Famous Paintings Analysis

Unveiling Insights: A MySQL-Driven Analysis

Fetch All the Paintings which are not displayed on any museums.

```sql
SELECT
    *
FROM
    work
WHERE
    museum_id NOT IN (SELECT
            museum_id
        FROM
            museum);
```

work_id	name	artist_id	style	museum_id
125752	Arabian Horses at Pasture	757	Baroque	
125818	Count Halm on His Basedow Estate	757	Baroque	
125763	Napoleon Before the Burning City of Smolensk	757	Baroque	
125774	Peasants Resting in the Field	757	Baroque	
125785	Portrait Oberleutnant Theodor Von Klein	757	Baroque	
125796	The Rescue of Count Munnich	757	Baroque	
125807	The Stable Yard	757	Baroque	
24532	Jacob A. Stamler Departing Le Havre	563		
124470	Kaleda off Le Havre	563		
124479	R. Bell & Co. Steamship Bothal in a Heavy ...	563		
124488	Steam Sailing Ship Finsbury in a Stormy Sea	563		
124497	The American Ship Olive S Southard in French ...	563		

Are there museums without any paintings?
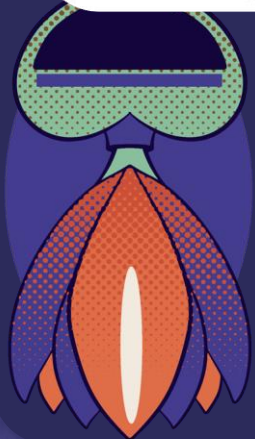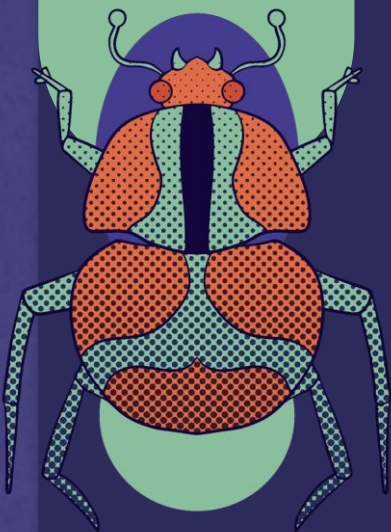
```sql
SELECT
    *
FROM
    museum
WHERE
    museum_id NOT IN (SELECT
            museum_id
        FROM
            work);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: TA

museum_id	name	address	city	state	postal	country	phone	url
71	Ohara Museum of Art	1 Chome-1-15 Central	Kurashiki	Okayama	710-8575	Japan	+81 86-422-0005	https://www.ohara.or.jp/en/
72	Musée Marmottan Monet	2 Rue Louis Boilly	Paris	NULL	75016	France	+33 1 44 96 50 33	https://www.marmottan.fr/en/
73	Walters Art Museum	600 N Charles St	Baltimore	MD	21201	USA	+1 410 547-9000	https://thewalters.org/
74	Kröller-Müller Museum	Houtkampweg 6	6731 AW Otterlo	NULL	NULL	Netherlands	+31 318 591 241	https://krollermuller.nl/en
75	National Museum	Cathays Park	Cardiff	Wales	CF10 3NP	UK	+44 300 111 2333	https://museum.wales/
76	Columbus Museum of Art	480 E Broad St	Columbus	OH	43215	USA	+1 (614) 221-6801	https://www.columbusmuseum.org/
77	Kimbell Art Museum	3333 Camp Bowie Blvd	Fort Worth	TX	76107	USA	+(817) 332-8451	https://kimbellart.org/
78	Walker Art Gallery	William Brown St	Liverpool	NULL	L3 8EL	UK	+44 151 478 4199	https://www.liverpoolmuseums.org.uk/
79	National Museum of Art Architecture and Design	Brynjulf Bulls plass 3	Oslo	NULL	250	Norway	+47 21 98 20 00	https://www.nasjonalmuseet.no/en/
80	Dallas Museum of Art	1717 N Harwood St	Dallas	TX	75201	USA	+1(214) 922-1200	https://www.dma.org/
81	Museum of Fine Arts	Hodlerstrasse 8	Bern	NULL	3011	Switzerland	+41 31 328 09 44	https://www.kunstmuseumbern.ch/en/
82	Army Museum	129 Rue de Grenelle	Paris	NULL	75007	France	+33 810 11 33 99	https://www.musee-armee.fr/en/english-version.html
83	Chrysler Museum of Art	1 Memorial Pl	Norfolk	VA	23510	USA	+1(757) 664-6200	https://chrysler.org/
84	National Gallery Prague	Václavské nám. 68	Nové Měst	NULL	110 15	Czechia	+420 224 497 111	https://www.nm.cz/en
85	Norton Simon Museum	411 W Colorado Blvd	Pasadena	CA	91105	USA	+1(626) 449-6840	https://www.nortonsimon.org/
86	Courtauld Gallery	Somerset House	Stran	London	WC2R 0RN	UK	+44 20 3947 7777	https://courtauld.ac.uk/

How many paintings have an asking price of
more than their regular price?

```sql
SELECT
    COUNT(work_id)
FROM
    product_size
WHERE
    sale_price > regular_price;
```
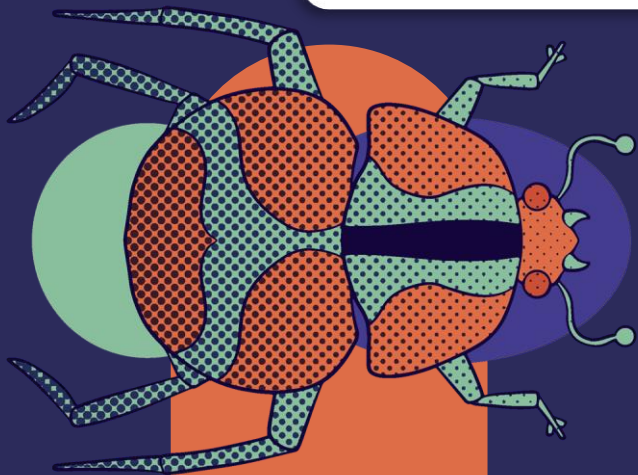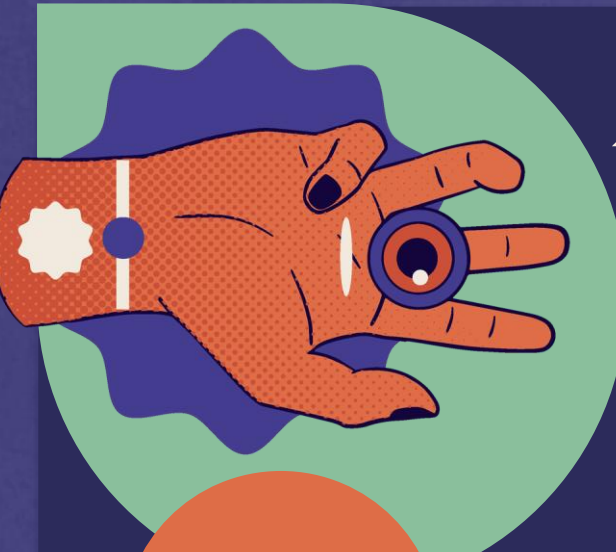
count(work_id)
0

Which canvas size costs the most?

```sql
SELECT
    cs.size_id, cs.label, ps.sale_price
FROM
    canvas_size cs
        JOIN
    product_size ps ON cs.size_id = ps.size_id
WHERE
    ps.sale_price = (SELECT
            MAX(sale_price)
        FROM
            product_size)
```


size_id	label	sale_price
4896	48" x 96"(122 cm x 244 cm)	1115

Identify the museums with invalid city information in the given dataset

```sql
SELECT
    *
FROM
    museum m
WHERE
    m.city REGEXP '^[0-9]';
```

museum_id	name	address	city	state	postal	country	phone	url
34	The State Hermitage Museum	Palace Square	2	Sankt-Peterburg	190000	Russia	7 812 710-90-79	https://www.hermitagemuseum.org/wps/portal/hermitage/
36	Museum Folkwang	Museumsplatz 1	45128	Essen	NULL	Germany	49 201 8845000	https://www.museum-folkwang.de/en
37	Museum of Grenoble	5 Pl. de Lavalette	38000	Grenoble	NULL	France	33 4 76 63 44 44	https://www.museedegrenoble.fr/1986-the-museum-in-english.htm
38	Musée des Beaux-Arts de Quimper	40 Pl. Saint-Corentin	29000	Quimper	NULL	France	33 2 98 95 45 20	https://www.mbaq.fr/en/home-3.html
40	Musée du Louvre	Rue de Rivoli	75001	Paris	NULL	France	33 1 40 20 50 50	https://www.louvre.fr/en
74	Kröller-Müller Museum	Houtkampweg 6	6731 AW Otterlo	NULL	NULL	Netherlands	+31 318 591 241	https://krollermuller.nl/en

```
select * from(
    select subject, count(1) as No_of_Works,
    rank() over(order by count(1) desc) as Ranking
    from subject
    join work on
    subject.work_id = work.work_id
    group by subject) x
where Ranking < 11;
```

subject	No_of_Works	Ranking
Portraits	677	1
Landscape Art	396	2
Abstract/Modern Art	344	3
Marine Art/Maritime	257	4
Rivers/Lakes	251	5
Nude	241	6
Flowers	221	7
Still-Life	212	8
Horses	188	9
Seascapes	167	10
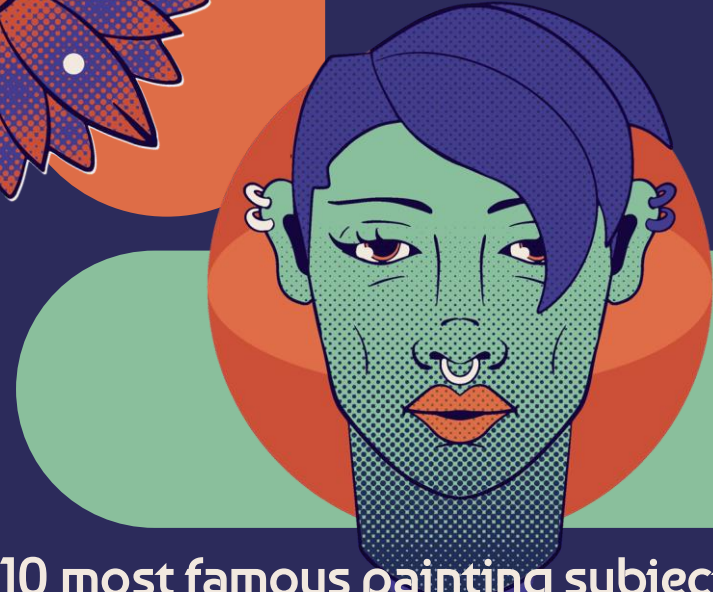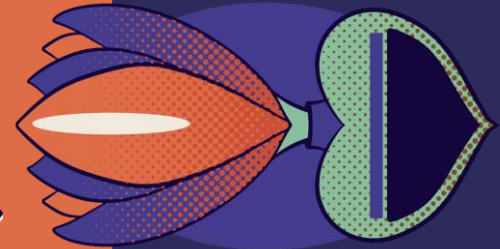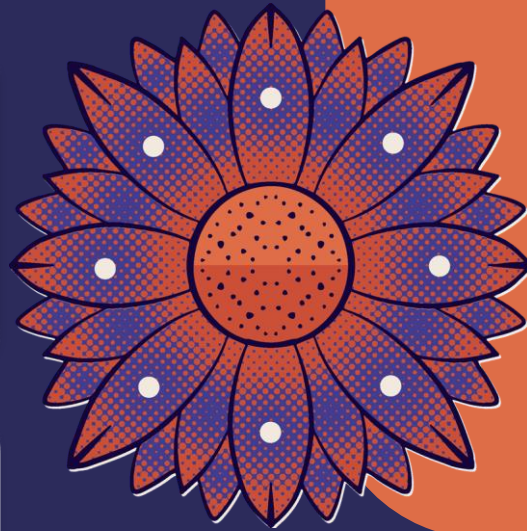
fetch the top 10 most famous painting subject

```
select count(1)
from (select museum_id, count(1)
      from museum_hours
      group by museum_id
      having count(1) = 7) x;
```

count(1)
18

How many museums are open every single day?

Which are the top 5 most popular museum?

```sql
SELECT
    work.museum_id,
    museum.name,
    city,
    country,
    COUNT(*) AS No_of_Paintings
FROM
    work
        JOIN
    museum ON work.museum_id = museum.museum_id
WHERE
    work.museum_id NOT LIKE ''
GROUP BY work.museum_id
ORDER BY COUNT(*) DESC
LIMIT 5;
```
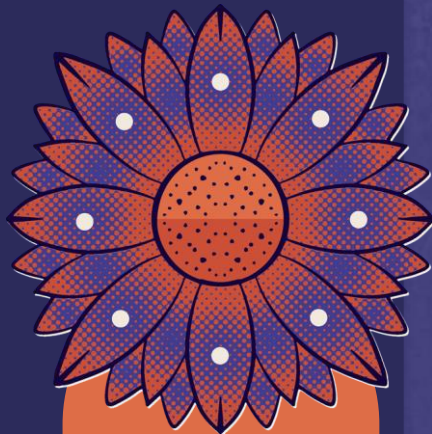
museum_id	name	city	country	No_of_Paintings
35	The Metropolitan Museum of Art	New York	USA	536
43	Rijksmuseum	Amsterdam	Netherlands	352
47	National Gallery	London	UK	314
46	National Gallery of Art	Washington	USA	175
41	National Maritime Museum	London	United Kingdom	131

Identify the museums which are open on both Sunday and Monday. Display museum name, city.

```sql
SELECT DISTINCT
    (museum_hours.museum_id) AS Museum_id, name, city
FROM
    museum_hours
        JOIN
    museum ON museum_hours.museum_id = museum.museum_id
WHERE
    day = 'Sunday'
        AND EXISTS( SELECT
            1
        FROM
            museum_hours mh1
        WHERE
            museum_hours.museum_id = mh1.museum_id
                AND mh1.day = 'Monday');
```

Museum_id	name	city
30	The Museum of Modern Art	New York
31	Pushkin State Museum of Fine Arts	Moscow
32	National Gallery of Victoria	Melbourne
35	The Metropolitan Museum of Art	New York
37	Museum of Grenoble	38000
39	Nelson-Atkins Museum of Art	Kansas City
40	Musée du Louvre	75001
41	National Maritime Museum	London
42	Museum of Fine Arts Boston	Boston
43	Rijksmuseum	Amsterdam
44	Israel Museum	Jerusalem
46	National Gallery of Art	Washington
47	National Gallery	London
48	Mauritshuis Museum	Den Haag
50	The Prado Museum	Madrid
51	The Barnes Foundation	Philadelphia
57	Van Gogh Museum	Amsterdam
60	Los Angeles County Museum of Art	Los Angeles
61	Solomon R. Guggenheim Museum	New York

Who are the top 5 most popular artist? (Popularity is defined based on most no of paintings done by an artist)

```sql
select x.artist_id,
       x.full_name,
       x.No_of_Paintings,
       x.Rankz
from
       (select w.artist_id, count(1) as No_of_Paintings, a.full_name,
       rank() over(order by count(1) desc) as Rankz
       from work w
       join artist a
       on w.artist_id = a.artist_id
       group by w.artist_id) x
limit 5;
```

artist_id	full_name	No_of_Paintings	Rankz
550	Claude Monet	90	1
712	Albert Bierstadt	87	2
559	Albert Marquet	85	3
823	Alice Bailly	60	4
871	Konstantin A. Korovin	60	4

Display the 3 least popular canvas sizes

```sql
select z.size_id, z.label, z.No_of_Paintings, ranking from
    (select cs.size_id, cs.label, count(1) as No_of_Paintings,
    dense_rank() over(order by count(1) asc) as Ranking
    from canvas_size cs
    join product_size ps on cs.size_id = ps.size_id
    join work w on w.work_id = ps.work_id
    group by cs.size_id, cs.label) z
where z.ranking <=3;
```

| size_id	label	No_of_Paintings	ranking
4236	42" x 36"(107 cm x 91 cm)	1	1
2823	28" x 23"(71 cm x 58 cm)	1	1
2418	24" x 18"(61 cm x 46 cm)	1	1
5439	54" x 39"(137 cm x 99 cm)	1	1
5063	50" x 63"(127 cm x 160 cm)	1	1
4434	44" x 34"(112 cm x 86 cm)	1	1
3218	32" x 18"(81 cm x 46 cm)	1	1
3224	32" x 24"(81 cm x 61 cm)	1	1
2937	29" x 37"(74 cm x 94 cm)	1	1
3240	32" x 40"(81 cm x 102 cm)	1	1
3730	37" x 30"(94 cm x 76 cm)	1	1
5137	51" x 37"(130 cm x 94 cm)	1	1
2429	24" x 29"(61 cm x 74 cm)	1	1
3627	36" x 27"(91 cm x 69 cm)	1	1
7171	71" x 71"(180 cm x 180 cm)	1	1
3232	32" x 32"(81 cm x 81 cm)	2	2
1632	16" x 32"(41 cm x 81 cm)	17	3
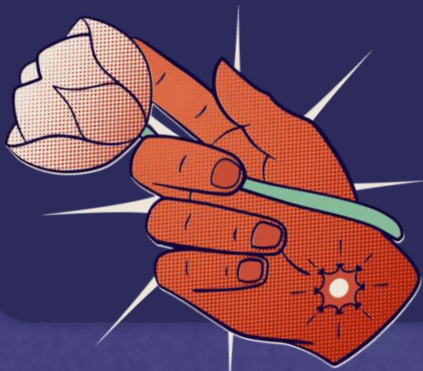
Which museum has the most no of most popular painting style?

```sql
with pop_style as                                    #Step 1 - Find the most popular painting style
        (select style, count(1),
        rank() over (order by count(1) desc) ranking
        from work
        group by style),
    pop_mus as                                       #step 2 - Find the most popular museum
        (select m.museum_id, m.name as museum_name, ps.style, count(1) as No_of_Paintings,
        rank() over (order by count(1) desc) as Rnk
        from work w
        join museum m on w.museum_id = m.museum_id
        join pop_style ps on ps.style = w.style
        where w.museum_id is not null
        and ps.ranking = 1
        group by m.museum_id, m.name, ps.style)

select Museum_Name, Style, No_of_Paintings
from pop_mus
where rnk = 1;
```

Museum_Name	Style	No_of_Paintings
The Metropolitan Museum of Art	Impressionism	75
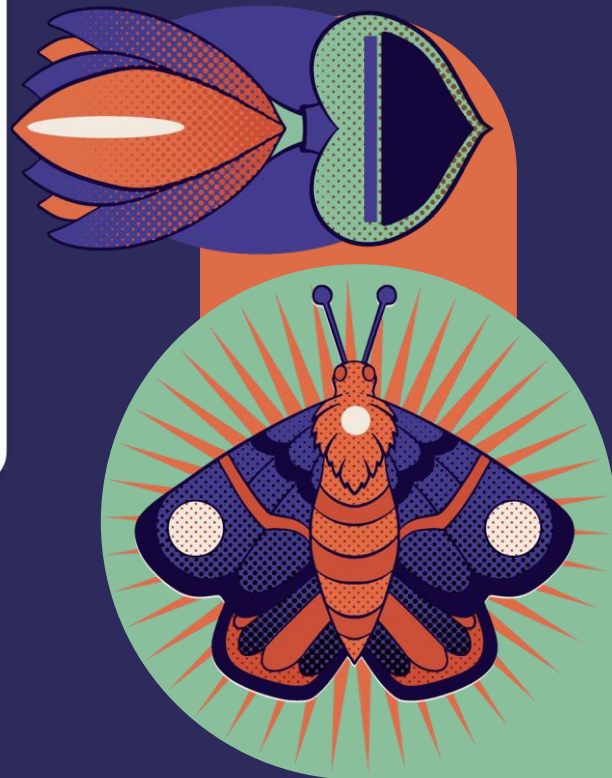
Identify the artists whose paintings are displayed in multiple countries

```sql
with cte as(
        select distinct a.full_name as Artist,
        w.name as Painting, m.name as Museum,
        m.country as Country
        from work w
        join artist a on w.artist_id = a.artist_id
        join museum m on m.museum_id = w.museum_id)

select Artist, count(distinct(country)) as No_of_Countries
from cte
group by artist
order by 2 desc
limit 5;
```

Artist	No_of_Countries
Claude Monet	6
Paul Gauguin	6
Francois Boucher	6
Rembrandt Van Rijn	5
Peter Paul Rubens	5
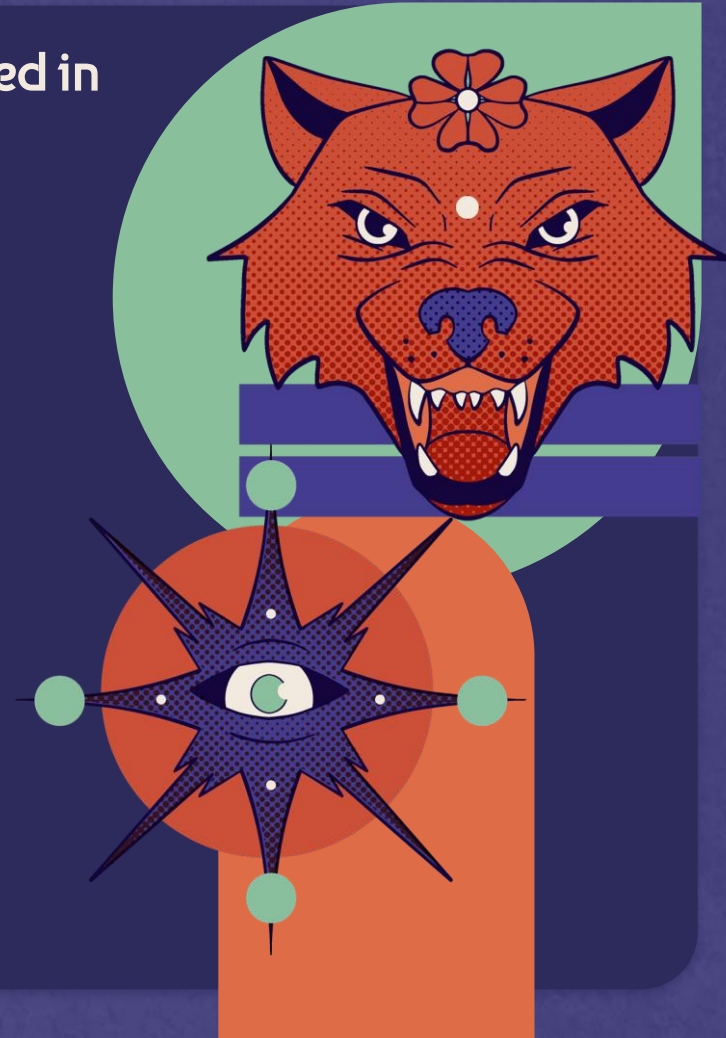
Which artist has the most no of Portraits paintings outside USA?.

```sql
with cte as(select a.artist_id, a.full_name, count(1) as Paintings, a.nationality,
            rank() over(order by count(1) desc) as rnk
        from work w
        join artist a on w.artist_id = a.artist_id
        join museum m on m.museum_id = w.museum_id
        join subject s on s.work_id = w.work_id
        where m.country != 'USA' and s.subject = "Portraits"
        group by a.artist_id)

select full_name as Name, Nationality, Paintings
from cte
where rnk = 1;
```

Name	Nationality	Paintings
Jan Willem Pieneman	Dutch	14

Display the country and the city with most no of museums.

```sql
with country as (

           select country, count(1),
           rank() over(order by count(1) desc) as rnk1
           from museum
           group by country),

    city as (

           select city, count(1),
           rank() over(order by count(1) desc) as rnk2
           from museum
           group by city)

select country.country as Country, group_concat(city.city, ',') as City_Cities
from country
join city   on rnk1 = 1 and rnk2 = 1
group by country;
```
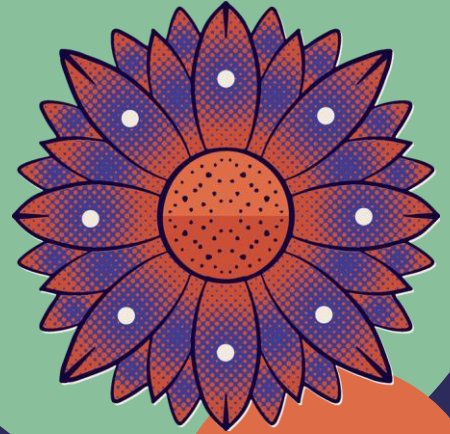
Country	City_Cities
USA	New York,,Paris,,Washington,,London,

Identify the artist and the museum where the most expensive and least expensive painting is placed.

```sql
with painting as (
            select work_id, size_id, sale_price,
            rank() over(order by sale_price desc) as Rnk1,
            rank() over(order by sale_price) as Rnk2
            from product_size)

select a.full_name As Artist, p.sale_price as Price, w.name as Painting,
m.name as Museum, m.city as City, cs.label as Label
from painting p
join work w on w.work_id = p.work_id
join canvas_size cs on cs.size_id = p.size_id
join museum m on m.museum_id = w.museum_id
join artist a on a.artist_id = w.artist_id
where Rnk1 = 1 or Rnk2 = 1;
```

Artist	Price	Painting	Museum	City	Label
Peter Paul Rubens	1115	Fortuna	The Prado Museum	Madrid	48" x 96"(122 cm x 244 cm)
Adélaide Labille-Guiard	10	Portrait of Madame Labille-Guyard and Her Pupils	The Metropolitan Museum of Art	New York	30" Long Edge
Adélaide Labille-Guiard	10	Portrait of Madame Labille-Guyard and Her Pupils	The Metropolitan Museum of Art	New York	30" Long Edge
Adélaide Labille-Guiard	10	Portrait of Madame Labille-Guyard and Her Pupils	The Metropolitan Museum of Art	New York	36" Long Edge
Adélaide Labille-Guiard	10	Portrait of Madame Labille-Guyard and Her Pupils	The Metropolitan Museum of Art	New York	36" Long Edge
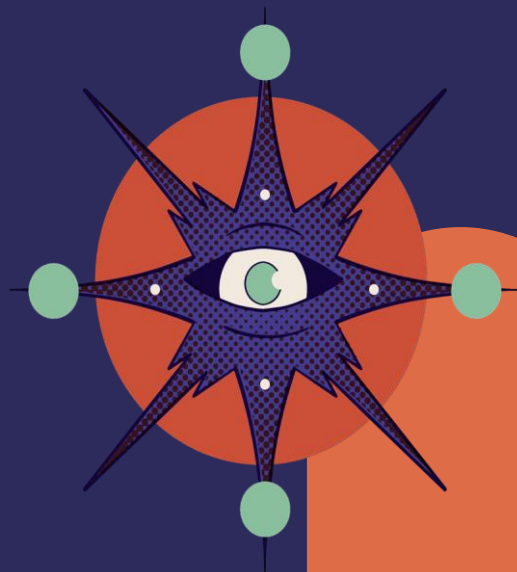
Which country has the 5th highest no of paintings?

```sql
with cte as (select w.museum_id, country, count(1) as No_of_Paintings,
        rank() over (order by count(1) desc) as rnk
        from museum
        join work w on w.museum_id = museum.museum_id
        where w.museum_id not like ''
        group by country)

select Museum_id, Country, No_of_Paintings
from cte
where rnk = 5;
```

Museum_id	Country	No_of_Paintings
41	United Kingdom	131

Which are the 3 most popular and 3 least popular painting styles?

```sql
with cte as (select style, count(1) as Painting_Count,
             rank() over(order by count(1) desc) as rnk,
             count(1) over() as record_cnt
             from work
             where style not like ''
             group by style)

select Style, Painting_Count,
case when rnk <= 3 then 'Most Popular' else 'Least Popular' end as Remarks,
rnk as Ranking
from cte
where rnk <=3 or rnk > (record_cnt - 3);
```

Style	Painting_Count	Remarks	Ranking
Impressionism	1136	Most Popular	1
Baroque	824	Most Popular	2
Realism	686	Most Popular	3
Avant-Garde	75	Least Popular	21
Art Nouveau	65	Least Popular	22
Japanese Art	42	Least Popular	23