



## Week 5 Lab

# SQL QUERIES

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[S23] Databases Course



# Task

**Write the following queries in SQL, using the university schema.**

1. Find the maximum and minimum enrolment across all sections, considering only sections that had some enrolment, don't worry about those that had no students taking that section
2. Find all sections that had the maximum enrolment (along with the enrolment), using a subquery.
3. Modify 1 to include sections with no students taking them; the enrolment for such sections should be treated as 0. Do this in two different ways (and create require data for testing)
  - a) Using a scalar subquery
  - b) Using aggregation on a left outer join (use the SQL natural left outer join syntax)
4. Find all courses whose identifier starts with the string "CS-1"
5. Find the names of all the instructors from Biology department
6. Find the enrolment of each section that was offered in Autumn 2022.
7. Find the maximum enrolment, across all sections, in Autumn 2022.

# Task (Optional)

**Write the following queries in SQL, using the university schema.**

1. The university rules allow an F grade to be overridden by any pass grade (A, B, C, D). Now, create a view that lists information about all fail grades that have not been overridden (the view should contain all attributes from the takes relation).
2. Find all students who have 2 or more non-overridden F grades as per the takes relation, and list them along with the F grades.
3. Grades are mapped to a grade point as follows: A:10, B:8, C:6, D:4 and F:0. Create a table to store these mappings, and write a query to find the CPI of each student, using this table. Make sure students who have not got a non-null grade in any course are displayed with a CPI of null.
4. Find all rooms that have been assigned to more than one section at the same time. Display the rooms along with the assigned sections; I suggest you use a with clause or a view to simplify this query.
5. Create a view faculty showing only the ID, name, and department of instructors.

Thank you for attention

**See you next week**

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