 2023

Consider the following schema and provide both relational algebra expressions and SQL queries to answer each question listed below.

Create the relations listed below in your database, insert some sample data and run the SQL queries that you came up with before. Make sure to insert some sample data in a way that for any query you do not end up with an empty result set.

Submit a report with the following information in the order listed.

1. SQL queries you used for the creation of the database and the schema.
2. SQL queries you used to insert your own sample data for each table.
3. For each question provide the following,
  - a. Relational algebra expression.
  - b. SQL statement.
  - c. The results you got for the SQL query on your sample data.

Please make sure that the queries you list in the report can actually be run on the MySQL instance for grading purposes. You may lose points if your queries do not work.

The work should be done in the groups you created on Piazza. Only the **group representative** should submit the assignment on **eLC**. Please include your team member names and group name in the report.

**Due date: Sep 10, 2023 @ 11:59 PM**

The assignment accepts late submissions as explained on the syllabus on eLC.

Schema:

Students(StudentID<pk>, FName, LName, DoB, Major)  
Courses(CourseID<pk>, CName, Credits)  
Enrollment(EnrollmentID<pk>, StudentID<fk>, CourseID<fk>, grade)  
Professors(ProfessorID<pk>, FName, LName, department)  
Teaches(TeachID<pk>, ProfessorID<fk>, CourseID<fk>)

Questions:

1. Retrieve all course IDs a student with ID 1234 has enrolled in.
2. All student names and ids who major in computer science.
3. Retrieve all course names a student with ID 1234 has enrolled in.

4. List of professor names and IDs who teach courses of more than 2 credits.
5. Student names and ids who have not enrolled in any course.
6. Course names and IDs that no professor teaches.
7. All student names and their IDs who major in computer science who got an 'F'.
8. Professor names and their IDs who teach students doing computer science major.

Note: If you have any questions, please post on Piazza.