

Database Management Systems
Lab Assignment II: SQL
Topic: Online Course Management Platform
Due: January 21, 2026, 5PM (Individual Submission)

An Educational Technology Company offers Massively Online Open Courses to its customers. You have to build a platform to manage all the data related to the courses, teachers, partner universities, and students.

Convert the ER diagram drawn in the previous lab design relational tables. Create the tables in SQL. You may modify the ER diagram and the tables such that the following queries can be answered. Populate the tables with few artificial data such that the following queries return non-null answers. Write relational algebra expressions for the following queries. Write SQL queries to return the following:

1. Names of all “certificate” courses on the topic of “AI” of duration less than or equal six months.
2. Names of all “certificate” courses on the topic of “AI” of duration less than or equal six months that are offered in partnership with “IITKGP”.
3. Names of all students having age less than 18 years or more than 60 years who have done the course named “GenAI”.
4. Names of all students who are not Indians and have done a course having the topic “AI” that was offered in partnership with “IITKGP”.
5. Names of all countries from where a student has done a course instructed by “Andrew Ng”.
6. Names of all instructors who have taught courses where at least one student was from India.
7. Name of courses such that at least one student who have taken this course has also taken the course named “GenAI”.
8. Name of all courses such that all the students who have taken this course has taken the course named “GenAI”.
9. Name of the most popular course (in terms of number of students) that is offered in partnership with “IITKGP”.
10. Name of the Indian student who has got the highest average marks considering all course on the topic “AI”.

Deliverable: (i) Relational algebra expressions for the above queries as a pdf file

(ii) All the SQL commands in following sequence as a single .sql File.

Sequence of SQL file: (i) Table definitions, (ii) Row insertions, (iii) SQL queries in above order.

Name the file as *rollnumber_A2.sql*, *rollnumber_A2.pdf*

Time: 1 week.