# COMP 3311: Database Management Systems

## Lab 4 Exercise: SQL Functions and Subqueries

### WHAT TO DO

1. **Download** the zipped folder Lab4Exercise.zip from the ***SQL Functions and Subqueries*** entry of the Lab Schedule course webpage and unzip it. The folder contains two script files Lab4DB.sql and Lab4Queries.sql. The Lab4DB.sql script file drops the Student and Department tables previously created, if any, and creates five tables Student, Course, EnrollsIn, Department and Facility. The Facility table records the number of projectors and computers for each department.
2. **Place** your InsertMyself.sql script file inside the Lab5Exercise folder and **modify** it to insert into the EnrollsIn table an additional tuple with the following values. ← **NEW!**
   - For the studentId attribute, your student id.
   - For the courseId attribute, the value "COMP3311".
3. **Execute** the Lab4DB.sql script file in SQL Developer.
4. **Modify** the Lab4Queries.sql script file by constructing the following five SQL queries in the indicated locations in the script file.

   **Query 1:** Find the minimum, maximum, average and total number of computers over all departments.

   **Query 2:** Find the first name, last name, student id and cga of the students from the COMP department with the highest cga.

   **Query 3:** Find, for each course, the course id and the average cga of the students enrolled in the course. Order the result by average cga descending.

   **Query 4:** Find, for each course, the course id, student last and first name, department id and cga of the students who have the highest cga in the course. Order the result by course id ascending.

   **Query 5:** Find, for each student, the first name, last name, department id and the number of courses in which the student is enrolled. Order the result first by the number of courses descending and second by department id ascending.

   **Note 1:** Your query results should show the same headers for the columns for all queries as those shown in Figure 1.
   **Note 2:** All cga values should be truncated to exactly two decimal places as shown in Figure 1 (see the lab notes for how to do this).

### WHAT TO SUBMIT

1. Your modified Lab4Queries.sql script file containing your SQL queries.
2. A jpeg or PDF file with file name Lab4 that shows the result of executing the Lab4Queries.sql script file as shown in Figure 1.

### HOW TO SUBMIT

**By 11:00 p.m. today**, upload your modified Lab4Queries.sql script file and jpg screenshot file or PDF file to Canvas by selecting *Lab 4* in the Assignments section of Canvas, and then selecting the Submit Assignment button. To check your submission, select the Submission Details button on the right side of Canvas. For help, select the Help" button at the top-right of Canvas.

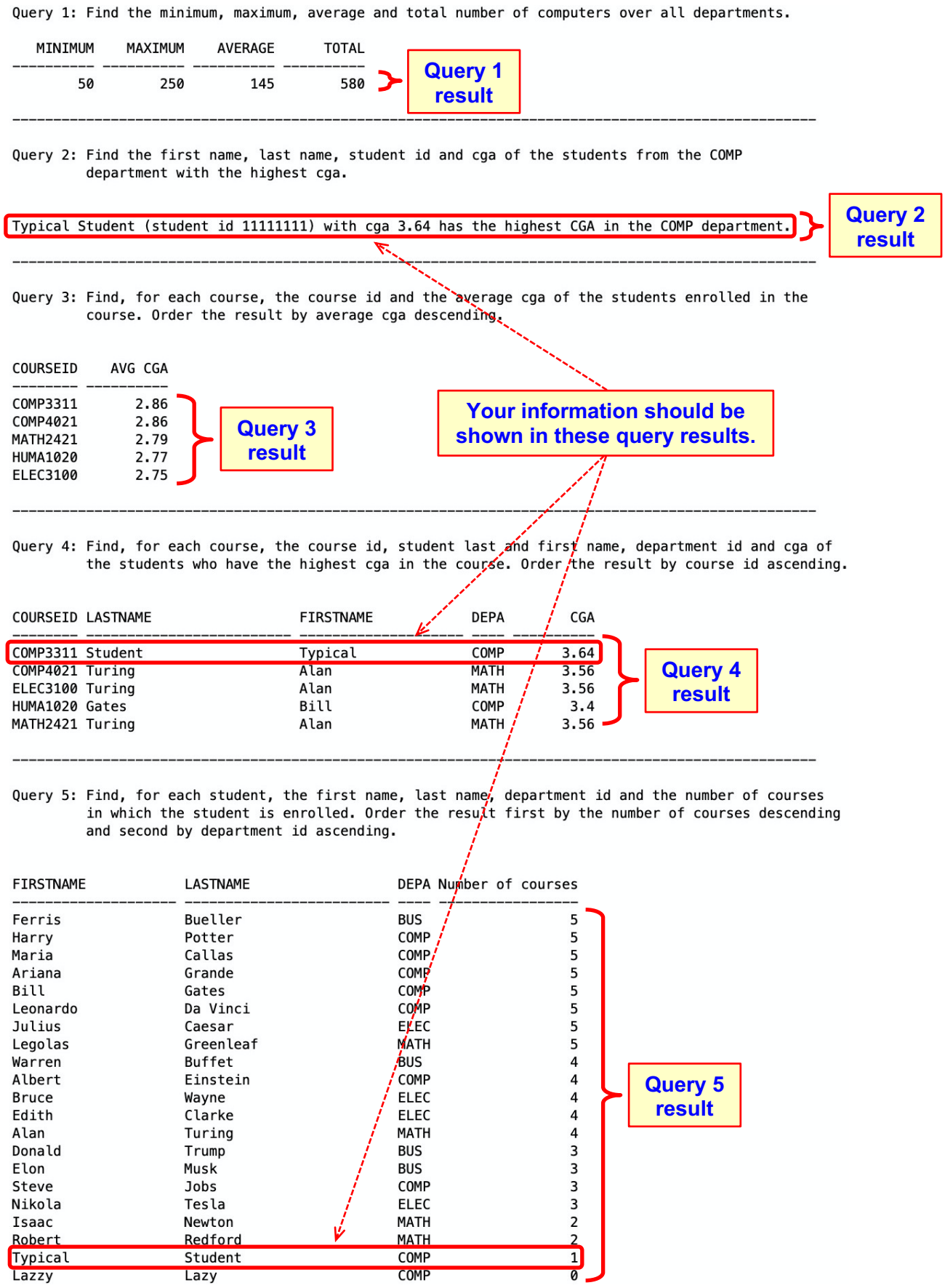


Figure 1: Example SQL Developer Script Output tab showing the result of executing the five queries.