TD Récapitulatif SQL

Avec solutions

- **L3 MIASHS/Ingémath**
- **Université Paris Cité**
- Année 2024-2025
- Course Homepage

- Moodle

Recapitulatif SQL

Utiliser les outils les plus adaptés parmi ceux vus depuis le début de l'année pour répondre aux questions suivantes.

Schéma `world`

Question

Quel est le pays qui a le plus de villes recensées dans la table `world.city` ? Combien de villes ? (363 villes)

Solution

```
WITH country_city AS
    (SELECT name_country , COUNT(name_city) nbrcity
    FROM world.country NATURAL JOIN world.city
    GROUP BY name_country)

SELECT name_country, nbrcity
FROM country_city
WHERE nbrcity = (SELECT MAX(nbrcity)
                 FROM country_city) ;
```

Question

Quels sont les pays qui ont 3 ou plus langues officielles ? (8 lignes)

Solution

```
SELECT name_country
FROM world.country NATURAL JOIN world.countrylanguage
WHERE isofficial
GROUP BY name_country HAVING COUNT(*) > 2 ;
```

Question

Quels sont les pays dont plus de 1.000.000 d'habitants parlent une langue non officielle ? (72 lignes)

Solution

```
SELECT DISTINCT name_country
FROM world.country NATURAL JOIN world.countrylanguage
WHERE (NOT isofficial) AND
      (percentage / 100) * population_country >= 1000000 ;
```

Question

Quelles sont les langues qui sont officielles dans tous les continents où au moins une langue est parlée ? (1 ligne)

Solution

```
WITH R AS
    (SELECT count(DISTINCT continent)
    FROM world.country NATURAL JOIN world.countrylanguage)
SELECT language, count(DISTINCT continent) as nbcon
FROM world.country NATURAL JOIN world.countrylanguage WHERE isofficial
GROUP BY language
    HAVING count(DISTINCT continent) in (SELECT * FROM R)
ORDER BY nbcon DESC ;
```

ou

Solution

```
WITH continent_language AS
    (SELECT DISTINCT language , continent
    FROM country NATURAL JOIN countrylanguage
    WHERE isofficial),
all_continent_language AS
    (SELECT DISTINCT l.language , c.continent
    FROM countrylanguage l , continent_language c),
not_continent_language AS
    ((SELECT * FROM all_continent_language)
    EXCEPT
    (SELECT * FROM continent_language))
SELECT DISTINCT language
FROM countrylanguage
WHERE language NOT IN (SELECT language FROM not_continent_language) ;
```

Question

Quels sont les pays pour lesquels une langue non officielle est parlée par strictement plus de monde (dans le pays) qu'il n'y a d'habitants dans la capitale ? (118 lignes)

Solution

```
SELECT DISTINCT name_country
FROM (country c JOIN city ON id = capital)
    JOIN countrylanguage l ON c.countrycode = l.countrycode
WHERE NOT isofficial
AND percentage / 100 * population_country > population_city ;
```

Question

Quels est le nombre de villes par `region` ?

Solution

```
SELECT region , COUNT(id) AS nbr_city
FROM country NATURAL JOIN city
GROUP BY region ;
```

Schéma `pagila`

Question

Quel est l'acteur (`actor_id`) présent sur le plus de DVD (`inventory_id`) ?

Solution

```
WITH actor_dvd AS
    (SELECT actor_id , count(inventory_id) nbrdvd
    FROM actor NATURAL JOIN film_actor NATURAL JOIN inventory
    GROUP BY actor_id)
SELECT first_name , last_name
FROM actor NATURAL JOIN actor_dvd
WHERE nbrdvd = (SELECT MAX(nbrdvd) FROM actor_dvd) ;
```

Question

Quel est le prix moyen d'une location de DVD ?

Solution

```
SELECT AVG(amount)
FROM payment ;
```

Question

Quel est le DVD qui a rapporté le plus d'argent ? Le film (`film_id`)?

Solution

Pour le DVD :

```
WITH inventory_amount AS
    (SELECT inventory_id , SUM(amount) AS dollar
    FROM inventory NATURAL JOIN rental NATURAL JOIN payment
    GROUP BY inventory_id)
SELECT inventory_id , dollar
FROM  inventory_amount
WHERE dollar >= ALL (SELECT dollar FROM inventory_amount) ;
```

Solution

Et pour le film :

```
WITH film_amount AS
    (SELECT film_id , SUM(amount) AS dollar
    FROM inventory NATURAL JOIN rental NATURAL JOIN payment
    GROUP BY film_id)
SELECT film_id , dollar
FROM  inventory_amount
WHERE dollar >= ALL (SELECT dollar FROM film_amount) ;
```

Question

Quels sont les employés (`staff_id`) qui travaillent dans une autre ville que celle dans laquelle ils vivent ? (4 lignes)

Solution

```
WITH staff_maison AS
    (SELECT staff_id , city_id
    FROM (staff NATURAL JOIN address)),
staff_travail AS
    (SELECT staff_id , city_id
    FROM (staff p JOIN store s ON p.store_id = s.store_id) , address a
    WHERE a.address_id = s.address_id)
SELECT staff_id FROM staff_travail NATURAL JOIN staff_maison ;
```