Department of Computer Engineering

University of Peradeniya

CO226: Database Systems

Lab 5: Writing SQL Queries – Part 1

Due Date: 9th May 2023 before 12midnight

Submission: Submit the **queries and respective results** of task 01 and task 02 in a text file named as E19XXX.txt

Lab task 01

Suppose that you have started a new movie-rating website and you have been collecting data on reviewer's rating of various movies.

Figure01 shows a certain instance of the populated database. Log into MySQL server and create a database named E19XXXLab05. Create necessary tables in the database considering the following:

- Decide suitable names and data types for each field,
- Define primary keys and foreign keys for each table,
- Choose referential integrity options that should be used on each of the following operations
    - ON UPDATE
    - ON DELETE

MOVIE

Movie ID	Title	Year	Director
101	Gone with the Wind	1939	Victor Fleming
102	Star Wars	1977	George Lucas
103	The Sound of Music	1965	Robert Wise
104	E.T.	1982	Steven Spielberg
105	Titanic	1997	James Cameron
106	Snow White	1937	NULL
107	Avatar	2009	James Cameron
108	Raiders of the Lost Ark	1981	Steven Spielberg

REVIEWER

Reviewer ID	Reviewer Name
201	Sarah Martinez
202	Daniel Lewis
203	Brittany Harris
204	Mike Anderson
205	Chris Jackson
206	Elizabeth Thomas
207	James Cameron
208	Ashley White

RATING

Reviewer ID	Movie ID	Stars	Rating Date
201	101	2	2011-01-22
201	101	4	2011-01-27
202	106	4	null
203	103	2	2011-01-20
203	108	4	2011-01-12
203	108	2	2011-01-30
204	101	3	2011-01-09
205	103	3	2011-01-27
205	104	2	2011-01-22
205	108	4	null
206	107	3	2011-01-15
206	106	5	2011-01-19
207	107	5	2011-01-20
208	104	3	2011-01-02

Figure 01: An instance of 'Movie Rating' database

Lab Task 02:

Write the following SQL queries using MySQL, to retrieve the data from the database, you created in task01 above.

1. Find all the details about the movies presented in the populated MOVIE table.
2. Find all the details about the movies directed by 'James Cameron'.
3. Find all the details about the movies directed by 'James Cameron', on or after year 2000.
4. Find all the stars presented in the rating table.
5. Find the distinct stars presented in the table.
6. Find movie ids and each movie's director.
7. Find movie ids, titles, years of the movies directed by 'Steven Spielberg'.
8. Obtain the Cartesian product of the details presented in two tables MOVIE and RATING.
9. Obtain the Cartesian product of the movie id and title from MOVIE table with movie id, reviewer id and stars from RATING table.
10. Select movie ids of each movie with its title, reviewer id and stars received.
11. Select movie ids of each movie with its title, reviewer id and stars received, where number of stars are less than or equal to three.
12. Select movie ids of each movie with its title, reviewer id and stars received, where number of stars is between two and four (two and four inclusive).
13. Select reviewer ids with the corresponding movie ids reviewed by each reviewer.
14. Select distinct tuples from the results produced by the execution of the above query (query number 14).
15. Select each movie id with its corresponding title, reviewer id, reviewer name and stars received.
16. Select each movie id with its corresponding title, reviewer id, reviewer name and stars received, where number of stars received is equal to five.
17. Select movie title with its corresponding reviewer name and stars, where movie's rating date is missing.
18. Select all the movie director names and reviewer names into one column. Do not include null values.
19. Select the details about the reviewers who have a last name called 'Martinez'.
20. Select the details about the ratings which have been rated before the 10 th day of the month. Use substring comparison.
21. Write the above query (query number 20) without using substring comparison.
22. Show the effect of giving one more star to the movies reviewed by 'Brittany Harris'. Here select relevant details from RATING table.
23. Select movie titles with its reviewer name and stars received. Order the result by movie title in the alphabetical order.
24. Select movie titles with its stars received and rating date. Order the result by movie title in the alphabetical order, then by stars and rating date both in descending order.
25. Write a nested query to retrieve the details of the movies directed by a director who is also a reviewer