20 Questions translation into SQL Queries:

In this step, the questions presented in part 1 are translated into SQL Queries

1. **Which movies were release on same date as the movie "Harry Potter and the Goblet of Fire"**

   select m1.movie_id, m1.title, m1.release_date, m1.year from movies m1, movies m2
   where m2.title = 'Harry Potter and the Goblet of Fire' and
   m1.release_date = m2.release_date;

```
postgres=# select m1.movie_id, m1.title, m1.release_date, m1.year from movies m1, movies m2
postgres-# where m2.title = 'Harry Potter and the Goblet of Fire' and
postgres-# m1.release_date = m2.release_date;
 movie_id |                title                | release_date | year
----------+-------------------------------------+--------------+------
      674 | Harry Potter and the Goblet of Fire | 2005-11-05   | 2005
(1 row)
```

   - Seems like it is the only movie released on that day.

2. **which movies have low budget but high revenue?**

   select m.movie_id, m.title, br.m_budget, br.m_revenue from budget_revenue br, movies m
   where m.movie_id = br.movie_id and
   br.m_budget < m_revenue;

```
postgres=# select m.movie_id, m.title,br.m_budget, br.m_revenue from budget_revenue br, movies m
postgres-# where m.movie_id = br.movie_id and
postgres-# br.m_budget < m_revenue;
 movie_id |                          title                          | m_budget  | m_revenue
----------+---------------------------------------------------------+-----------+------------
    19995 | Avatar                                                  | 237000000 | 2787965087
      285 | Pirates of the Caribbean At World s End                 | 300000000 |  961000000
   206647 | Spectre                                                 | 245000000 |  880674609
    49026 | The Dark Knight Rises                                   | 250000000 | 1084939099
    49529 | John Carter                                             | 260000000 |  284139100
```

3. **List the name and id of all movies that has a budget over 150000000, with female actors**

```
select m.movie_id, m.title, a.actor_name, br.m_budget from movies m, actors a,
budget_revenue br, gender g, movie_actors ma
where m.movie_id = br.movie_id and
br.m_budget > 150000000 and
ma.movie_id = br.movie_id and
ma.actor_id = a.actor_id and
a.gender_id = g.gender_id and

g. gender = 'Female';
```

```
postgres=# select m.movie_id, m.title, a.actor_name, br.m_budget from movies m, actors a, budget_revenue br,
gender g, movie_actors ma
postgres-# where m.movie_id = br.movie_id and
postgres-# br.m_budget > 150000000 and
postgres-# ma.movie_id = br.movie_id and
postgres-# ma.actor_id = a.actor_id and
postgres-# a.gender_id = g.gender_id and
postgres-# g. gender = 'Female';
 movie_id |                          title                          |      actor_name      | m_budget
----------+---------------------------------------------------------+----------------------+-----------
     2268 | The Golden Compass                                      | Dakota Blue Richards | 180000000
      254 | King Kong                                               | Naomi Watts          | 207000000
      597 | Titanic                                                 | Kate Winslet         | 200000000
    12155 | Alice in Wonderland                                     | Mia Wasikowska       | 200000000
    62177 | Brave                                                   | Kelly Macdonald      | 185000000
```

4. **Which actor has appeared in most movies and what is that count?**

```
select a.actor_id, a.actor_name, count(ma.actor_id) as max_movies_acted from movie_actors
ma, actors a
where a.actor_id = ma.actor_id
group by (a.actor_id, a.actor_name)
having count(ma.actor_id) IN (select max(ma_count) from
                                (select count(actor_id) as ma_count from movie_actors
                                 group by (actor_id)) as max_ma_count);
```

```
postgres=# select a.actor_id, a.actor_name, count(ma.actor_id) as max_movies_acted from movie_actors ma, actors a
postgres-# where a.actor_id = ma.actor_id
postgres-# group by (a.actor_id, a.actor_name)
postgres-# having count(ma.actor_id) IN (select max(ma_count) from
postgres(#                              (select count(actor_id) as ma_count from movie_actors
postgres(#                               group by (actor_id)) as max_ma_count);
 actor_id |  actor_name  | max_movies_acted
----------+--------------+------------------
     1892 | Matt Damon   |               21
       62 | Bruce Willis |               21
(2 rows)
```

5. What is the highest budgeted movie per year?

```
select m.movie_id, m.title, m.year, br.m_budget as max_budget from movies m,
budget_revenue br,
(select m.year as movie_year, max(br.m_budget) as max_budget from budget_revenue br,
movies m
where m.movie_id = br.movie_id
group by(m.year)) as max_budget_year

where m.movie_id = br.movie_id and
m.year = max_budget_year.movie_year and
br.m_budget = max_budget_year.max_budget

order by m.year DESC;
```

```
postgres=# select m.movie_id, m.title, m.year, br.m_budget as max_budget from movies m, budget_revenue br,
postgres-# (select m.year as movie_year, max(br.m_budget) as max_budget from budget_revenue br, movies m
postgres(# where m.movie_id = br.movie_id
postgres(# group by(m.year)) as max_budget_year
postgres-#
postgres-# where m.movie_id = br.movie_id and
postgres-# m.year = max_budget_year.movie_year and
postgres-# br.m_budget = max_budget_year.max_budget
postgres-#
postgres-# order by m.year DESC;
 movie_id |                  title                  | year | max_budget
----------+-----------------------------------------+------+------------
   271110 | Captain America Civil War               | 2016 |  250000000
   209112 | Batman v Superman Dawn of Justice       | 2016 |  250000000
    99861 | Avengers Age of Ultron                  | 2015 |  280000000
   122917 | The Hobbit The Battle of the Five Armies | 2014 |  250000000
   127585 | X Men Days of Future Past               | 2014 |  250000000
    57201 | The Lone Ranger                         | 2013 |  255000000
    49529 | John Carter                             | 2012 |  260000000
     1865 | Pirates of the Caribbean On Stranger Tides | 2011 |  380000000
```

6. list the name of the movies and its genre which has the highest votes

```
select m.title, g.genre_name, m.votes from movies m, genre g, movie_genre mg
where m.movie_id = mg.movie_id and
mg.genre_id = g.genre_id and
m.votes = (select max(m.votes) from movies m);
```

```
postgres=# select m.title, g.genre_name, m.votes from movies m, genre g, movie_genre mg
postgres-# where m.movie_id = mg.movie_id and
postgres-# mg.genre_id = g.genre_id and
postgres-# m.votes = (select max(m.votes) from movies m);
   title    | genre_name | votes
------------+------------+-------
 Fight Club | Drama      |   8.3
(1 row)
```

7. **find the actor who has the most movies under the genre "Action"**

select a.actor_name, count(ma.actor_id) as max_action_movies from genre g, movie_genre mg, movie_actors ma, actors a

where ma.movie_id = mg.movie_id and
mg.genre_id = g.genre_id and
a.actor_id = ma.actor_id and
g.genre_name = 'Action'

GROUP BY (a.actor_name)
HAVING count(ma.actor_id) = (

select max(action_count)from
(select count(ma.actor_id) as action_count from genre g, movie_genre mg, movie_actors ma, actors a
where ma.movie_id = mg.movie_id and
mg.genre_id = g.genre_id and
a.actor_id = ma.actor_id and
g.genre_name = 'Action'
GROUP BY (a.actor_name)) as max_action_movies

);

```
postgres=# select a.actor_name, count(ma.actor_id) as max_action_movies from genre g, movie_genre mg, movie_actors ma, ac
tors a
postgres-#
postgres-# where ma.movie_id = mg.movie_id and
postgres-# mg.genre_id = g.genre_id and
postgres-# a.actor_id = ma.actor_id and
postgres-# g.genre_name = 'Action'
postgres-#
postgres-# GROUP BY (a.actor_name)
postgres-# HAVING count(ma.actor_id) = (
postgres(#
postgres(# select max(action_count)from
postgres(# (select count(ma.actor_id) as action_count from genre g, movie_genre mg, movie_actors ma, actors a
postgres(# where ma.movie_id = mg.movie_id and
postgres(# mg.genre_id = g.genre_id and
postgres(# a.actor_id = ma.actor_id and
postgres(# g.genre_name = 'Action'
postgres(# GROUP BY (a.actor_name)) as max_action_movies
postgres(#
postgres(# );
  actor_name  | max_action_movies
--------------+------------------
 Bruce Willis |               13
(1 row)
```

8. find the Names of the male and female actors who has a total revenue over 1000000000

```
select DISTINCT a.actor_name, g.gender from budget_revenue br, movie_actors ma, gender g,
actors a
where br.movie_id = ma.movie_id and
ma.actor_id = a.actor_id and
a.gender_id = g.gender_id and
br.m_revenue > 1000000000
ORDER BY (a.actor_name);
```

```
postgres=# select DISTINCT a.actor_name, g.gender from budget_revenue br, movie_actors ma, gender g, actors a
postgres-# where br.movie_id = ma.movie_id and
postgres-# ma.actor_id = a.actor_id and
postgres-# a.gender_id = g.gender_id and
postgres-# br.m_revenue > 1000000000
postgres-# ORDER BY (a.actor_name);
     actor_name      | gender
---------------------+--------
 Bryce Dallas Howard | Female
 Chris Evans         | Male
 Chris Hemsworth     | Male
 Chris Pratt         | Male
 Christian Bale      | Male
```

9. how many Number of movies were acted by each actor.

```
select a.actor_id, a.actor_name, count(ma.movie_id) as number_of_movies_acted
from actors a, movie_actors ma
where a.actor_id = ma.actor_id
GROUP BY (a.actor_id, a.actor_name)
ORDER BY (a.actor_id, a.actor_name);
```

```
postgres=# select a.actor_id, a.actor_name, count(ma.movie_id) as number_of_movies_acted
postgres-# from actors a, movie_actors ma
postgres-# where a.actor_id = ma.actor_id
postgres-# GROUP BY (a.actor_id, a.actor_name)
postgres-# ORDER BY (a.actor_id, a.actor_name);
 actor_id |         actor_name          | number_of_movies_acted
----------+-----------------------------+------------------------
        2 | Tommy Lee Jones             |                      1
        3 | Harrison Ford               |                     12
       13 | Albert Brooks               |                      1
       14 | Ellen DeGeneres             |                      1
       20 | Elizabeth Perkins           |                      1
       31 | Tom Hanks                   |                     17
```

10.find the names of the actor who had no releases in the year 2008

```
select a.actor_name from actors a
where a.actor_name NOT IN (
select a.actor_name from actors a, movie_actors ma, movies m1, movies m2
where a.actor_id = ma.actor_id and
ma.movie_id = m1.movie_id and
m1.year = 2008 and
m1.year = m2.year
)
ORDER BY (a.actor_name)
```

```
postgres=# select a.actor_name from actors a
postgres-# where a.actor_name NOT IN (
postgres(#
postgres(# select a.actor_name from actors a, movie_actors ma, movies m1, movies m2
postgres(# where a.actor_id = ma.actor_id and
postgres(# ma.movie_id = m1.movie_id and
postgres(# m1.year = 2008 and
postgres(# m1.year = m2.year
postgres(#
postgres(# )
postgres-#
postgres-# ORDER BY (a.actor_name);
        actor_name
---------------------------
 Aaran Thomas
 Aaron Eckhart
 Aaron Kwok
 Aaron Paul
 Abbie Cornish
 Adam Beach
 Adrien Brody
```

11. find the movies with votes > 8 and budget less than 105000000 and had revenue greater than 105000000

```
select m.title from movies m, budget_revenue br
where m.votes > 8 and
br.m_budget < 105000000 and
br.m_revenue > 105000000
```

```
postgres=# select m.title from movies m, budget_revenue br
postgres-# where m.votes > 8 and
postgres-# br.m_budget < 105000000 and
postgres-# br.m_revenue > 105000000;
                    title
-----------------------------------------------
 The Dark Knight
 Interstellar
 Inception
 The Lord of the Rings The Return of the King
 Fight Club
```

12. What is the budget spent on each genre?

```
select g.genre_name, SUM(br.m_budget) as budget_on_genre
from genre g, movie_genre mg, budget_revenue br
where br.movie_id = mg.movie_id and
mg.genre_id = g.genre_id
GROUP BY (g.genre_name)
ORDER BY (g.genre_name);
```

```
postgres=# select g.genre_name, SUM(br.m_budget) as budget_on_genre
postgres-# from genre g, movie_genre mg, budget_revenue br
postgres-# where br.movie_id = mg.movie_id and
postgres-# mg.genre_id = g.genre_id
postgres-# GROUP BY (g.genre_name)
postgres-# ORDER BY (g.genre_name);
   genre_name    | budget_on_genre
-----------------+-----------------
 Action          |     41170179574
 Adventure       |     35228240400
 Animation       |     11274300067
 Comedy          |     16457836226
 Crime           |      5313500000
```

13. find the total revenue made by "James Bond" each year. (the database does not have data related to “James Bond” (among the rows we populated), so changing the actor name**)**

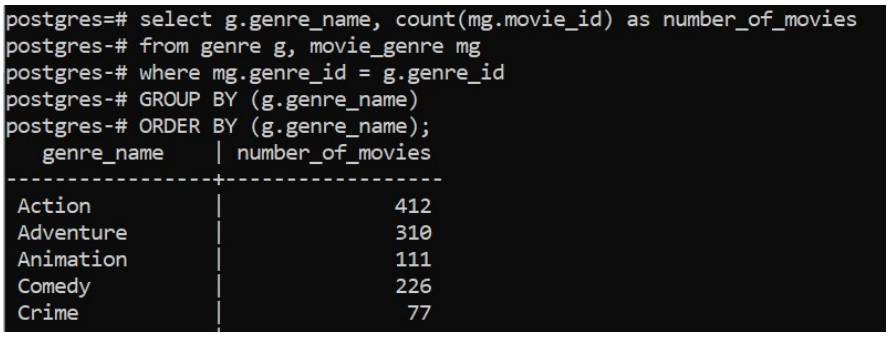
13. find the total revenue made by "James McAvoy" each year.

```
select m.year, SUM(br.m_revenue) as James_McAvoy_revenue
from movies m, budget_revenue br, movie_actors ma, actors a
where br.movie_id = m.movie_id and
ma.movie_id = br.movie_id and
a.actor_id = ma.actor_id and
a.actor_name = 'James McAvoy'
GROUP BY (m.year)
ORDER BY (m.year);
```

```
postgres=# select m.year, SUM(br.m_revenue) as James_McAvoy_revenue
postgres-# from movies m, budget_revenue br, movie_actors ma, actors a
postgres-# where br.movie_id = m.movie_id and
postgres-# ma.movie_id = br.movie_id and
postgres-# a.actor_id = ma.actor_id and
postgres-# a.actor_name = 'James McAvoy'
postgres-# GROUP BY (m.year)
postgres-# ORDER BY (m.year);
 year | james_mcavoy_revenue
------+----------------------
 2008 |            258270008
 2011 |            534592881
 2014 |            747862775
 2016 |            543934787
(4 rows)
```

14. What are the number of movies made per each genre?

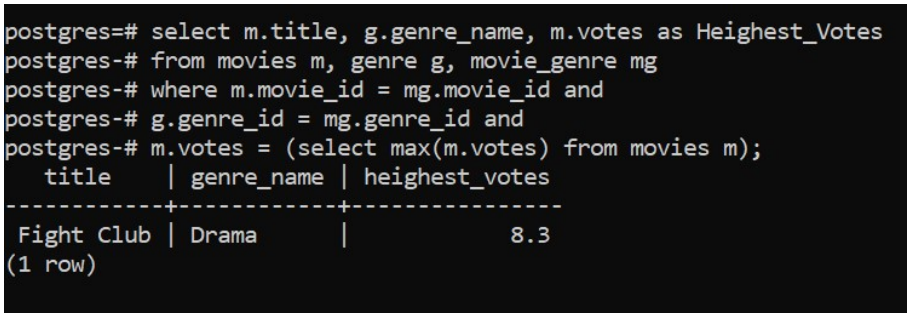
```
select g.genre_name, count(mg.movie_id) as number_of_movies
from genre g, movie_genre mg
where mg.genre_id = g.genre_id
GROUP BY (g.genre_name)
ORDER BY (g.genre_name);
```



```
postgres=# select g.genre_name, count(mg.movie_id) as number_of_movies
postgres-# from genre g, movie_genre mg
postgres-# where mg.genre_id = g.genre_id
postgres-# GROUP BY (g.genre_name)
postgres-# ORDER BY (g.genre_name);
   genre_name    | number_of_movies
-----------------+-----------------
 Action          |              412
 Adventure       |              310
 Animation       |              111
 Comedy          |              226
 Crime           |               77
```

15. find which genre of movie is most popular(highest votes)

```
select m.title, g.genre_name, m.votes as Heighest_Votes
from movies m, genre g, movie_genre mg
where m.movie_id = mg.movie_id and
g.genre_id = mg.genre_id and
m.votes = (select max(m.votes) from movies m);
```



```
postgres=# select m.title, g.genre_name, m.votes as Heighest_Votes
postgres-# from movies m, genre g, movie_genre mg
postgres-# where m.movie_id = mg.movie_id and
postgres-# g.genre_id = mg.genre_id and
postgres-# m.votes = (select max(m.votes) from movies m);
   title    | genre_name | heighest_votes
------------+------------+----------------
 Fight Club | Drama      |            8.3
(1 row)
```

16. Which year saw the most releases?

```
select m.year, count(m.movie_id) from movies m
GROUP BY (m.year)
HAVING count(m.movie_id) = (select max(m_count) from
                            (select m.year, count(m.movie_id) as m_count
                            from movies m
                            GROUP BY (m.year)) as m_count_value);
```

```
postgres=# select m.year, count(m.movie_id) as max_movies_released from movies m
postgres-# GROUP BY (m.year)
postgres-# HAVING count(m.movie_id) = (select max(m_count) from
postgres(#                            (select m.year, count(m.movie_id) as m_count
postgres(#                            from movies m
postgres(#                            GROUP BY (m.year)) as m_count_value);
 year | max_movies_released
------+--------------------
 2009 |                  55
(1 row)
```

17. How many Number of movies were released in each year?

```
select m.year, count(m.movie_id) from movies m
GROUP BY (m.year)
ORDER BY (m.year) DESC;
```

```
postgres=# select m.year, count(m.movie_id) from movies m
postgres-# GROUP BY (m.year)
postgres-# ORDER BY (m.year) DESC;
 year | count
------+-------
 2016 |    31
 2015 |    50
 2014 |    52
 2013 |    52
 2012 |    49
 2011 |    54
 2010 |    53
```

18. find the genre's released in the year 2009

```
select DISTINCT g.genre_name as genres_released_in_2009
from movies m, genre g, movie_genre mg
where m.year = 2009 and
m.movie_id = mg.movie_id and
mg.genre_id = g.genre_id;
```

```
postgres=# select DISTINCT g.genre_name as genres_released_in_2009
postgres-# from movies m, genre g, movie_genre mg
postgres-# where m.year = 2009 and
postgres-# m.movie_id = mg.movie_id and
postgres-# mg.genre_id = g.genre_id ;
 genres_released_in_2009
-------------------------
 Music
 Fantasy
 Drama
 Thriller
 Documentary
 Romance
```

19. list the highest budgeted movie in each year

```
select m.year, MAX(br.m_budget) as max_budget
from movies m, budget_revenue br
where m.movie_id = br.movie_id
GROUP BY (m.year)
ORDER BY (m.year) DESC;
```

```
postgres=# select m.year, MAX(br.m_budget) as max_budget
postgres-# from movies m, budget_revenue br
postgres-# where m.movie_id = br.movie_id
postgres-# GROUP BY (m.year)
postgres-# ORDER BY (m.year) DESC;
 year | max_budget
------+------------
 2016 |  250000000
 2015 |  280000000
 2014 |  250000000
 2013 |  255000000
 2012 |  260000000
 2011 |  380000000
```

20. find the name of the actors who has worked in more than 2 genres

```
select a.actor_name, COUNT(mg.genre_id) as number_of_genres
from actors a, movie_actors ma, movie_genre mg
where mg.movie_id = ma.movie_id and
ma.actor_id = a.actor_id
GROUP BY (a.actor_name)
HAVING COUNT(mg.genre_id) > 2
ORDER BY (a.actor_name);
```

```
postgres=# select a.actor_name, COUNT(mg.genre_id) as number_of_genres
postgres-# from actors a, movie_actors ma, movie_genre mg
postgres-# where mg.movie_id = ma.movie_id and
postgres-# ma.actor_id = a.actor_id
postgres-# GROUP BY (a.actor_name)
postgres-# HAVING COUNT(mg.genre_id) > 2
postgres-# ORDER BY (a.actor_name);
       actor_name       | number_of_genres
------------------------+------------------
 Aaron Eckhart          |               12
 Abbie Cornish          |                4
 Adam Beach             |                4
 Adam Sandler           |               31
 Al Pacino              |                7
```