-- 22) Which artist has the most no of Portraits paintings outside USA?. Display artist name, no of paintings and the artist nationality.

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

select full_name as artist_name, nationality, no_of_paintings from cte where rnk = 1

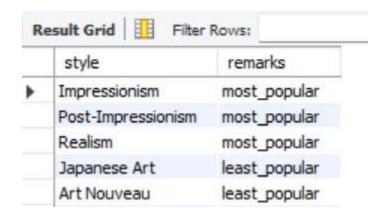


-- 21) Which are the 3 most popular and 3 least popular painting styles?

with cte as(select style, dense_rank() over(order by count(*) desc) as most from work where style is not null group by style),

cte2 as(select style, dense_rank() over(order by count(*) asc) as lowest3 from work where style is not null group by style)

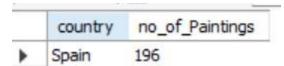
select style,
case when most <=3 then 'most_popular' end as remarks
from cte where most <= 3
union all select style, case when lowest3 <=3 then
'least_popular' end as remarks from cte2 where lowest3 <=
3;



-- 20) Which country has the 5th highest no of paintings?

with cte as(select m.country, count(*) as no_of_Paintings, rank() over(order by count(*) desc) as rnk from work w join museum m on m.museum_id=w.museum_id group by m.country)

select country, no_of_Paintings from cte where rnk = 5



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

-- most expensive with cte as(select work_id,sale_price, dense_rank() over(order by sale price desc) as rnk from product size)

select a.full_name, m.name as museum_name from work w join artist a on a.artist_id = w.artist_id join museum m on m.museum_id = w.museum_id where work_id in (select work_id from cte where rnk = 1);

	full_name	museum_name
•	Peter Paul Rubens	The Prado Museum

-- least expensive with cte as(select
work_id,sale_price, dense_rank() over(order by
sale_price asc) as rnk from product_size)

select a.full_name, m.name as museum_name from work w join artist a on a.artist_id = w.artist_id join museum m on m.museum_id = w.museum_id where work_id in (select work_id from cte where rnk = 1);



-- 18) Display the country and the city with most no of museums.

select country, city, count(museum_id) as total_museum from museum group by country,city;

	country	city	total_museum
•	USA	New York	3
	Russia	Moscow	1
	Australia	Melbourne	1
	Brazil	São Paulo	1
	Russia	2	1

-- 17) Identify the artists whose paintings are displayed in multiple countries

with cte as (

select w.artist_id, full_name, count(distinct country) as cnt from work w

join museum m on m.museum_id = w.museum_id join artist a on a.artist_id = w.artist_id group by w.artist_id, full_name)

select full_name,cnt as countries_displayed from cte where cnt > 1 order by cnt desc;

	full_name	countries_displayed
•	Vincent Van Gogh	8
	Claude Monet	7
	Paul Gauguin	7
	Pierre-Auguste Renoir	6
	Francois Boucher	6

-- 16) Which museum has the most no of most popular painting style?

with cte as(select

style,count(*)

,rank() over(order by count(*) desc) as rnk

from work group by style),

cte2 as(select museum_id, count(*) as total, dense_rank() over(order by count(*) desc) as rn from work where style = (select style from cte where rnk = 1) and museum id is not null group by museum id)

select c.museum_id, name as museum_name, total from cte2 c join museum m on m.museum_id = c.museum id where rn = 1;

			17	
	museum_id	museum_name	total	
•	35	The Metropolitan Museum of Art	244	

-- 15) Which museum is open for the longest during a day. Dispay museum name, state and hours open and which day?

with cte as(select museum_id, str_to_date(open, '%h:%i:%p') as open_time, str_to_date(close, '%h:%i:%p') as close_time, timediff(str_to_date(close, '%h:%i:%p'), str_to_date(open, '%h:%i:%p')) as open_duration, dense_rank() over(order by timediff(str_to_date(close, '%h:%i:%p'), str_to_date(open, '%h:%i:%p')) desc) as rnk from museum_hours)

select m.name, m.state, open_duration from cte
c join museum m on m.museum_id =
c.museum_id where rnk = 1;



-- 14) Display the 3 least popular canvas sizes

with cte as(select size_id, count(*) as cnt, dense_rank() over(order by count(*)) as rnk from product_size group by size_id)

select c.size_id, c2.label as canvas_name from cte c join canvas_size c2 on c2.size_id = c.size_id where rnk <=3;

	size_id	canvas_name
•	3218	32" x 18"(81 cm x 46 cm)
	4434	44" x 34"(112 cm x 86 cm)
	2429	24" x 29"(61 cm x 74 cm)
	3730	37" x 30"(94 cm x 76 cm)
	3627	36" x 27"(91 cm x 69 cm)

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

select artist_id, count(*) as cnt, dense_rank() over(order by count(*) desc) as rnk from work group by artist_id)

select c.artist_id, a.full_name, cnt as total_paintings from cte c join artist a on a.artist_id = c.artist_id where rnk <= 5;

artist_id	full_name	total_painting
500	Pierre-Auguste Renoir	469
550	Claude Monet	378
559	Albert Marquet	233
649	Maurice Utrillo	253
677	Vincent Van Gogh	308

-- 12) Which are the top 5 most popular museum? (Popularity is defined based on most no of paintings in a museum) with cte as(select museum_id,count(*) as cnt, dense_rank() over(order by count(*) desc) as rnk from work where museum_id is not null group by museum_id)

select c.museum_id, m.name from cte c join museum m on m.museum_id = c.museum_id where rnk<=5;

	museum_id	name
•	35	The Metropolitan Museum of Art
	43	Rijksmuseum
	46	National Gallery of Art
	47	National Gallery
	51	The Barnes Foundation

-- 11) How many museums are open every single day?

select count(museum_id) from(select museum_id,count(distinct day) as cnt from museum_hours group by museum_id)a where cnt = 7;

	count(museum_id)
•	17

-- 9) Fetch the top 10 most famous painting subject

with cte as(select s.subject, count(*) as total, dense_rank() over(order by count(*) desc) as rnk from work w join subject s on s.work_id = w.work_id group by s.subject) select subject from cte where rnk < 11;

	subject
١	Portraits
	Abstract/Modern Art
	Nude
	Landscape Art
	Rivers/Lakes

-- 8) Museum Hours table has 1 invalid entry. Identify it and remove it.

with cte as(select museum_id,day, row_number() over(partition by museum_id, day) as rn from museum_hours) delete from cte where rn > 1;

-- 7) Identify the museums with invalid city information in the given dataset select name as musuem_name, city from museum where city regexp '[0-9]' or city is null;

	musuem_name	city
•	The State Hermitage Museum	2
	Museum Folkwang	45128
	Museum of Grenoble	38000
	Musée des Beaux-Arts de Quimper	29000
	Musée du Louvre	75001

-- 6) Delete duplicate records from work, product_size, subject and image_link tables with cte as(select work_id, row_number() over(partition by work_id) as rn from work) delete from cte where rn > 1

-- 5) Which canva size costs the most?

with size_cost as(select size_id,sale_price, dense_rank() over(order by sale_price desc) as rnk from product_size) select a.size_id,label,a.sale_price from size_cost a join canvas_size b on a.size_id = b.size_id where rnk = 1;

select work_id,count(*)
from work group by
work id;

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

-- 4) Identify the paintings whose asking price is less than 50% of its regular price

select * from work;

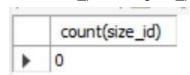
select p.work_id,name from product_size p
join work w on w.work_id = p.work_id

where sale_price < (regular_price/2);

work_id	name
31974	Taking the Census
17351	The Chalon Family in London
17351	The Chalon Family in London
17351	The Chalon Family in London
30947	Ducks Resting in Sunshine

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

select count(size_id) from product_size where sale price >regular price;



-- 2) Are there museuems without any paintings?

select m.museum_id, name from museum m where m.museum_id not in(select distinct museum_id from work);



-- 1) Fetch all the paintings which are not displayed on any museums?

select count(*) from work where museum_id is null;

	T
	count(*)
•	10223