Assignment Five

Intro to Queries

Complete the tasks below. If you need help, please use the learning content provided for each topic. Have fun!

As you begin the rest of the assignments, please use the SELECT pipeline template in the content section of our Brightspace course.

THIS SHOULD BE A SINGLE .sql FILE THAT YOU UPLOAD TO GITHUB

Problem 1: Inserting tuples

The critically acclaimed movie *Hidden Figures* tells the story of three African-American mathematicians who played a pivotal role in the early days of the US space program. However, because the movie did not win one of the main Oscars and is not one of the 200 top-grossing movies, it isn't in our database. In addition, although the actresses playing the three women (Taraji P. Henson, Janelle Monae, and Octavia Spencer) are already in the database, their connections to this movie are not.

Let's assume that we want to honor the three mathematicians by adding the movie to the database, along with links between the movie and Henson, Monae, and Spencer. Write the SQL commands to add the necessary tuples. You may find it helpful to consult the schemas of the **Movie** and **Actor** tables.

Notes:

- *Hidden Figures* was released in 2016. It is 127 minutes long, and it is rated PG. You should give it an id of 4846340, and a genre value of BDH. Because it isn't one of the top-grossing films, you should use the value NULL for its earnings rank.
- You should use appropriate `SELECT` commands to retrieve the IDs of Henson, Monae, and Spencer, so can use those ID values in one or more of the `INSERT` commands that you write.
- When specifying the values to be inserted, you may assume that the columns in a given table follow the order specified by the table's schema.
- When specifying the values to be inserted, don't forget to surround most values with single quotes. However, you won't need quotes around values of attributes that have an INTEGER type (see the schema above), nor around the special value NULL.

Problem 2: An incredibly lucrative animation

Incredibles 2 is one of several recent animated movies that have made it into the ranks of the 200 top-grossing movies. Write a query to find the earnings rank, rating, and runtime of this movie. The result should be a single tuple/row of the form (earnings rank, rating, runtime).

Problem 3: Popular nominees

This year, both Lady Gaga and Melissa McCarthy were nominated for a Best Actress Oscar, although neither of them won. Write a single query to find the places of birth and dates of birth for these two actresses. The result of the query should be two tuples of the form (name of person, place of birth, date of birth). *Hint:* If your initial query does not produce any results, you may want to reconsider the logical operator (AND, OR, NOT) that you are using in your WHERE clause.

Problem 4: Recent G-rated movies

Find the names of all movies in the database with a G rating that were released in this decade (i.e., 2010 or later). The result of the query should be tuples of the form (name of movie, year of movie).

Problem 5: Top-grossing G-rated movies

Find the average earnings rank of all G-rated movies in the top 200 grossing movies. The result of the query should be a single number (i.e., a tuple with a single numeric value). *Hint*: You will need to use an aggregate function.

Problem 6: Years with an unusual number of Oscars

For most years, the database includes information about 6 Oscar awards. However, there are some years in which the number of Oscars is either less than or greater than 6. Write a query to find all such years. The result of the query should be tuples of the form (year, number of Oscars). *Hint*: You will need a `GROUP BY` clause to create subgroups, and you will also need to write a condition that involves an aggregate function applied to those subgroups.

Problem 7: Shortest Star Wars movie

Which of the Star Wars movies has the shortest runtime, and what is that runtime? The result of your query should be a single tuple of the form (movie name, runtime). You may assume that all of the Star Wars movies have the phrase "Star Wars" somewhere in the name of the movie.