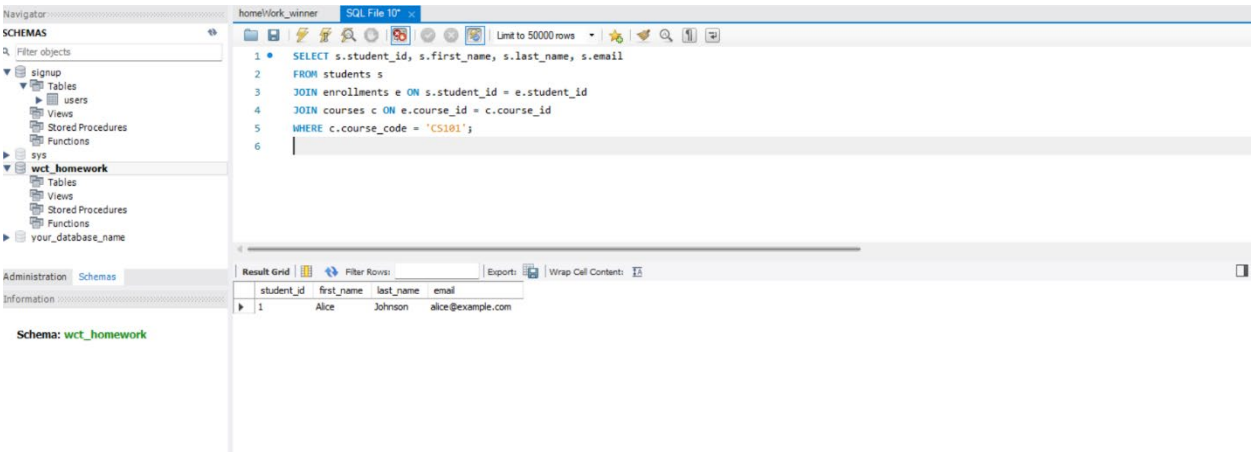
Name: Yun Winner

Class: ITE (M2)

Course: WCT II

SQL queries with explanations:

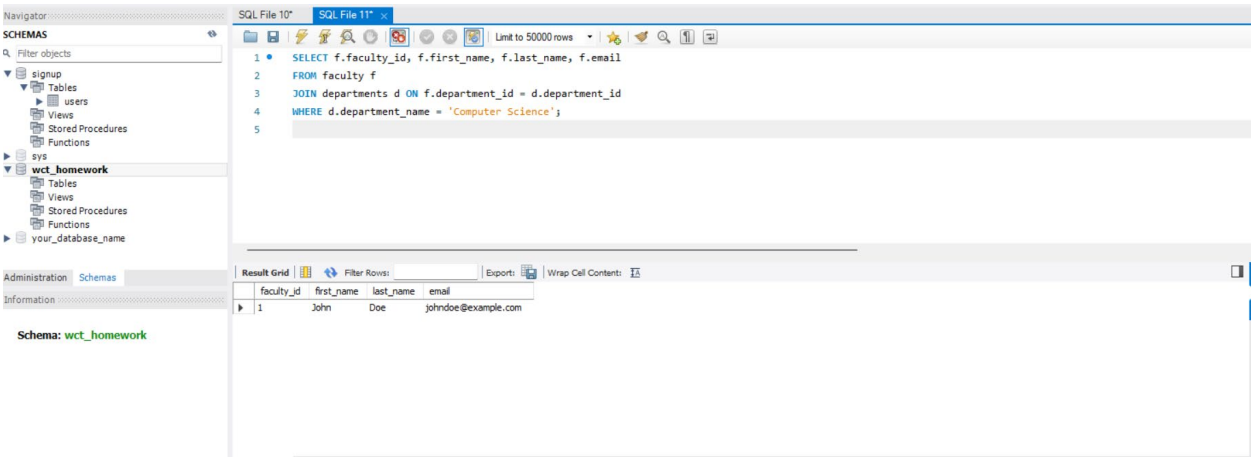
1. Retrieve all students who enrolled in a specific course.



How it works:

- Joins students, enrollments, and courses tables to find students enrolled in a specific course.
- Filters results based on course_code (replace 'CS101' with any course you want).

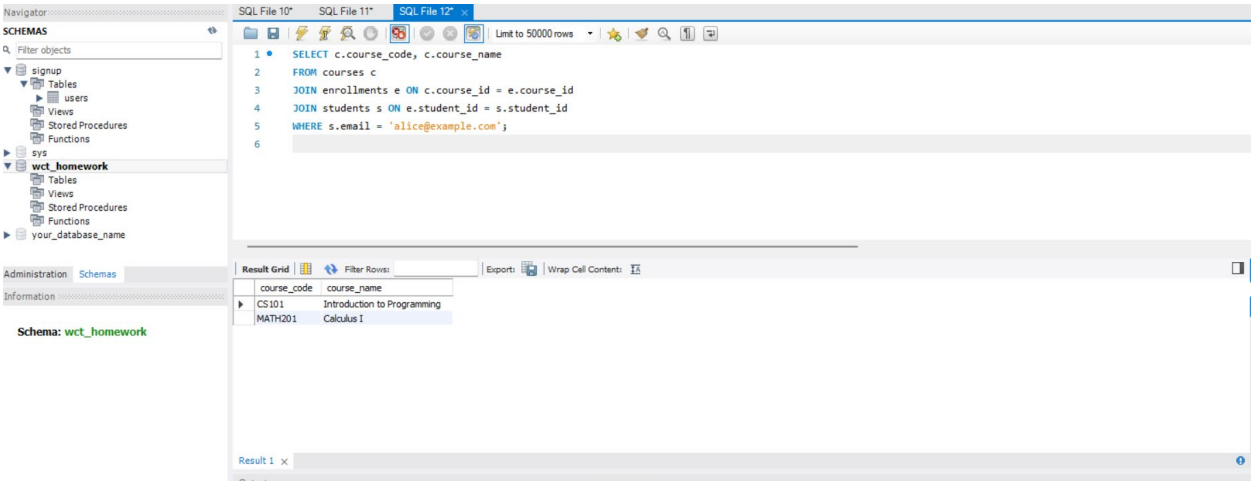
2. Find all faculty members in a particular department.



How it works:

- Joins faculty and departments tables to match faculty members with their departments.
- Filters results based on the department name (replace 'Computer Science' with any department).

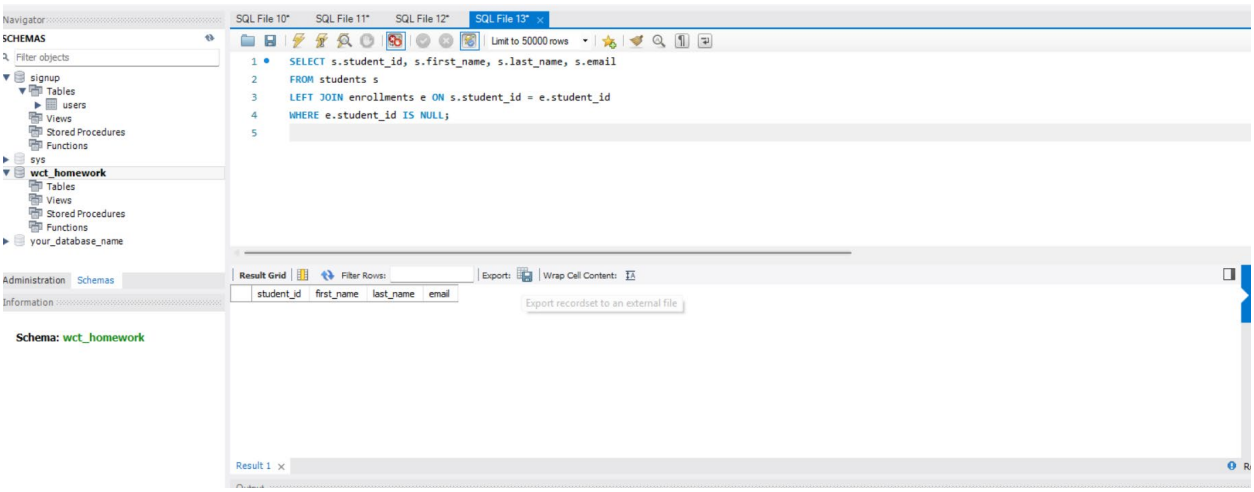
3. List all courses a particular student is enrolled in.



How it works:

- Joins students, enrollments, and courses tables to find courses associated with a student.
- Filters results by the student's email (replace 'alice@example.com' with any student's email).

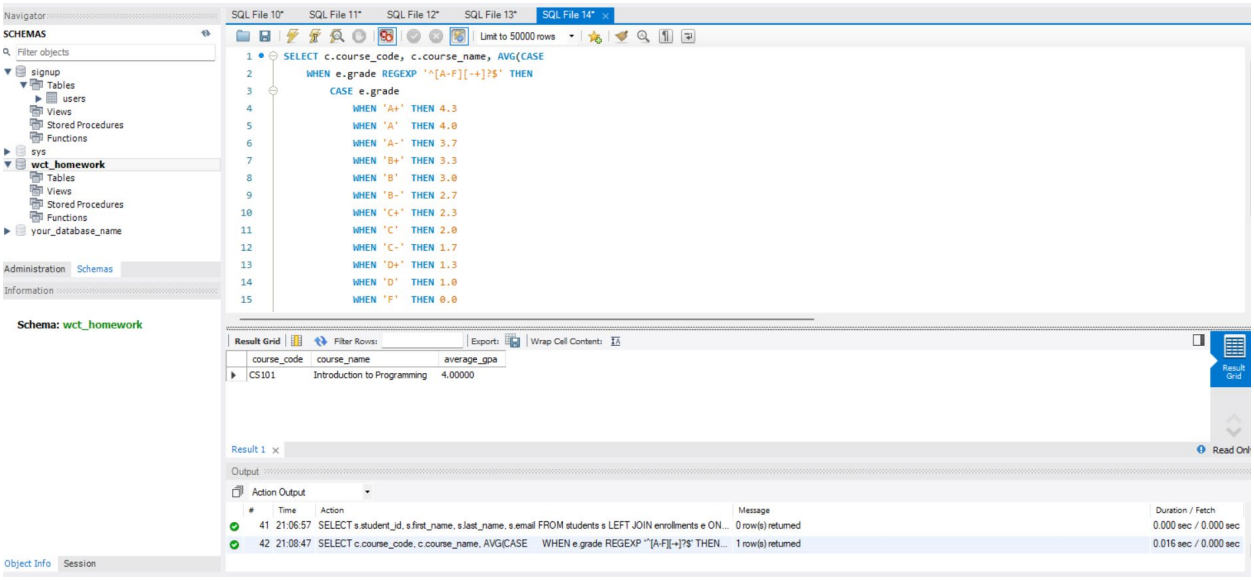
4. Retrieve students who have not enrolled in any course.



How it works:

- Uses a LEFT JOIN between students and enrollments, which keeps all students in the result.
- Filters out students who have a matching enrollment entry (i.e., they have enrolled in at least one course).
- If e.student_id IS NULL, it means the student has no enrollments.

5. Find the average grade of students in a specific course.



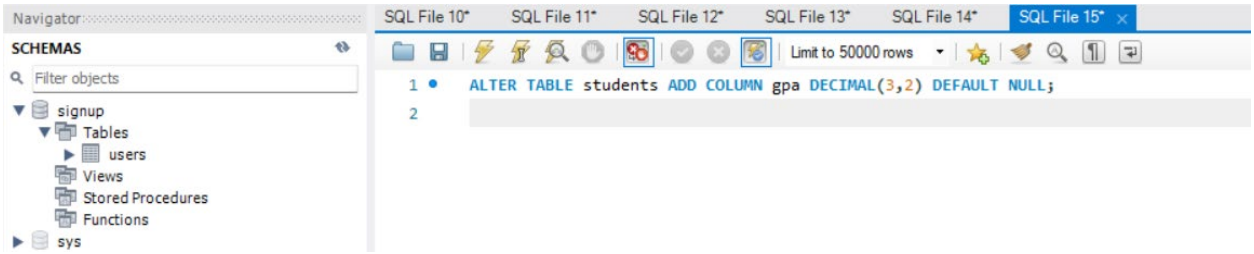
How it works:

- Joins courses and enrollments to get the grades of students in a specific course.
- Converts letter grades (A, B+, etc.) to a GPA scale (A+ = 4.3, F = 0).
- Computes the average GPA of students in that course.

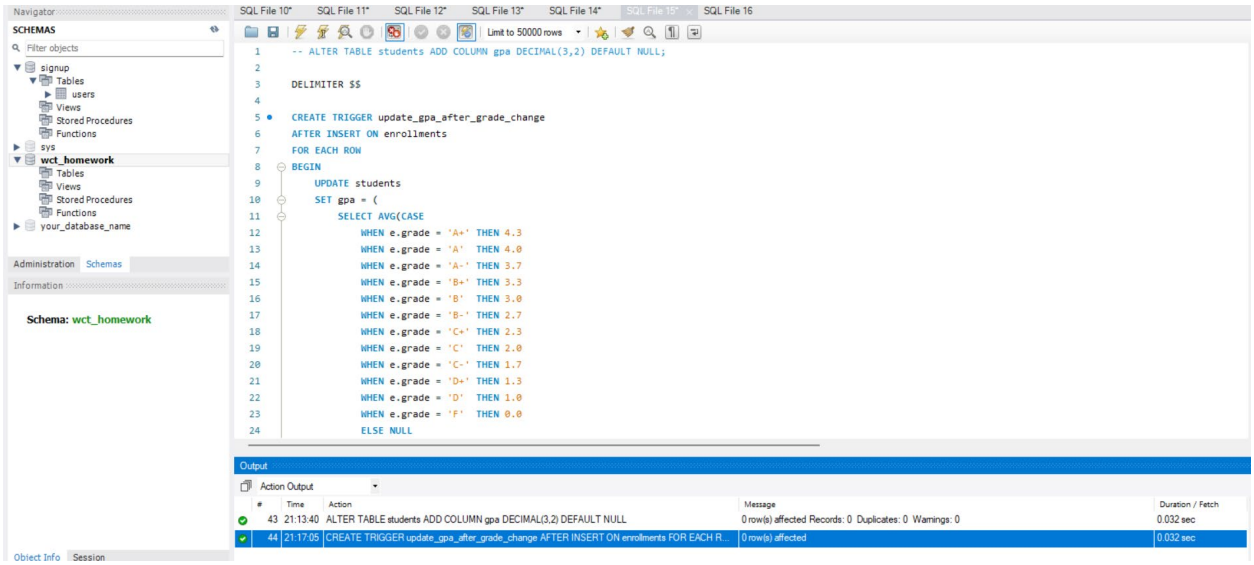
Bonus:

I. Implement a trigger to update a student's GPA when a grade is updated.

a. **Step 1 :** Add a gpa Column to students Table By



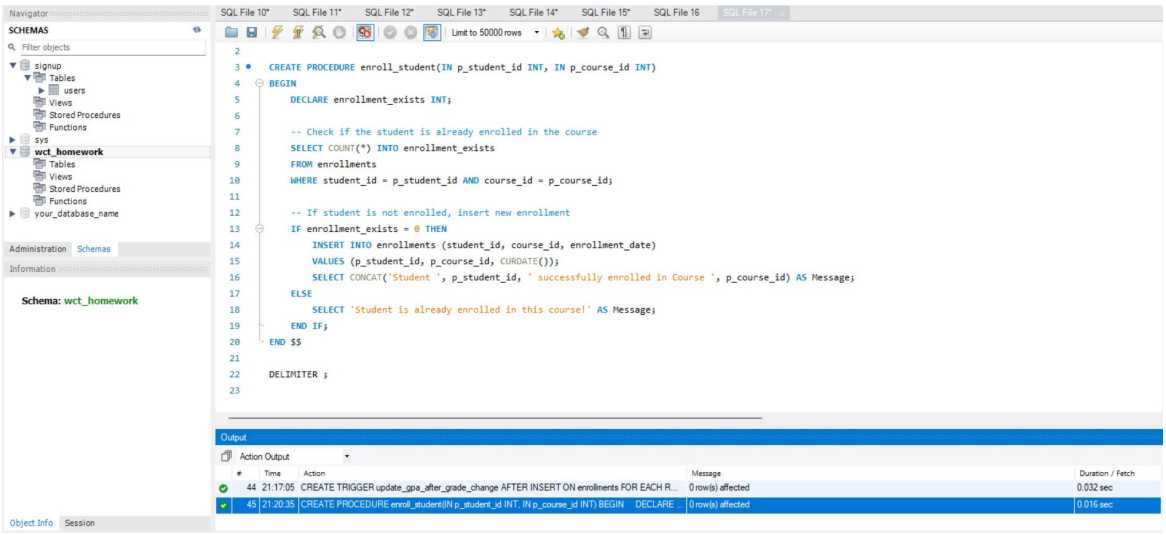
b. **Step 2 :** Create the Trigger



How it works:

- Converts letter grades (A, B+, etc.) into GPA values (4.0 scale).
- Calculates the average GPA for a student based on all their grades.
- Updates a new gpa column in the students table.

II. Design a stored procedure to enroll a student in a course.



How it works:

- Checks if the student is already enrolled in the course.
- If not enrolled, inserts the record into enrollments.
- Returns a success message or an error message if the student is already enrolled.

➢ Testing the Stored Procedure