WSUV CS 351
HOMEWORK 5
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Description of Schema

genres:
- The stripped column of genre. The Primary key is id, and attribute is name

keywords:
- The stripped column of key words. The Primary key is id, and attribute is name

movies_genres:
- This is the 3NF table for genres, it has a primary key called unique id, and foreign keys that are from movies and its movie_id, and genre_ id.

Movie_keywords:
-This is like movie_genres, it has a unique primary key called unique_id, and foreign keys that are from movies and its movie_id, and genre_ id.

movie_production_companies:
-is the 3NF of production companies, it has a unique primary and similar foreign keys pretaining to production_companines.

movie_production_countries:
-is the 3NF of production_countries,

movie_spoken_languages
-is the 3NF of spoken_languages

Production_companies:
- the individual id and name of production_companies column

Production_countries:
- the individual id and name of production_countries column

spoken_languages:
-the individual id and name of spoken_languages column

I believe this database is in 3NF because its broken down into unique keys and some sort of table identifier and maybe some other attribute tied to it.

For instance the movie_genres needed to be broken down into the movies unique id , movie id, and genre_id. When the genres and keywords are broken down they don't have further transitive dependencies.

1. 10% What is the average budget of all movies? Your output should include just the average budget value.

   # avg_budget = "Select AVG(budget) AS average from movies;"

   29045039.87528628

2. 10% Show the movies that were produced in the United States. Your output must include the movie title and the production company name.

```
US_Movies = "SELECT \
            movies.original_title AS movie_title, \
            production_companies.name AS company_name \
            from movies \
            LEFT JOIN movie_production_companies ON movies.id =
                       movie_production_companies.movie_id \
            LEFT JOIN movie_production_countries ON movies.id =
                       movie_production_countries.movie_id \
            LEFT JOIN production_companies ON movie_production_companies.comp_id
                       = production_companies.id  \
            WHERE movie_production_countries.country ='US'\"
            #limit 5;"
```

```
Avatar (Lightstorm Entertainment)
Avatar (Dune Entertainment)
Avatar (Twentieth Century Fox Film Corporation)
Avatar (Ingenious Film Partners)
Avengers: Age of Ultron (Marvel Studios)
```

3. 10% Show the top 5 movies that made the most revenue. Your output must include the movie title and how much revenue it brought in.

   top_rev = "SELECT original_title, revenue FROM movies ORDER BY revenue DESC LIMIT 5"

```
Hitman: 99965753
Street Fighter: 99423521
The Lucky One: 99357138
Hellboy: 99318987
Our Kind of Traitor: 9930095
```

4.   10% What movies have both the genre Science Fiction and Mystery. Your output must
     include the movie title and all genres associated with that movie

scifi_mys = "SELECT movies.original_title AS title, GROUP_CONCAT(genres.name) AS
genres \
      FROM movies \
      LEFT JOIN movie_genres ON movies.id = movie_genres.movie_id \
      LEFT JOIN genres ON movie_genres.genre_id = genres.id \
      WHERE genres.name IN ('Science Fiction', 'Mystery') \
      GROUP BY movies.id \
      HAVING COUNT(DISTINCT genres.name) = 2 \
      LIMIT 5"

```
Cypher: Science Fiction,Mystery
Congo: Mystery,Science Fiction
Halloween III: Season of the Witch: Mystery,Science Fiction
The Thirteenth Floor: Science Fiction,Mystery
The Thing: Mystery,Science Fiction
```

5. 10% Find the movies that have a popularity greater than the average popularity. Your output must include the movie title and their popularity.

pop = "SELECT original_title, popularity FROM movies WHERE popularity > (SELECT AVG(popularity) FROM movies) LIMIT 5"

Movie title: Dumb and Dumber To, Popularity: 67.767785
Movie title: A Nightmare on Elm Street Part 2: Freddy's Revenge, Popularity: 21.607228
Movie title: The Pacifier, Popularity: 35.4763
Movie title: My Sister's Keeper, Popularity: 24.09152
Movie title: I, Frankenstein, Popularity: 31.324734