

VIRTUAL ART GALLERY

1. Retrieve the names of all artists along with the number of artworks they have in the gallery, and list them in descending order of the number of artworks.

QUERY : select artists.name as Artist_name, count(artworks.artworkid) as Num_artworks
from artists
left join artworks on artists.artistid = artworks.artistid
group by artists.artistid, artists.name
order by num_artworks desc;

OUTPUT :

	Artist_Name	Num_Artworks
▶	Pablo Picasso	1
	Vincent van Gogh	1
	Leonardo da Vinci	1

2. List the titles of artworks created by artists from 'Spanish' and 'Dutch' nationalities, and order them by the year in ascending order.

QUERY : select artworks.Title from artworks inner join artists on artworks.artistid = artists.artistid
where artists.nationality in ('spanish', 'dutch')
order by artworks.year asc;

OUTPUT :

	Title
▶	Starry Night
	Guernica

3. Find the names of all artists who have artworks in the 'Painting' category, and the number of artworks they have in this category.

QUERY : select artworks.Title from artworks inner join artists on artworks.artistid = artists.artistid
 where artists.nationality in ('spanish', 'dutch')
 order by artworks.year asc;

OUTPUT :

	Title
▶	Starry Night
	Guernica

4. List the names of artworks from the 'Modern Art Masterpieces' exhibition, along with their artists and categories.

QUERY : from artworks join exhibitionartworks on artworks.artworkid = exhibitionartworks.artworkid
 join exhibitions on exhibitionartworks.exhibitionid = exhibitions.exhibitionid
 join artists on artworks.artistid = artists.artistid
 join categories on artworks.categoryid = categories.categoryid
 where exhibitions.title = 'modern art masterpieces';

OUTPUT :

	Artwork_Title	Artist_Name	Category_Name
▶	Starry Night	Vincent van Gogh	Painting
	Mona Lisa	Leonardo da Vinci	Painting
	Guernica	Pablo Picasso	Painting

5. Find the artists who have more than two artworks in the gallery.

QUERY : select artists.name as Artist_name, count(*) as Artwork_count from artists
 join artworks on artists.artistid = artworks.artistid
 group by artists.name
 having count(*) > 2;

OUTPUT :

	Artist_Name	Artwork_Count
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6. Find the titles of artworks that were exhibited in both 'Modern Art Masterpieces' and 'Renaissance Art' exhibitions .

QUERY : select artworks.Title from artworks
join exhibitionartworks on artworks.artworkid = exhibitionartworks.artworkid
join exhibitions on exhibitionartworks.exhibitionid = exhibitions.exhibitionid
where exhibitions.title = 'modern art masterpieces'
and artworks.artworkid in (select artworkid from exhibitionartworks
join exhibitions on exhibitionartworks.exhibitionid = exhibitions.exhibitionid
where exhibitions.title = 'renaissance art');

OUTPUT :

	Title
▶	Mona Lisa

7. Find the total number of artworks in each category.

QUERY : select categories.name as Category_name, count(*) as Artwork_count
from artworks
join categories on artworks.categoryid = categories.categoryid
group by categories.name;

OUTPUT :

	Category_Name	Artwork_Count
▶	Painting	3

8. List artists who have more than 3 artworks in the gallery.

QUERY : select artists.name as Artist_name, count(*) as Artwork_count
from artists
join artworks on artists.artistid = artworks.artistid
group by artists.artistid having count(*) > 3;

OUTPUT :

	Artist_Name	Artwork_Count
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9. Find the artworks created by artists from a specific nationality (e.g., Spanish).

QUERY : select artworks.title as Artwork_title, artists.name as Artist_name
from artworks
join artists on artworks.artistid = artists.artistid
where artists.nationality = 'spanish';

OUTPUT :

	Artwork_Title	Artist_Name
▶	Guernica	Pablo Picasso

10. List exhibitions that feature artwork by both Vincent van Gogh and Leonardo da Vinci.

QUERY : select exhibitions.title as Exhibition_title from exhibitions
join exhibitionartworks on exhibitions.exhibitionid = exhibitionartworks.exhibitionid
join artworks on exhibitionartworks.artworkid = artworks.artworkid
join artists on artworks.artistid = artists.artistid
where artists.name in ('vincent van gogh', 'leonardo da vinci')
group by exhibitions.title
having count(distinct artists.name) = 2;

OUTPUT :

	Exhibition_Title
▶	Modern Art Masterpieces

11. Find all the artworks that have not been included in any exhibition.

QUERY : select artworks.* from artworks
left join exhibitionartworks on artworks.artworkid = exhibitionartworks.artworkid
where exhibitionartworks.artworkid is null;

OUTPUT :

ArtworkID	Title	ArtistID	CategoryID	Year	Description	ImageURL
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12. List artists who have created artworks in all available categories.

QUERY : select artists.artistid, artists.name as artist_name from artists
join artworks on artists.artistid = artworks.artistid
join (select distinct artistid from artworks) as artworksbyartist
on artists.artistid = artworksbyartist.artistid
group by artists.artistid, artists.name
having count(distinct artworks.categoryid) = (select count(*) from categories);

OUTPUT :

	ArtistID	Artist_Name

13. List the total number of artworks in each category.

QUERY : select categories.name as category_name, count(artworks.artworkid) as artwork_count
from categories
left join artworks on categories.categoryid = artworks.categoryid
group by categories.categoryid, categories.name;

OUTPUT :

	Category_Name	Artwork_Count
▶	Painting	3
	Sculpture	0
	Photography	0

14. Find the artists who have more than 2 artworks in the gallery.

QUERY : select artists.artistid, artists.name as artist_name, count(artworks.artworkid) as
artwork_count from artists
join artworks on artists.artistid = artworks.artistid
group by artists.artistid, artists.name
having count(artworks.artworkid) > 2;

OUTPUT :

	ArtistID	Artist_Name	Artwork_Count
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15. List the categories with the average year of artworks they contain, only for categories with more than 1 artwork.

QUERY : select categories.name as category_name, avg(artworks.year) as average_year
from categories
join artworks on categories.categoryid = artworks.categoryid
group by categories.categoryid, categories.name
having count(artworks.artworkid) > 1;

OUTPUT :

	Category_Name	Average_Year
▶	Painting	1776.3333

16. Find the artworks that were exhibited in the 'Modern Art Masterpieces' exhibition.

QUERY : select artworks.title as artwork_title from artworks
join exhibitionartworks on artworks.artworkid = exhibitionartworks.artworkid
join exhibitions on exhibitionartworks.exhibitionid = exhibitions.exhibitionid
where exhibitions.title = 'modern art masterpieces';

OUTPUT :

	Artwork_Title
▶	Starry Night
	Mona Lisa
	Guernica

17. Find the categories where the average year of artworks is greater than the average year of all artworks.

QUERY : select categories.name as category_name, avg(artworks.year) as category_average_year
from categories join artworks on categories.categoryid = artworks.categoryid
group by categories.categoryid, categories.name having
avg(artworks.year) > (select avg(year) from artworks);

OUTPUT :

	Category_Name	Category_Average_Year

18. List the artworks that were not exhibited in any exhibition.

QUERY : select title from artworks where artworkid not in (select artworkid from exhibitionartworks);

OUTPUT :

Title

19. Show artists who have artworks in the same category as “Mona Lisa”.

QUERY : select distinct artists.name as artist_name
from artist join artworks on artists.artistid = artworks.artistid
join categories on artworks.categoryid = categories.categoryid
where categories.name = (select categories.name from artworks
join categories on artworks.categoryid = categories.categoryid
where artworks.title = 'mona lisa');

OUTPUT :

Artist_Name
▶ Pablo Picasso
Vincent van Gogh
Leonardo da Vinci

20. List the names of artists and the number of artworks they have in the gallery.

QUERY : select artists.name as artist_name, count(artworks.artworkid) as artwork_count
from artists left join artworks on artists.artistid = artworks.artistid
group by artists.artistid, artists.name;

OUTPUT :

	Artist_Name	Artwork_Count
▶	Pablo Picasso	1
	Vincent van Gogh	1
	Leonardo da Vinci	1