

RDBMS and SQL, Sep-Nov 2023

Assignment 2, 10 November 2023, due 18 November 2023

Setup

1. From https://www.db-book.com/university-lab-dir/sample_tables-dir/index.html, download the SQL files to set up tables for the university database discussed in the book by Silberschatz et al. For the tables, there are two options: the small tables used in the textbook examples, and large tables with random data. You should download the *large tables*.
2. Create and populate the database from the downloaded files.
3. Run the following queries and report your results. Submit a text file recording all your queries and their responses. You should be able to record your SQL session in a text file. For instance, in *MySQL*, you can save the entire session to a file `mysession.txt` by using the following command.

```
mysql --tee=mysession.txt
```

Task Write SQL queries for the following.

1. Find the faculty member(s) with the maximum salary. The output should contain the instructor ID, name and salary.
 2. For each department, report the faculty member(s) with the minimum salary in that department. The output should contain the instructor ID, instructor name, department name and salary.
 3. Find all faculty members whose office is not in the building `Painter`. The output should contain the instructor ID, instructor name and building name where the instructor's office is located.
 4. Find all faculty members who teach exactly one course. The output should contain the instructor ID, instructor name, the course ID and title of the course taught by instructor.
 5. Report the number of courses that have been taught by each faculty member. If a faculty member has not taught any course, the output should have a row for that faculty member with an entry 0 or NULL against number of courses taught.
 6. Find all courses that have more than one pre-requisite. The output should contain the course ID, course title and the number of pre-requisites for that course.
 7. Find all courses that are pre-requisites for more than one course. The output should contain the course ID, course title and the number of course for which this is a pre-requisites.
 8. Find all students who are not registered for any course. The output should contain the student ID and student name.
 9. Find all students who are registered for at least two courses. The output should contain the student ID, the student name and the number of courses that the student is registered for.
 10. Find all students who have registered for the same course more than once. For each instance where a student has registered for the same course more than once, the output should contain a row with the student ID, the student name, the course ID, the course title, the most recent semester and year when the course was registered for and the number of times the student has registered for that course.
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