SQL Homework 2

Consider the following relational database from IMDB.

- ACTOR (**id**, fname, lname, gender)
- MOVIE (**id**, name, overview, release_year, budget, rating)
- DIRECTOR (**id**, fname, lname,debut_year)
- CAST (**actor id**, **movie_id**, role)
- MOVIE_DIRECTOR (**director_id, movie_id**)

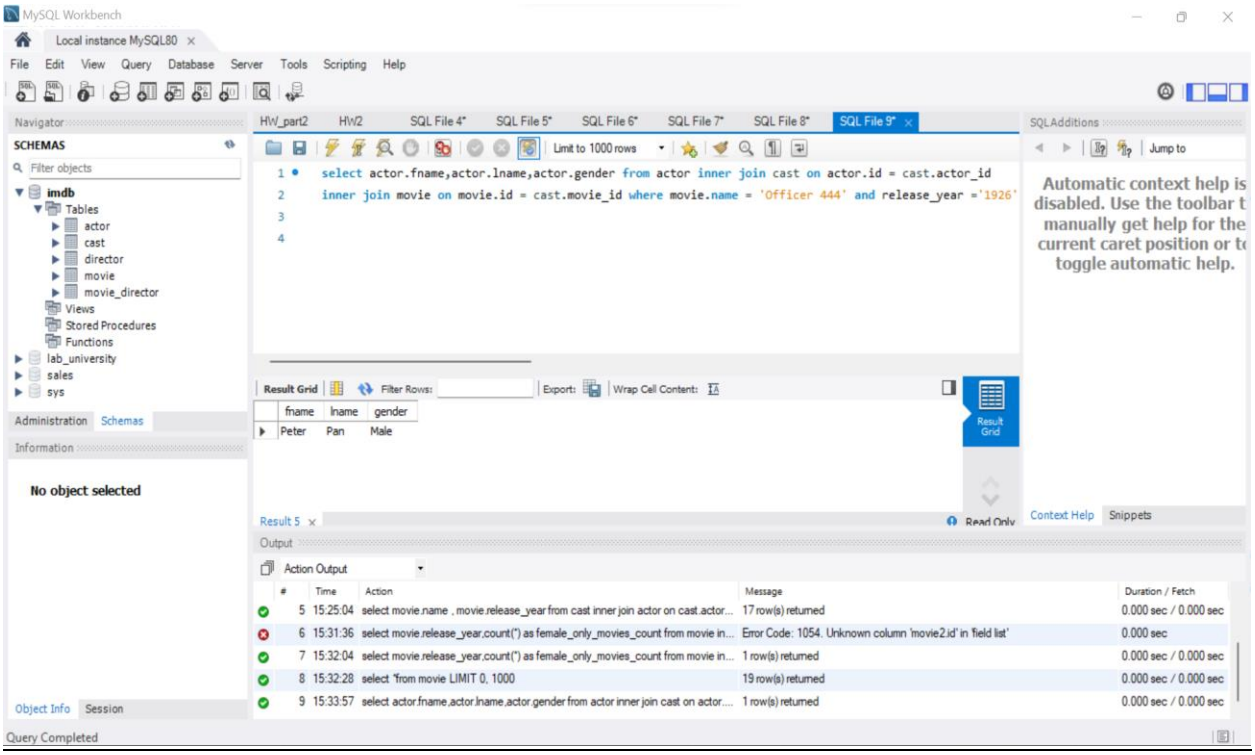
**Q1 [10 pt]** List first name, last name, and gender of all the actors who played in the movie 'Officer 444 (1926)'

**Solution:**

**SQL Query:**

```
select actor.fname,actor.lname,actor.gender from actor inner join cast on actor.id = cast.actor_id
inner join movie on movie.id = cast.movie_id where movie.name = 'Officer 444' and release_year ='1926';
```

**Output:**



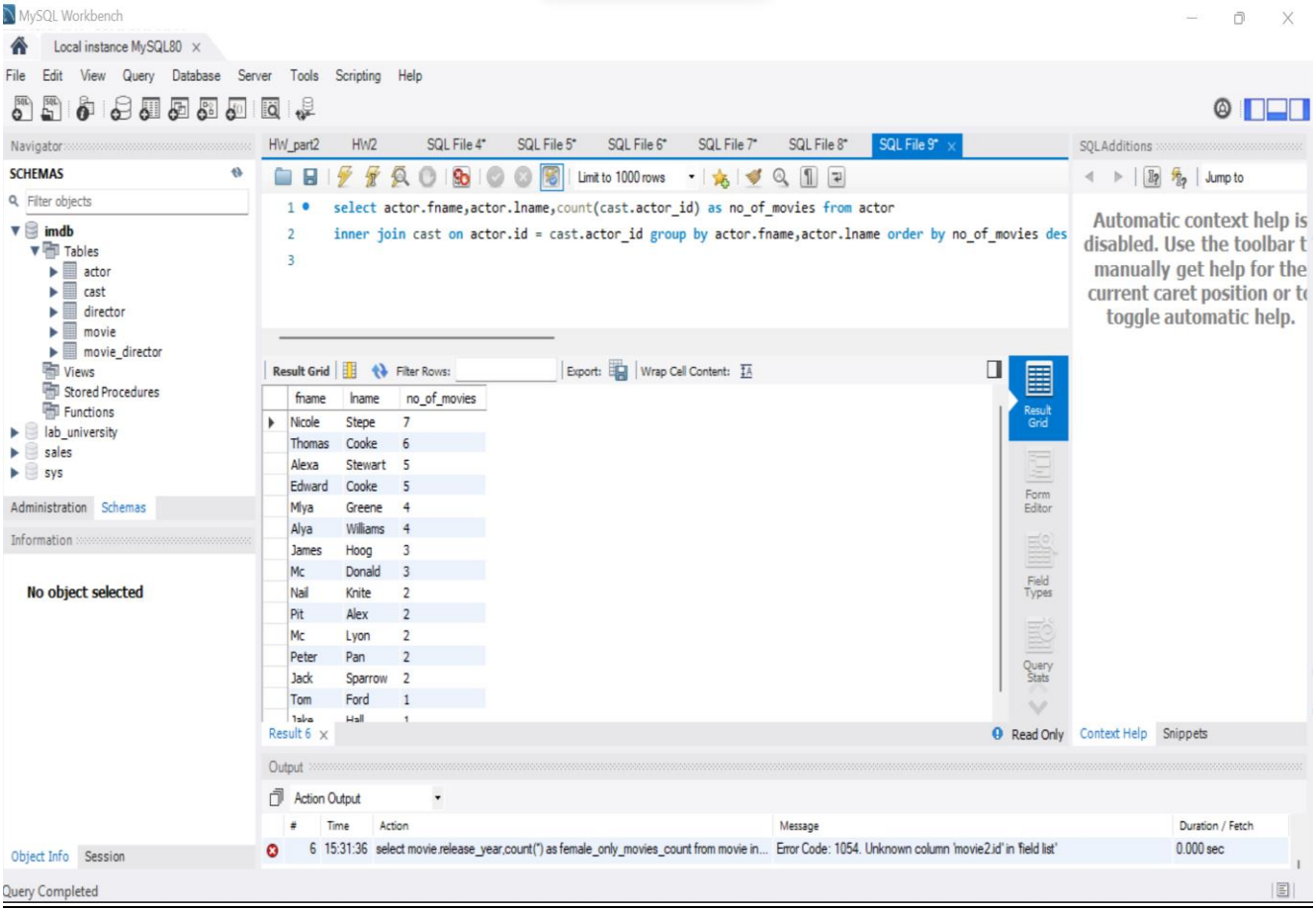
**Q2 [10 pt]** List all actor(s) in descending order of the number of films he/she played, the results should include their first name, last name, and number of movies played by this actor(s).

**Solution:**

**SQL Query:**

```
select actor.fname,actor.lname,count(cast.actor_id) as no_of_movies from actor
inner join cast on actor.id = cast.actor_id group by actor.fname,actor.lname order by no_of_movies
desc;
```

**Output:**

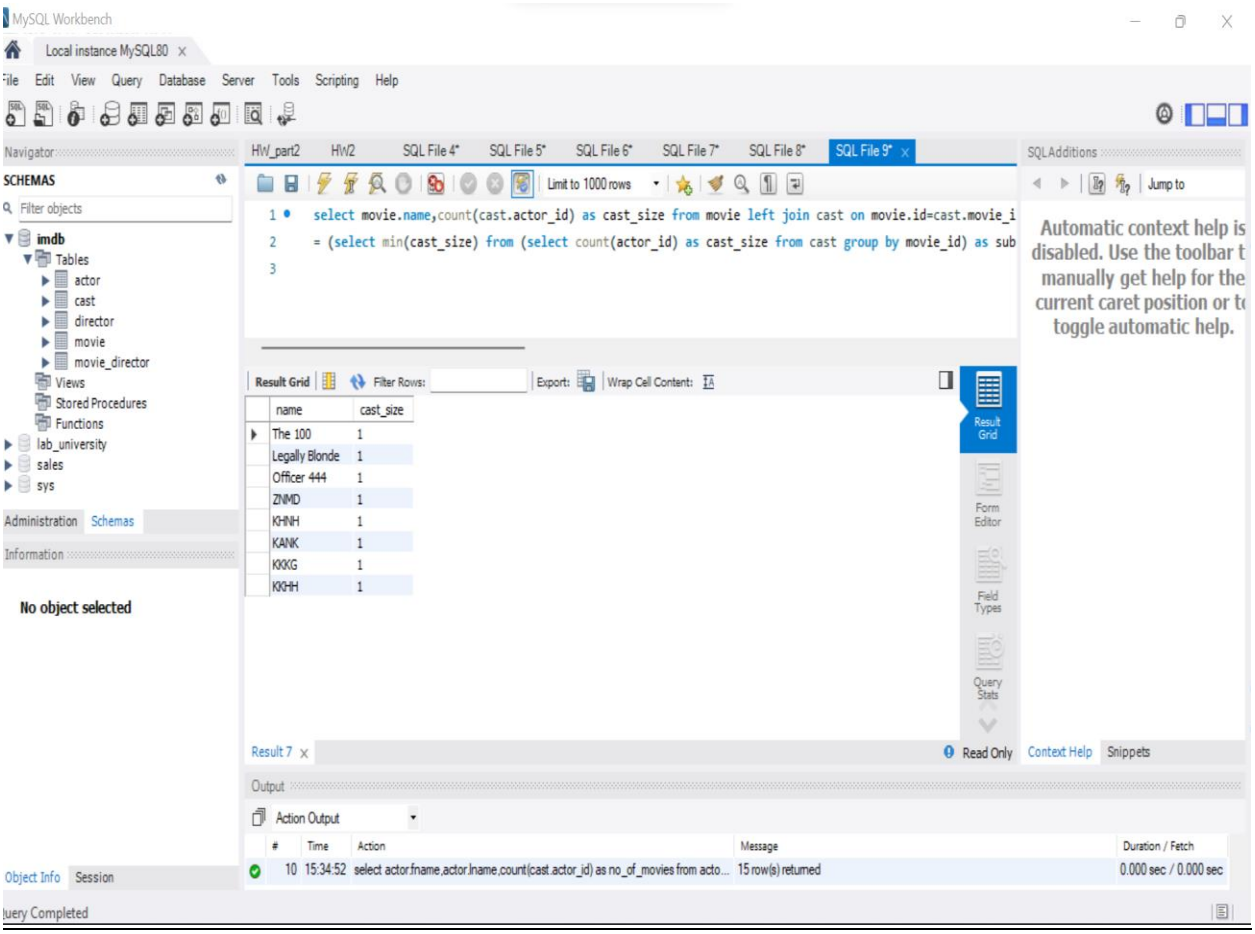


**Q3 [10 pt]** Find the film(s) with the smallest cast, return the movie name(s) and the size of the cast.
**Solution:**

**SQL Query:**

```
select movie.name,count(cast.actor_id) as cast_size from movie left join cast on movie.id=cast.movie_id
group by movie.name having cast_size
= (select min(cast_size) from (select count(actor_id) as cast_size from cast group by movie_id) as
subquery);
```

**Output:**



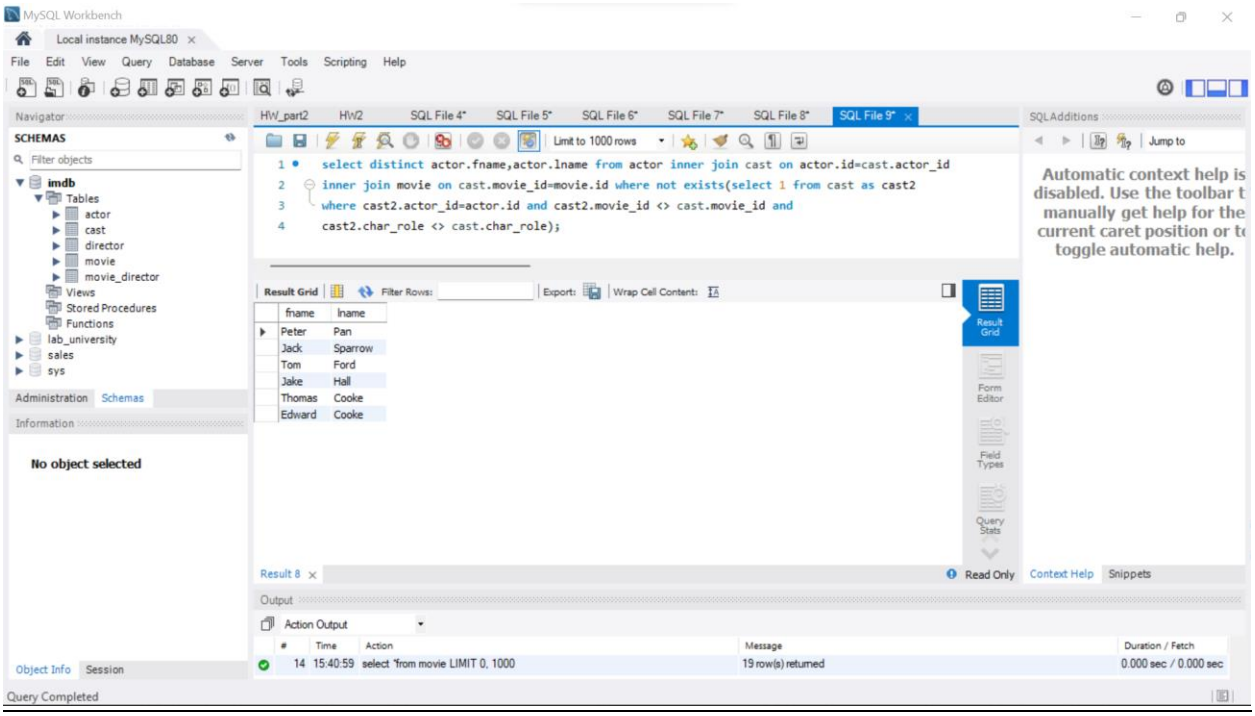
**Q4 [10 pt]** Find the actor(s) who always have the same role in the movie he/she appeared.

**Solution:**

**SQL Query:**

```
select distinct actor.fname,actor.lname from actor inner join cast on actor.id=cast.actor_id inner join
movie on cast.movie_id=movie.id where not exists(select 1 from cast as cast2 where
cast2.actor_id=actor.id and cast2.movie_id <> cast.movie_id and cast2.char_role <> cast.char_role);
```

**Output:**

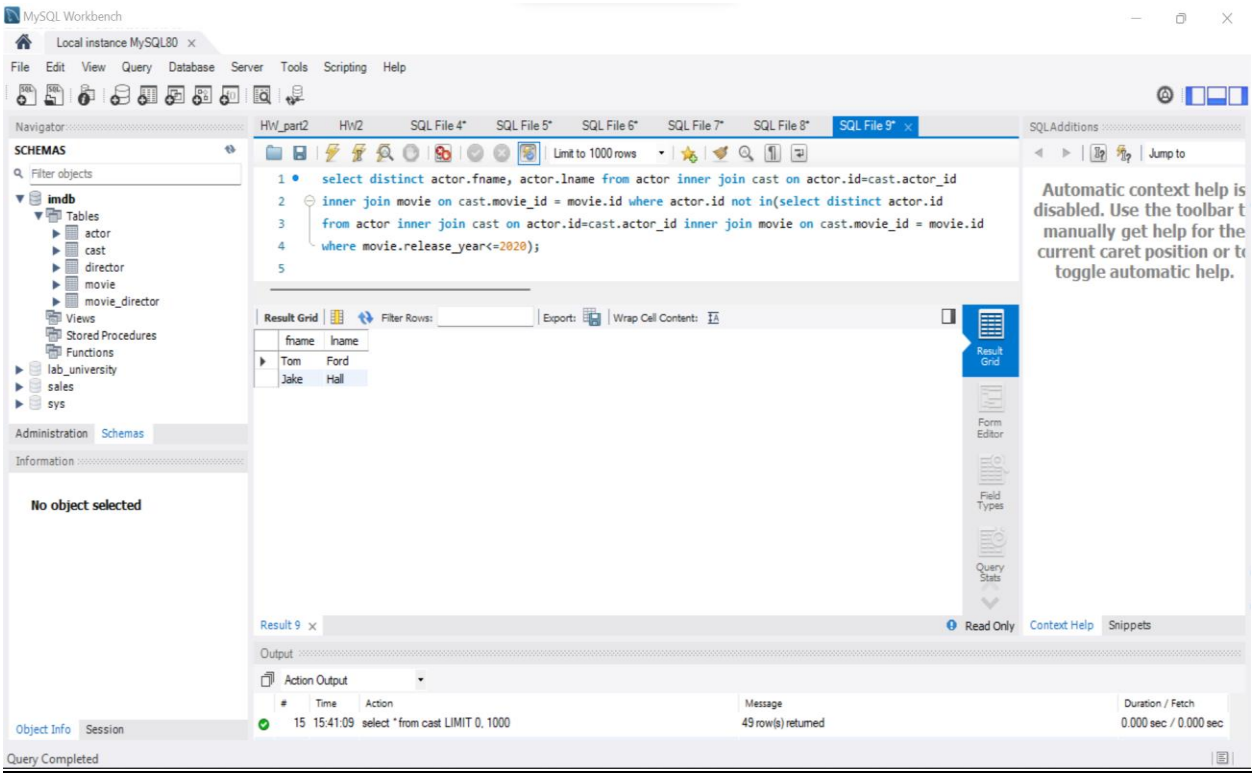


**Q5 [10 pt]** Find all actor(s) who acted only in films after 2020.
**Solution:**

**SQL Query:**

```
select distinct actor.fname, actor.lname from actor inner join cast on actor.id=cast.actor_id
inner join movie on cast.movie_id = movie.id where actor.id not in(select distinct actor.id
from actor inner join cast on actor.id=cast.actor_id inner join movie on cast.movie_id = movie.id
where movie.release_year<=2020);
```

**Output:**



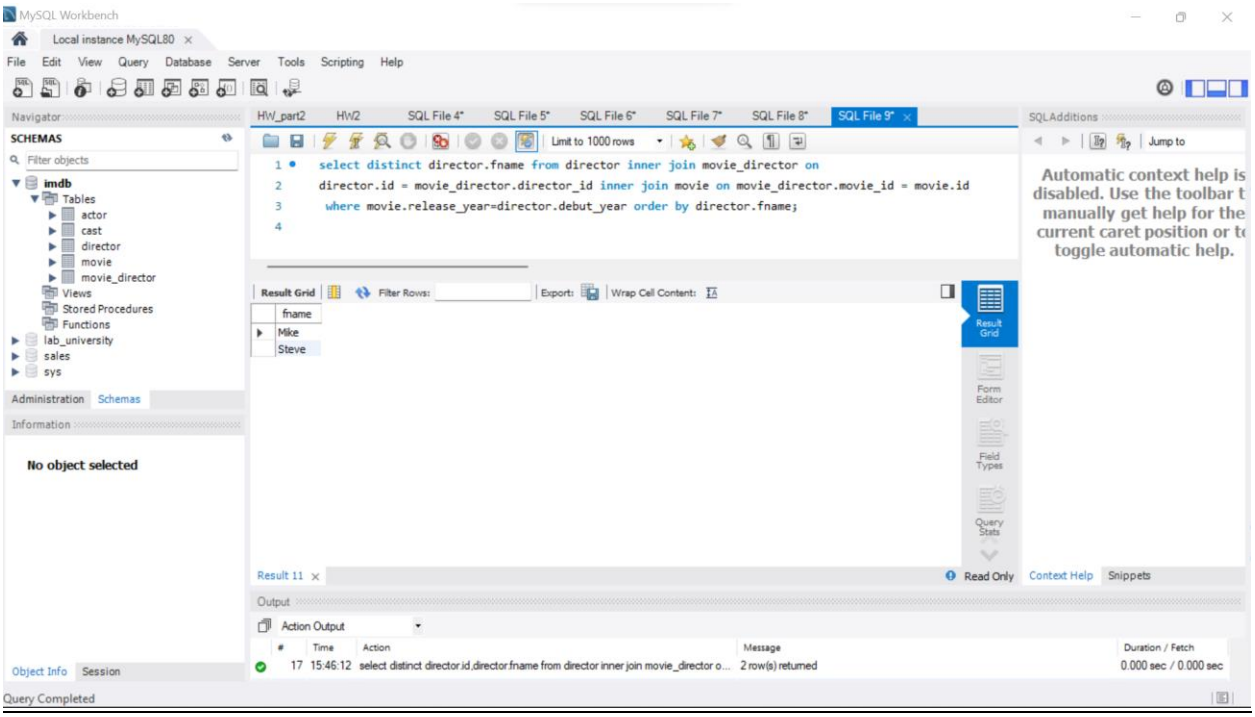
**Q6[10 pt]** For every director, list the films he/she directed in his/her debut year. Sort the results by first name of the director.

**Solution:**

**SQL Query:**

```
select distinct director.fname from director inner join movie_director on director.id = movie_director.director_id inner join movie on movie_director.movie_id = movie.id where movie.release_year=director.debut_year order by director.fname;
```

**Output:**



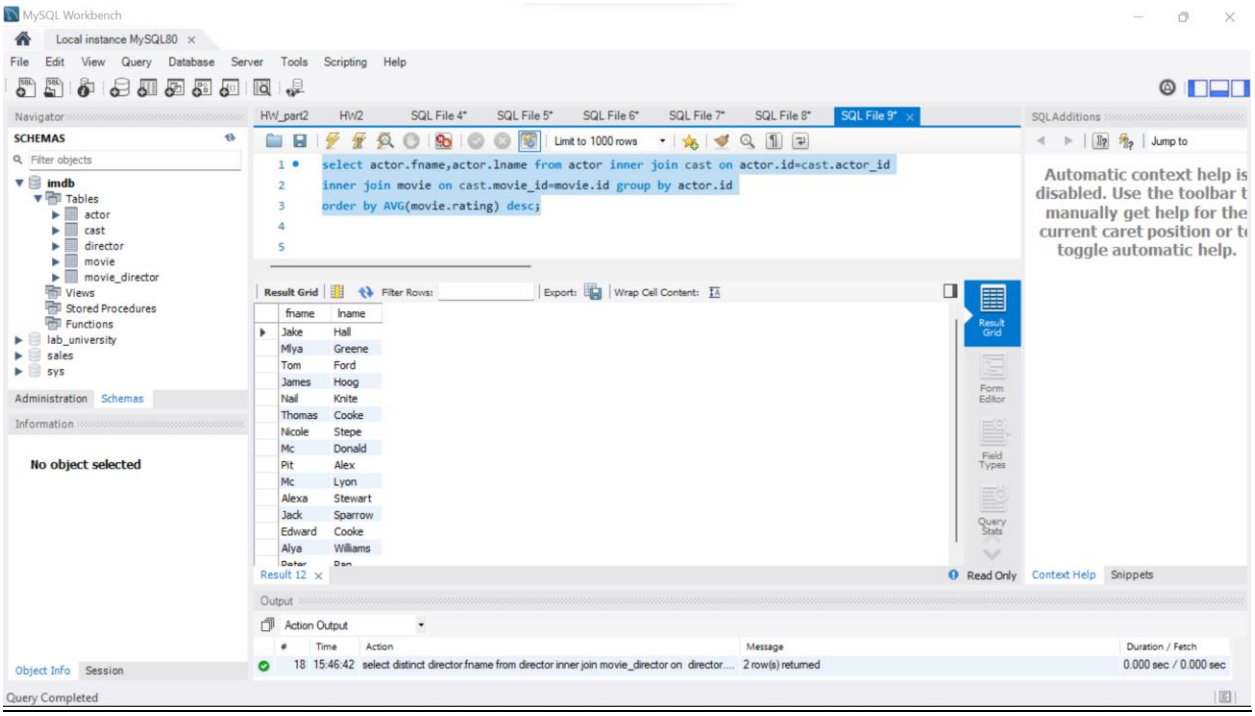
**Q7[10 pt]** Output a list of all the actors ordered by the average ratings of their movies.

**Solution:**

**SQL Query:**

```
select actor.fname,actor.lname from actor inner join cast on actor.id=cast.actor_id inner join movie on
cast.movie_id=movie.id group by actor.id
order by AVG(movie.rating) desc;
```

**Output:**



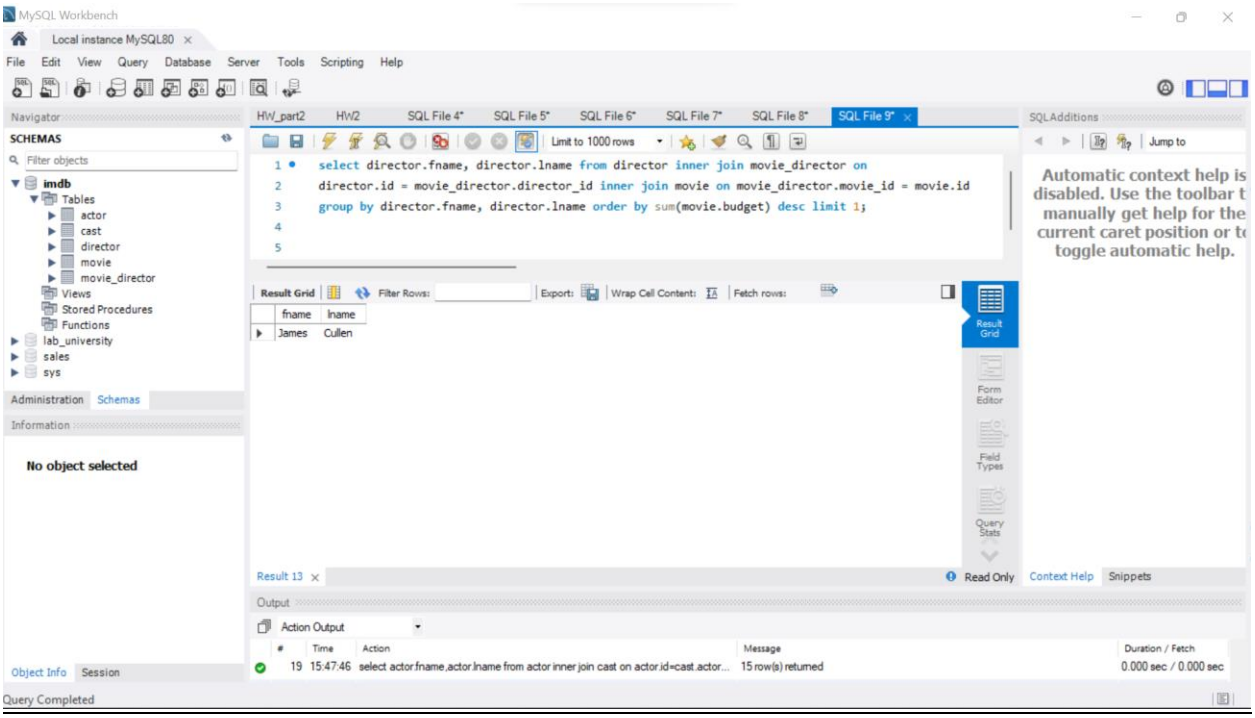
**Q8[10 pt]** find out who is the most bankable director (has the highest budget sum for all the directed movies)

**Solution:**

**SQL Query:**

select director.fname, director.lname from director inner join movie_director on director.id = movie_director.director_id inner join movie on movie_director.movie_id = movie.id group by director.fname, director.lname order by sum(movie.budget) desc limit 1;

**Output:**



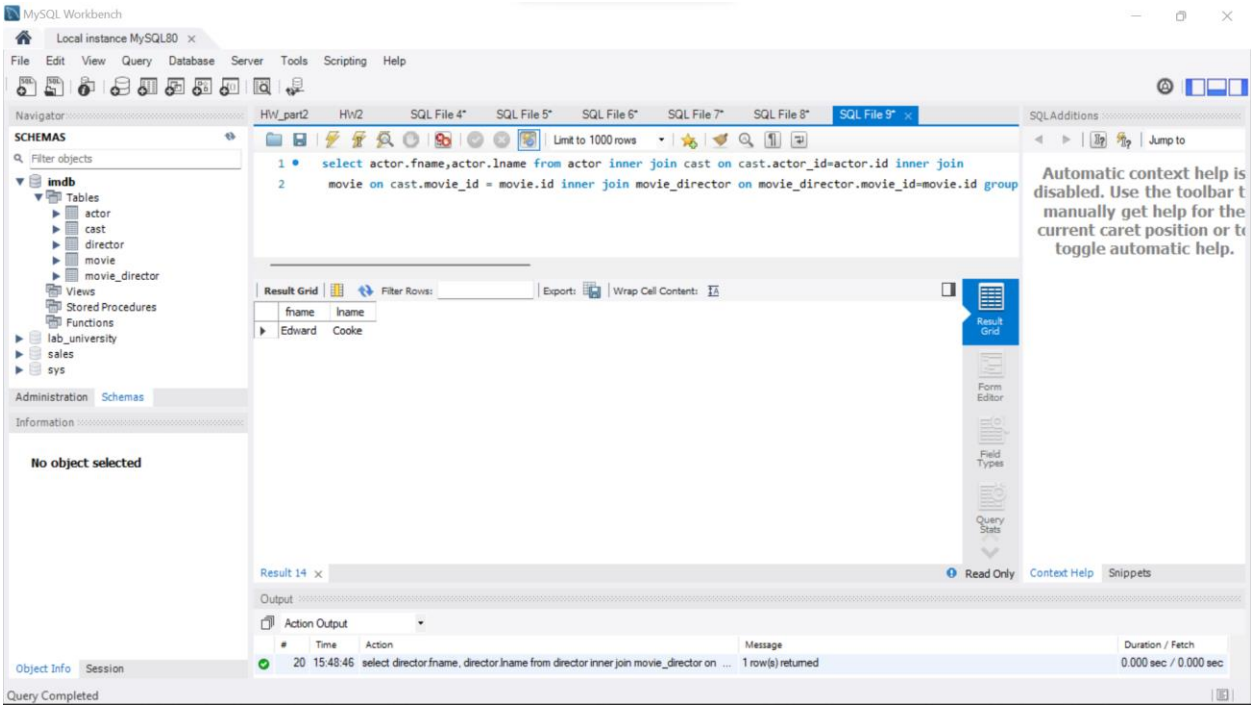
**Q9[10 pt]** Find all the actors who acted in films by at least 5 distinct directors (i.e. actors who worked with at least 5 distinct directors).

**Solution:**

**SQL Query:**

```
select actor.fname,actor.lname from actor inner join cast on cast.actor_id=actor.id inner join movie on cast.movie_id =movie.id inner join movie_director on movie_director.movie_id=movie.id group by actor.fname,actor.lname having count(distinct movie_director.director_id) >= 5;
```

**Output:**



**Q10 [10 pt]** For each year, count the number of movies in that year that had only female actors.
**Solution:**

**SQL Query:**

```
select movie.release_year,count(*) as female_only_movies_count from movie inner join cast on movie.id = cast.movie_id left join actor on cast.actor_id = actor.id where actor.gender ='female' and movie.id not in (select distinct movie.id from movie inner join cast on movie.id = cast.movie_id inner join actor on cast.actor_id = actor.id where actor.gender='male')group by movie.release_year order by movie.release_year;
```

**Output:**