

Data and Data Management Exercise

(source: <https://github.com/mariaseabra/Data-and-Database-Management-Exercise>)

Imagine a film review website where critics enter their ratings. The website does not yet contain many data, but it already allows for some interesting queries. The schema is as follows:

Film (fID, title, year, director)

- Each film is identified by a number fID, a title, year of production, and director.

Critic (cID, name)

- Each critic is identified by a number cID and their name.

Rating (cID, fID, stars, ratingDate)

- Each rating is characterised by the critic's number, film number, number of stars awarded (1-5), and the rating date.
- A critic can give multiple ratings to a film on different dates.
- Note that the stars attribute is an integer, which requires conversions to calculate averages, for example.

Queries:

1. List the titles of all films directed by Steven Spielberg or James Cameron.
2. List all the years in which a film that received a rating of 4 or 5 was produced, and sort them in ascending order.
3. List the titles of all films that have no ratings.
4. Some critics have not entered the corresponding date for their rating. List the names of all critics who have ratings where the corresponding date is NULL.
5. Write a query that presents the ratings in the following format: critic's name, film title, number of stars, and rating date. Sort the result by this order: critic's name, film title, number of stars.
6. In all cases where the same critic rated the same film more than once, with a later rating being higher than an earlier one, list the critic's name and the film title.
7. For each film with at least one rating, find the highest rating given to it. List the film title and the highest rating, ordering by film title.

8. For each film with at least one rating, list its titles and the average ratings in descending order. List films with the same averages in alphabetical order.
9. List the names of all critics who have contributed 3 or more ratings.
10. Add the following critics to the database:
 - Diogo Silva, with cID=209;
 - Maria Manuela Simões, with cID=210;
 - João Sousa, with cID=211.
11. For each film, list its title and the difference between the highest and lowest ratings it has received. Order by descending difference in ratings and then by film title.
12. List the difference between the average ratings of films produced before 1980 and those produced in 1980 and later. The average rating for each film should be calculated first, and then the average of the averages for films before 1980 and those produced in 1980 and later.
13. For all directors of more than one film, list their name and the titles of the films they directed, ordered by the director's name and the film title.
14. List the title(s) of the film(s) with the highest average ratings, along with that average.
15. For each film-critic pair (film title and critic name), list the number of ratings (a film can be rated more than once by a critic on different dates). Also, list the number of ratings per film and per critic, as well as the total number of ratings.
16. Present the ranking of films in descending order of average rating.
17. For each director, present the ranking of their films in descending order of average rating.
18. What is the title of the film(s) and the respective director(s) that obtained the highest average ratings?
19. List the code and name of critics who have not given any ratings using the EXISTS operator.