

Assignment 1: Database Design and Queries

In this assignment, you will create a database diagram (on paper) and then use MySQL to create the database. Next, you will write SQL queries to insert and retrieve data.

Please turn in the paper you used to draw your database diagram and screenshots of the queries with the results. You do not need to turn in the MySQL database because I am able to see each of your databases.

Part A:

In this part, you will create a database diagram that is based on the user stories below. The database stores information that enables instructors to teach online courses. After the diagram is created, you will create this database in MySQL.

User Stories

Instructors

An instructor has a first name, last name, username, and password.

As an instructor, I want to create a course. Below is the information about courses.

Courses

1. A course has a name, description, person teaching the course
2. A course has modules or sections
 - a. Modules have a name and one or more lessons
 - b. A lesson has a name, description, the file path for a video, whether the lesson is completed or not
 - c. A lesson can also have comments.

- a. A comment has text, date the comment was made, and who made the comment. People can also reply to other people's comments.
- b. A lesson can also have a quiz.
- c. Quizzes have questions and questions have one or more correct answers. The number of questions students got correct and incorrect are also stored with the quiz.
- d. A lesson can also have one or more resources. Resources are files that instructors want students to view after watching the lesson video.

Students

A student has a first name, last name, student classification (undergraduate or graduate), and a major.

As a student, I want to:

1. Login into the course website with a username and password
2. See a list of courses that I have been enrolled in
3. View the course that I have been enrolled in
4. View any lesson resources
6. Comment on lesson
7. Reply to someone else's comment
8. Take a quiz and see how many I got correct

and incorrect Students should also be enrolled into courses.

Part B: SQL Queries

- Insert Data

1. Write a query that inserts 3 students
2. Write a query that inserts 1 instructor
3. Write a query that inserts a course
 - This includes inserting modules, lessons, lesson resources, quizzes, exams, and the instructor who is teaching the course
4. Write a query that enrolls all 3 students in the course

- Retrieve Data

1. Write a query that lists how many students are in the database
2. Write a query that lists the courses for the instructor
3. Write a query that lists all modules and lessons for a particular course
4. Write a query that lists the lessons of a particular course that has comments
5. Write a query that lists how many students are registered for a particular course