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SELECT * FROM artist;
SELECT * FROM canvas_size;
SELECT * FROM image_link;
SELECT * FROM museum;
SELECT * FROM museum_hours;
SELECT * FROM product_size;
SELECT * FROM subject;
SELECT * FROM work;

```

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-- Problem Number 10
-- Identify the museums which are open on both Sunday and Monday

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SELECT
    m.name museum_name,
    m.city
FROM museum_hours mh1
JOIN museum m
ON m.museum_id=mh1.museum_id
WHERE day = 'Sunday'
AND EXISTS (
    SELECT
        1
    FROM museum_hours mh2
    WHERE mh2.museum_id = mh1.museum_id
    AND mh2.day = 'Monday');

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-- Problem Number 15
-- Which museum is open for the longest during a day.
-- Display museum name, states and hours open and which day?

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SELECT
    *
FROM (
    SELECT
        m.name museum_name,
        m.state,
        mh_ct.[day],
        mh_ct.[open],
        mh_ct.[close],
        ((mh_ct.close_minutes - mh_ct.open_minutes) / 60.0) AS hours_open,
        RANK() OVER(ORDER BY((mh_ct.close_minutes - mh_ct.open_minutes) / 60.0) DESC) AS rnk
    FROM (
        SELECT
            museum_id,
            day,
            [open],
            [close],
            CASE
                WHEN [open] LIKE '%AM%' AND [open] NOT LIKE '12%' THEN
                    (CAST(SUBSTRING([open], 1, CHARINDEX(':', [open])-1) AS INT) * 60)
                +

```

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        CAST(SUBSTRING([open], CHARINDEX(':', [open])+1, 2) AS INT)
    WHEN [open] LIKE '12%AM%' THEN
        CAST(SUBSTRING([open], CHARINDEX(':', [open])+1, 2) AS INT)
    WHEN [open] LIKE '%PM%' AND [open] NOT LIKE '12%' THEN
        ((CAST(SUBSTRING([open], 1, CHARINDEX(':', [open])-1) AS INT) +
         12) * 60) +
        CAST(SUBSTRING([open], CHARINDEX(':', [open])+1, 2) AS INT)
    WHEN [open] LIKE '12%PM%' THEN
        (12 * 60) + CAST(SUBSTRING([open], CHARINDEX(':', [open])+1, 2) AS
        INT)
    END AS open_minutes,

    CASE
    WHEN [close] LIKE '%AM%' AND [close] NOT LIKE '12%' THEN
        (CAST(SUBSTRING([close], 1, CHARINDEX(':', [close])-1) AS INT) *
         60) +
        CAST(SUBSTRING([close], CHARINDEX(':', [close])+1, 2) AS INT)
    WHEN [close] LIKE '12%AM%' THEN
        CAST(SUBSTRING([close], CHARINDEX(':', [close])+1, 2) AS INT)
    WHEN [close] LIKE '%PM%' AND [close] NOT LIKE '12%' THEN
        ((CAST(SUBSTRING([close], 1, CHARINDEX(':', [close])-1) AS INT) +
         12) * 60) +
        CAST(SUBSTRING([close], CHARINDEX(':', [close])+1, 2) AS INT)
    WHEN [close] LIKE '12%PM%' THEN
        (12 * 60) + CAST(SUBSTRING([close], CHARINDEX(':', [close])+1, 2) AS
        INT)
    END AS close_minutes
    FROM museum_hours
) AS mh_ct
JOIN museum m ON m.museum_id=mh_ct.museum_id
WHERE open_minutes IS NOT NULL AND close_minutes IS NOT NULL) osub
WHERE osub.rnk = 1;

```

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-- Problem number 18
-- Display the country and the city with most no. of museum
-- Output 2 separate columns to mention the city and country
-- If there are multiple value => separate them with comma.

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WITH cte_country AS (
    SELECT
        country,
        COUNT(1) count_museum,
        RANK() OVER(ORDER BY COUNT(1) DESC) rnk
    FROM museum
    GROUP BY country
), cte_city AS (
    SELECT
        city,
        COUNT(1) count_museum,
        RANK() OVER(ORDER BY COUNT(1) DESC) rnk
    FROM museum
    GROUP BY city
)

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)  
SELECT  
    STRING_AGG(country, ' , ') WITHIN GROUP (ORDER BY country) country,  
    STRING_AGG(city, ' , ') city  
FROM cte_country  
CROSS JOIN cte_city  
WHERE cte_country.rnk = 1  
AND cte_city.rnk = 1;
```