**Virtual Art Gallery J513 Mayank Kumar Jain**

**Inserted 2 Records to the Artworks Table**

INSERT INTO Artworks (ArtworkID, Title, ArtistID, CategoryID, Year, Description, ImageURL) VALUES

(4, 'The Last Supper', 3, 1, 1498, 'One of the most famous paintings by Leonardo da Vinci, depicting Jesus and his disciples.', 'the\_last\_supper.jpg'),

(5, 'Vitruvian Man', 3, 1, 1490, 'A world-renowned drawing by Leonardo da Vinci, symbolizing the ideal human proportions.', 'vitruvian\_man.jpg');

**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

a.Name as ArtistName, Count(ar.ArtistID) AS Artworks

FROM

Artists a

JOIN

Artworks ar ON a.ArtistID = ar.ArtistID

GROUP BY

a.Name

ORDER BY

Artworks DESC;

**2.List the titles of artworks created by artists from 'Spanish' and 'Dutch' nationalities, and order**

**them by the year in ascending order.**

=>

SELECT

ar.Title, a.Nationality

FROM

Artists a

JOIN

Artworks AS ar ON a.ArtistID = ar.ArtistID

WHERE

a.Nationality = 'Spanish' OR a.Nationality = 'Dutch';

**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

a.Name, COUNT(ar.ArtistID) AS CountArtworks

FROM

Artists a

JOIN

Artworks AS ar ON a.ArtistID = ar.ArtistID

WHERE

ar.CategoryID = 1

GROUP BY

a.Name;

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

**artists and categories.**

=>

SELECT

ar.Title, a.Name, c.Name

FROM

Artists a

JOIN

Artworks AS ar ON a.ArtistID = ar.ArtistID

JOIN

Categories AS c ON ar.CategoryID = c.CategoryID

WHERE

c.Name = 'Painting';

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

=>

SELECT

a.Name

FROM

Artworks ar

LEFT JOIN

Artists AS a ON a.ArtistID = ar.ArtistID

GROUP BY

a.Name

HAVING

COUNT(ar.ArtistID) > 2;

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

**'Renaissance Art' exhibitions**

=>

SELECT

ar.Title

FROM

Artworks ar

RIGHT JOIN

ExhibitionArtworks AS ea ON ar.ArtworkID = ea.ArtworkID

WHERE

ea.ExhibitionID IN (1,2)

GROUP BY

ar.Title;

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

=>

SELECT

c.CategoryID, COUNT(ar.CategoryID) AS ArtworkCount

FROM

Artworks ar

RIGHT JOIN

Categories AS c ON ar.CategoryID = c.CategoryID

GROUP BY

c.CategoryID;

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

=>

SELECT

a.Name

FROM

Artworks ar

LEFT JOIN

Artists AS a ON a.ArtistID = ar.ArtistID

GROUP BY

a.Name

HAVING

COUNT(ar.ArtistID) > 3;

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

=>

SELECT

ar.Title

FROM

Artworks ar

JOIN

Artists AS a ON a.ArtistID = ar.ArtistID

WHERE

a.Nationality = 'Spanish';

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

=>

SELECT

ex.Title AS Exhibition

FROM

Exhibitions ex

JOIN

ExhibitionArtworks AS ea ON ex.ExhibitionID = ea.ExhibitionID

JOIN

Artworks AS ar ON ea.ArtworkID = ar.ArtworkID

WHERE

ar.ArtistID IN (2,3)

GROUP BY

ex.Title;

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

=>

SELECT

ar.Title

FROM

Artworks ar

LEFT JOIN

ExhibitionArtworks AS ea ON ar.ArtworkID = ea.ArtworkID

WHERE

ea.ExhibitionID IS NULL;

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

=>

SELECT

a.Name

FROM

Artists a

JOIN

Artworks ar ON a.ArtistID = ar.ArtistID

JOIN

Categories c ON ar.CategoryID = c.CategoryID

GROUP BY

a.Name

HAVING

COUNT(DISTINCT c.CategoryID) = (SELECT COUNT(\*) FROM Categories);

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

=>

SELECT

c.CategoryID , COUNT(ar.ArtworkID) AS ArtworkCOUNT

FROM

Artworks ar

RIGHT JOIN

Categories AS c ON ar.CategoryID = c.CategoryID

GROUP BY

c.CategoryID;

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

=>

SELECT

a.Name

FROM

Artworks ar

LEFT JOIN

Artists AS a ON a.ArtistID = ar.ArtistID

GROUP BY

a.Name

HAVING

COUNT(ar.ArtistID) > 2;

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

=>

SELECT

c.CategoryID, AVG(ar.Year)

FROM

Artworks ar

RIGHT JOIN

Categories AS c ON ar.CategoryID = c.CategoryID

GROUP BY

c.CategoryID

HAVING

COUNT(ar.ArtworkID) > 1;

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

=>

SELECT

ar.Title

FROM

Artworks ar

JOIN

ExhibitionArtworks AS ea ON ar.ArtworkID = ea.ArtworkID

JOIN

Exhibitions AS ex ON ex.ExhibitionID = ea.ExhibitionID

WHERE

ex.Title = 'Modern Art Masterpieces';

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

=>

SELECT

c.CategoryID

FROM

Categories c

LEFT JOIN

Artworks AS ar ON ar.CategoryID = c.CategoryID

GROUP BY

c.CategoryID

HAVING

AVG(ar.Year) > (SELECT AVG(Year) FROM Artworks);

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

=>

SELECT

ar.Title

FROM

Artworks ar

LEFT JOIN

ExhibitionArtworks AS ea ON ar.ArtworkID = ea.ArtworkID

WHERE

ea.ExhibitionID IS NULL;

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

=>

SELECT DISTINCT

a.Name

FROM

Artists a

JOIN

Artworks ar ON a.ArtistID = ar.ArtistID

WHERE

ar.CategoryID = (SELECT CategoryID FROM Artworks WHERE Title = 'Mona Lisa');

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

=>

SELECT

a.Name, COUNT(ar.ArtworkID)

FROM

Artists a

JOIN

Artworks AS ar ON ar.ArtistID = a.ArtistID

GROUP BY

a.Name;