

NAME : GAYATHRI G

TOPIC : Virtual Art Gallery

TABLE 1: ARTISTS

	ArtistID	Name	Biography	Nationality
▶	1	Vincent van Gogh	Dutch painter, post-impressionist	Dutch
	2	Leonardo da Vinci	Renaissance polymath, painter, inventor	Italian
	3	Frida Kahlo	Mexican painter, feminist icon	Mexican
	4	Pablo Picasso	Spanish painter, co-founder of Cubism	Spanish
	5	Georgia Keeffe	American modernist artist, painter	American
	6	Claude Monet	French impressionist painter, garden enthusiast	French
	7	Andy Warhol	American pop artist, printmaker, filmmaker	American
	8	Salvador Dali	Spanish surrealist painter, eccentric personality	Spanish
	9	Michelangelo Buonarroti	Italian sculptor, painter, architect	Italian
	10	Gustav Klimt	Austrian symbolist painter, prominent member	Austrian
	NULL	NULL	NULL	NULL

TABLE 2: ARTWORKS

	ArtworkID	Title	ArtistID	CategoryID	Year	Description	ImageURL
▶	1	Starry Night	2	1	1889	A famous painting by Vincent van Gogh.	starry_night.jpg
	2	Mona Lisa	3	2	1503	The iconic portrait by Leonardo da Vinci.	mona_lisa.jpg
	3	Guernica	1	3	1937	Pablo Picasso powerful anti-war mural.	guernica.jpg
	4	The Persistence of Memory	8	1	1931	Salvador Dali famous surrealist painting.	persistence_of_memo
	5	The Scream	10	1	1893	Edvard Munchs iconic expressionist painting.	the_scream.jpg
	6	The Birth of Venus	7	4	1486	Sandro Botticelli masterpiece	birth_of_venus.jpg
	7	the girl	9	6	2001	girl with umbrella	umbrella.jpg
	8	mother of child	4	5	1999	mom with two children	mom.jpg
	9	flower garden	5	2	2003	garden with many flowers	flowers.jpg
	10	busy road	6	4	1985	road with many vehicles	road.jpg
	11	hello world	2	2	2023	programming drawing	progm.jpg
	12	devil	2	3	2022	devil and good	dev.jpg
	13	foods	2	4	2024	goog foods	food.jpg
	14	fire	2	5	2020	fire woods	fire.jpg
	15	friends	2	6	2021	frnds for life	frnds.jpg

TABLE 3 : CATEGORIES

	CategoryID	Name
▶	1	Painting
	2	Sculpture
	3	Photography
	4	Drawing
	5	Printmaking
	6	Ceramics
★	NULL	NULL

TABLE 4 : EXHIBITIONARTWORKS

	ExhibitionID	ArtworkID
▶	1	1
	2	1
	3	1
	4	1
	2	2
	4	2
	3	3
★	NULL	NULL

TABLE 5 : EXHIBITIONS

	ExhibitionID	Title	StartDate	EndDate	Description
▶	1	Modern Art Masterpieces	2023-01-01	2023-03-01	A collection of modern art masterpieces.
	2	Renaissance Art	2023-04-01	2023-06-01	A showcase of Renaissance art treasures.
	3	cool arts	2023-09-03	2024-07-11	classy art exhibition
	4	detailed arts	2024-01-09	2024-02-09	arts with more details

Solve the below queries:

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.

```
SELECT Artists.Name, COUNT(Artworks.ArtworkID) AS ArtworkCount  
FROM Artists  
LEFT JOIN Artworks ON Artists.ArtistID = Artworks.ArtistID  
GROUP BY Artists.Name  
ORDER BY ArtworkCount DESC;
```

	Name	ArtworkCount
▶	Leonardo da Vinci	6
	Vincent van Gogh	1
	Frida Kahlo	1
	Pablo Picasso	1
	Georgia Keeffe	1
	Claude Monet	1
	Andy Warhol	1
	Salvador Dali	1
	Michelangelo Buonarroti	1
	Gustav Klimt	1

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

```
SELECT Artworks.Title,Artworks.year  
FROM Artworks  
JOIN Artists  
ON Artworks.ArtistID = Artists.ArtistID
```

WHERE Artists.Nationality IN ('Spanish', 'Dutch')
ORDER BY Artworks.Year ASC;

	Title	year
▶	The Persistence of Memory	1931
	Guernica	1937
	mother of child	1999

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

SELECT Artists.Name, categories.Name, COUNT(Artworks.ArtworkID) AS ArtworkCount
FROM Artists
JOIN Artworks ON Artists.ArtistID = Artworks.ArtistID
JOIN Categories ON Artworks.CategoryID = Categories.CategoryID
WHERE Categories.Name = 'Painting'
GROUP BY Artists.Name;

	Name	Name	ArtworkCount
▶	Leonardo da Vinci	Painting	1
	Salvador Dali	Painting	1
	Gustav Klimt	Painting	1

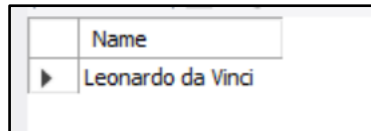
4. List the names of artworks from the 'Modern Art Masterpieces' exhibition, along with their artists and categories.

SELECT Artworks.Title, Artists.Name AS Artist, Categories.Name AS Category
FROM Artworks
JOIN Artists ON Artworks.ArtistID = Artists.ArtistID
JOIN Categories ON Artworks.CategoryID = Categories.CategoryID
JOIN ExhibitionArtworks ON Artworks.ArtworkID = ExhibitionArtworks.ArtworkID
JOIN Exhibitions ON ExhibitionArtworks.ExhibitionID = Exhibitions.ExhibitionID
WHERE Exhibitions.Title = 'Modern Art Masterpieces';

	Title	Artist	Category
▶	Starry Night	Leonardo da Vinci	Painting

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

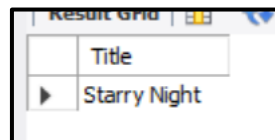
```
SELECT Name
FROM Artists
WHERE ArtistID IN (
    SELECT ArtistID
    FROM Artworks
    GROUP BY ArtistID
    HAVING COUNT(*) > 2
);
```



	Name
▶	Leonardo da Vinci

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

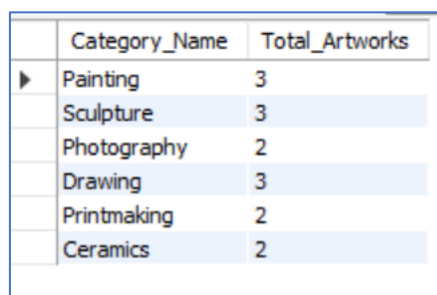
```
SELECT Artworks.Title
FROM Artworks
JOIN ExhibitionArtworks AS Ex1 ON Artworks.ArtworkID = Ex1.ArtworkID
JOIN Exhibitions AS E1 ON Ex1.ExhibitionID = E1.ExhibitionID AND E1.Title = 'Modern Art Masterpieces'
JOIN ExhibitionArtworks AS Ex2 ON Artworks.ArtworkID = Ex2.ArtworkID
JOIN Exhibitions AS E2 ON Ex2.ExhibitionID = E2.ExhibitionID AND E2.Title = 'Renaissance Art';
```



	Title
▶	Starry Night

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

```
SELECT
    Name AS Category_Name,
    (SELECT COUNT(*) FROM Artworks WHERE CategoryID = Categories.CategoryID) AS
    Total_Artworks
FROM Categories;
```



	Category_Name	Total_Artworks
▶	Painting	3
	Sculpture	3
	Photography	2
	Drawing	3
	Printmaking	2
	Ceramics	2

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

```
SELECT Name AS Artist_Name
FROM Artists
WHERE ArtistID IN (
    SELECT ArtistID
    FROM Artworks
    GROUP BY ArtistID
    HAVING COUNT(*) > 3
);
```

	Artist_Name
▶	Leonardo da Vinci

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

```
SELECT Artworks.Title AS Artwork_Title, Artists.Name AS Artist_Name
FROM Artworks
JOIN Artists ON Artworks.ArtistID = Artists.ArtistID
WHERE Artists.Nationality = 'Spanish';
```

	Artwork_Title	Artist_Name
▶	mother of child	Pablo Picasso
	The Persistence of Memory	Salvador Dali

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

```
SELECT E.Title AS Exhibition_Title
FROM Exhibitions E
JOIN ExhibitionArtworks EA ON E.ExhibitionID = EA.ExhibitionID
JOIN Artworks A ON EA.ArtworkID = A.ArtworkID
JOIN Artists AR ON A.ArtistID = AR.ArtistID
WHERE AR.Name IN ('Vincent van Gogh', 'Leonardo da Vinci')
GROUP BY E.ExhibitionID, E.Title;
```

Exhibition_Title
cool arts
Modern Art Masterpieces
Renaissance Art
detailed arts

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

```

SELECT Artworks.Title,artworks.artworkid AS Artwork_Title
FROM Artworks
LEFT JOIN ExhibitionArtworks ON Artworks.ArtworkID = ExhibitionArtworks.ArtworkID
WHERE ExhibitionArtworks.ArtworkID IS NULL;

```

Title	Artwork_Title
The Persistence of Memory	4
The Scream	5
The Birth of Venus	6
the girl	7
mother of child	8
flower garden	9
busy road	10
hello world	11
devil	12
foods	13
fire	14
friends	15

12. List artists who have created artworks in all available categories.

```

SELECT Name AS Artist_Name
FROM Artists
WHERE ArtistID IN (
    SELECT Artist FROM Artworks
    GROUP BY ArtistID
    HAVING COUNT(DISTINCT CategoryID) = (
        SELECT COUNT(*) FROM Categories));

```

Artist_Name
Leonardo da Vinci

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

```
SELECT Categories.Name AS Category_Name, COUNT(Artworks.ArtworkID) AS  
Total_Artworks  
FROM Categories  
LEFT JOIN Artworks ON Categories.CategoryID = Artworks.CategoryID  
GROUP BY Categories.CategoryID, Categories.Name;
```

	Category_Name	Total_Artworks
▶	Painting	3
	Sculpture	3
	Photography	2
	Drawing	3
	Printmaking	2
	Ceramics	2

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

```
SELECT Name AS Artist_Name  
FROM Artists  
WHERE ArtistID IN (  
    SELECT ArtistID  
    FROM Artworks  
    GROUP BY ArtistID  
    HAVING COUNT(*) > 2  
);
```

	Artist_Name
▶	Leonardo da Vinci

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

```
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;
```

	Category_Name	Average_Year
►	Painting	1904.3333
	Sculpture	1843.0000
	Photography	1979.5000
	Drawing	1831.6667
	Printmaking	2009.5000
	Ceramics	2011.0000

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

```
SELECT Artworks.Title AS Artwork_Title,Exhibitions.Title as title
FROM Artworks
JOIN ExhibitionArtworks ON Artworks.ArtworkID = ExhibitionArtworks.ArtworkID
JOIN Exhibitions ON ExhibitionArtworks.ExhibitionID = Exhibitions.ExhibitionID
WHERE Exhibitions.Title = 'Modern Art Masterpieces';
```

	Artwork_Title	title
►	Starry Night	Modern Art Masterpieces

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

```
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);
```

	Category_Name	Category_Average_Year
►	Photography	1979.5000
	Printmaking	2009.5000
	Ceramics	2011.0000

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

```
SELECT Artworks.Title AS Artwork_Title
FROM Artworks
LEFT JOIN ExhibitionArtworks ON Artworks.ArtworkID = ExhibitionArtworks.ArtworkID
WHERE ExhibitionArtworks.ArtworkID IS NULL;
```


Artwork_Title
The Persistence of Memory
The Scream
The Birth of Venus
the girl
mother of child
flower garden
busy road
hello world
devil
foods
fire
friends

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

```

SELECT DISTINCT Artists.Name AS Artist_Name
FROM Artists
JOIN Artworks ON Artists.ArtistID = Artworks.ArtistID
JOIN Categories ON Artworks.CategoryID = Categories.CategoryID
WHERE Categories.CategoryID = (
    SELECT Artworks.CategoryID FROM Artworks
    JOIN Categories
    ON Artworks.CategoryID = Categories.CategoryID
    WHERE Artworks.Title = 'Mona Lisa'
);

```

Artist_Name
Frida Kahlo
Georgia Keffe
Leonardo da Vinci

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

```

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.Name;

```

	Artist_Name	Artwork_Count
▶	Vincent van Gogh	1
	Leonardo da Vinci	6
	Frida Kahlo	1
	Pablo Picasso	1
	Georgia Keeffe	1
	Claude Monet	1
	Andy Warhol	1
	Salvador Dali	1
	Michelangelo Buonarroti	1
	Gustav Klimt	1