DBI Lab 005: Further SQL

COMP1048: Databases and Interfaces

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Lab Overview

This week's lab is a continuation of the previous lab. We will be using the same database as last week, but we will performing more advanced queries. For this lab, you will be given a pre-populated database. You will be required to write SQL queries to answer the questions below.

Lab Setup

1. Download the database file from **Moodle**. This is a SQLite database file (Note the `.db` file extension).
2. Open the database file using the SQLite Command Line Interface (CLI).

> **Mac and Linux Users**
> You can do this by opening a terminal window and typing `sqlite3` followed by the path to the database file. For example, if the database file is in your Downloads folder, you would type `sqlite3 ~/Downloads/DBI_Lab005.db`.
>
> **Windows Users**
> Ensure that the `DBI_Lab005.db` file and the `sqlite.exe` are in the same directory. Double click on the `sqlite.exe` file to open the SQLite CLI. Then type `.open DBI_Lab005.db` to open the database file.

3. In order to include table headers in the output, type `.headers on` and press enter. This will ensure that the column names are displayed in the output. We can also change the output format to be more readable by typing `.mode column` and pressing enter.

Lab Questions

Before you start, you should familiarise yourself with the database schema. You can do this by typing `.schema` and pressing enter. This will display the schema of the database.

1. Display the movie title, genre, and year for all movies. Results should be sorted by year in ascending order. Your output should look like this:

Movie Title	Genre	Year of Release
...	...	...

2. Display all movies that are comedy or drama that were released after 2000. Your output should look like this:

Movie Title	Year of Release
...	...

3. Display the movie title and year for all movies released in which Barry Nelson or Daniel Craig acted. Your output should look like this:

Movie Title	Year of Release
...	...

4. Calculate the average price of all movies. Your output should contain one row with a single column containing the average price. Your output should look like this:

Average Price
...

5. Calculate the average movie price for each genre. Average prices should be rounded to two decimal places. Your output should contain one row with a single column containing the average price. Your output should look like this:

Genre	Average Price
...	...

6. Calculate the number of movies for each genre. Order the results in descending order according to the number of movies. Your output should look like this:

Genre	Number of Movies
...	...

7. List all movies that are in a genre that has more than 2 movies. Your output should look like this:

Movie Title	Genre
...	...

8. List all movies that share a genre with any movie that Barry Nelson acted in. Your output should look like this:

Movie Title	Genre
...	...

9. Generate a headline for each movie that includes the movie title, genre, and year. The headline should be in the format: "Movie Title (Genre) - Year". Results should be returned as a single column containing the headline. Results should be ordered by the length of the headline in descending order. Your output should look like this:

Headline
...

10. Generate a report that summates the total price of all movies for each genre. The final row of the report should contain the total price for all movies. Your output should look like this:

Genre	Total Price
...	...
Total	...

Submission

Please submit a PDF document containing your SQL solutions to the above tasks. **You do not need to include the output of your queries.**

Submitting this assignment will contribute 1% to your overall Module grade.

Your submission should demonstrate reasonable effort and fulfil the specified requirements set out in this lab sheet to receive the available marks. There is no granularity to the marking, the marking is on a pass-or-fail basis.

The submission point is available on Moodle.

Submission Deadline - Monday, 7 November 2022 @ 15:00