CS307 · Database Principle

Assignment 1

何泽安 (He Zean)
12011323
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Q 1.1

```sql
WITH asian_films AS (
    SELECT *, MAX(year_released) OVER (PARTITION BY country_name) AS mx
    FROM movies m JOIN countries c ON m.country = c.country_code
    WHERE continent = 'ASIA'
)
SELECT country_name, title, mx
FROM asian_films
WHERE year_released = mx
ORDER BY country_name;
```

54 rows

	country_name	title	mx
1	Armenia	Sayat Nova	1969
2	Bangladesh	Navāva	2017
3	Bangladesh	Ḍhākā Ayāṭāka	2017
4	Bangladesh	Vasa 2	2017
5	China	Tángrénjiē tàn àn	2018
6	China	Hóng Hǎi Xíng Dòng	2018
7	Georgia	Monanieba	1987
8	Hong Kong	Caak³ Daan² Zyun¹ Gaa¹	2017
9	Hong Kong	Hap⁶ Dou⁶ Lyun⁴ Mang⁴	2017
10	India	Sonu Ke Titu Ki Sweety	2018

Q 1.2

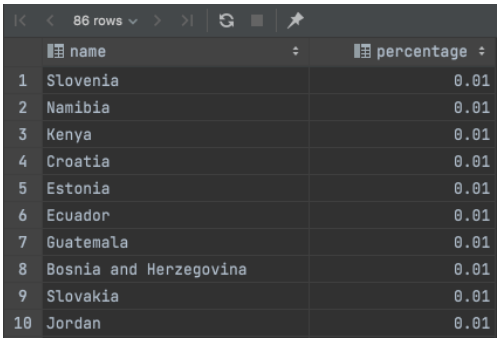
```sql
WITH cnt AS (
    SELECT country,
           COUNT(*)              AS x,
           AVG(COUNT(*)) OVER () AS avg
    FROM movies
    GROUP BY country
)
SELECT c.country_name
FROM cnt JOIN countries c ON cnt.country = c.country_code
WHERE cnt.x > cnt.avg;
```

10 rows

	country_name
1	United States
2	China
3	India
4	Japan
5	South Korea
6	France
7	Germany
8	Italy
9	Russia
10	United Kingdom

Q 1.3

```sql
WITH cnt AS (
    SELECT c.country_name                    AS name,
           COUNT(*) / SUM(COUNT(*)) OVER () AS per
    FROM movies
             JOIN countries c ON movies.country = c.country_code
    GROUP BY c.country_code
)
SELECT name, ROUND(100. * cnt.per, 2) AS percentage
FROM cnt
ORDER BY percentage;
```



86 rows

	name	percentage
1	Slovenia	0.01
2	Namibia	0.01
3	Kenya	0.01
4	Croatia	0.01
5	Estonia	0.01
6	Ecuador	0.01
7	Guatemala	0.01
8	Bosnia and Herzegovina	0.01
9	Slovakia	0.01
10	Jordan	0.01

Q 2.1

```sql
WITH rk AS (
    SELECT title, year_released, RANK() OVER (ORDER BY year_released DESC) AS r
    FROM movies
    WHERE country = (SELECT country_code FROM countries WHERE country_name = 'China')
)
SELECT title, year_released
FROM rk
WHERE rk.r <= 10
ORDER BY year_released DESC;
```

13 rows | Tx: Auto | DDL

	title	year_released
1	Hóng Hǎi Xíng Dòng	2018
2	Tángrénjiē tàn àn	2018
3	Fāng Huá	2017
4	Zeoi¹ Lung⁴	2017
5	Xiū Xiū De Tiě QuáN	2017
6	Zhàn Láng 2	2017
7	Chéng Fēng Pò Làng	2017
8	Xī Yóu Fú Yāo Piān	2017
9	Jiā Nián Huá	2017
10	Sān Shēng Sān Shì Shí Lǐ Táo Huā	2017

Q 2.2

```sql
WITH crk AS (
    SELECT c.continent,
           c.country_name,
           RANK() OVER (PARTITION BY c.continent
               ORDER BY COUNT(*) DESC) AS rk
    FROM movies m
             JOIN countries c ON m.country = c.country_code
    GROUP BY c.country_name, c.continent
)
SELECT continent, country_name
FROM crk
WHERE rk = 1;
```

5 rows | Tx: A

	continent	country_name
1	AFRICA	Nigeria
2	AMERICA	United States
3	ASIA	India
4	EUROPE	United Kingdom
5	OCEANIA	Australia

Q 2.3

```sql
WITH cufii AS (
    SELECT *
    FROM movies
             JOIN countries c ON movies.country = c.country_code
    WHERE country_name IN ('China', 'United States', 'France', 'Italy', 'India')
),
     cufii_actors AS (
         SELECT p.first_name                first_name,
                p.surname                   surname,
                m.country_name              country,
                RANK() OVER (PARTITION BY country_name
                    ORDER BY COUNT(*) DESC) rk
         FROM cufii m
```

```
                  JOIN credits cd ON cd.movieid = m.movieid
                  JOIN people p ON cd.peopleid = p.peopleid
         WHERE cd.credited_as = 'A'
         GROUP BY p.first_name, p.surname, m.country_name
     )
SELECT country, first_name, surname
FROM cufii_actors
WHERE cufii_actors.rk <= 3
ORDER BY country, cufii_actors.rk;
```

15 rows

	country	first_name	surname
1	China	Chao	Deng
2	China	Li	Gong
3	China	Wen	Jiang
4	France	Gérard	Depardieu
5	France	Catherine	Deneuve
6	France	Isabelle	Huppert
7	India	Akkineni Nageswara	Rao
8	India	Amitabh	Bachchan
9	India	Shah Rukh	Khan
10	Italy	Alberto	Sordi

Q 2.4

```
WITH cufii2010 AS (
    SELECT *
    FROM movies
             JOIN countries c ON movies.country = c.country_code
    WHERE country_name IN ('China', 'United States', 'France', 'Italy', 'India')
      AND year_released >= 2010
),
     cufii_actors_24 AS (
         SELECT p.first_name                first_name,
                p.surname                   surname,
                m.country_name              country,
                RANK() OVER (PARTITION BY country_name
                    ORDER BY COUNT(*) DESC) rk
         FROM cufii2010 m
                  JOIN credits cd ON cd.movieid = m.movieid
                  JOIN people p ON cd.peopleid = p.peopleid
         WHERE cd.credited_as = 'A'
         GROUP BY p.first_name, p.surname, m.country_name
         HAVING COUNT(*) > 3
     )
SELECT country, first_name, surname
FROM cufii_actors_24 ca
WHERE rk <= 3
ORDER BY country, ca.rk;
```

21 rows

	country	first_name	surname
1	China	Chao	Deng
2	China	Bingbing	Fan
3	China	Baihe	Bai
4	China	Qi	Shu
5	China	Carina	Lau
6	China	Baoqiang	Wang
7	China	Eddie	Peng
8	China	Jackie	Chan
9	China	Shaofeng	Feng
10	China	<null>	Angelababy

Q 3.1

```sql
WITH availble_cc AS (
    SELECT DISTINCT country,
                    year_released,
                    COUNT(*) OVER (PARTITION BY country,year_released) per_year,
                    COUNT(*) OVER (PARTITION BY country)               flag
    FROM movies
    WHERE year_released >= 2010
),
     computable AS (
         SELECT country_name,
                year_released,
                per_year,
                LAG(per_year, 1) OVER (PARTITION BY country_name ORDER BY year_released)
                    last_year
         FROM availble_cc m
                  JOIN countries c ON m.country = c.country_code
         WHERE flag >= 20
     )
SELECT country_name,
       year_released,
       per_year,
       ROUND(100 * (per_year::numeric - last_year) / last_year, 2) || '%' AS variation
FROM computable c
ORDER BY country_name, year_released;
```

97 rows

	country_name	year_released	per_year	variation
1	China	2010	9	<null>
2	China	2011	7	-22.22%
3	China	2012	7	0.00%
4	China	2013	14	100.00%
5	China	2014	19	35.71%
6	China	2015	24	26.32%
7	China	2016	14	-41.67%
8	China	2017	11	-21.43%
9	China	2018	2	-81.82%
10	France	2010	9	<null>