

## CODING CHALLENGE – 5

### Virtual Art Gallery

NAME – Yash Pandey

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 TotalArtworks
from Artists left join Artworks
on Artists.ArtistID = Artworks.ArtistID
group by Artists.Name
order by TotalArtworks desc;
```

	Name	TotalArtworks
1	Leonardo da Vinci	1
2	Pablo Picasso	1
3	Vincent van Gogh	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 as year
from Artworks join Artists
on Artists.ArtistID = Artworks.ArtistID
where Artists.Nationality in ('Spanish' , 'Dutch')
order by year;
```

	Title	year
1	Starry Night	1889
2	Guernica	1937

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(aw.ArtworkID) as TotalArtworks
from Artists a join Artworks aw on a.ArtistID = aw.ArtistID
JOIN Categories c ON aw.CategoryID = c.CategoryID
WHERE c.Name = 'Painting'
GROUP BY a.Name;
```

	Name	TotalArtworks
1	Leonardo da Vinci	1
2	Pablo Picasso	1
3	Vincent van Gogh	1

/\*

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

\*/

```
select aw.Title, a.Name, c.Name
from Artworks aw
join Artists a on aw.ArtistID = a.ArtistID
join Categories c on aw.CategoryID = c.CategoryID
join ExhibitionArtworks ea on aw.ArtworkID = ea.ArtworkID
join Exhibitions e ON ea.ExhibitionID = e.ExhibitionID
where e.Title = 'Modern Art Masterpieces';
```

	Title	Name	Name
1	Starry Night	Vincent van Gogh	Painting
2	Mona Lisa	Leonardo da Vinci	Painting
3	Guernica	Pablo Picasso	Painting

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

\*/

```
select a.Name, count(aw.ArtworkID) as TotalArtworks
from Artists a
join Artworks aw on a.ArtistID=aw.ArtistID
group by (a.Name)
having count(aw.ArtworkID) > 2;
```

Name	TotalArtworks
------	---------------

/\*

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

\*/

```

select aw.Title
from Artworks aw
where aw.ArtworkID in
(
    select ea.ArtworkID
    from ExhibitionArtworks ea
    join Exhibitions e on ea.ExhibitionID = e.ExhibitionID
    where e.Title = 'Modern Art Masterpieces'
)
and aw.ArtworkID in
(
    select ea.ArtworkID
    from ExhibitionArtworks ea
    join Exhibitions e on ea.ExhibitionID = e.ExhibitionID
    where e.Title = 'Renaissance Art'
);

```

	Title
1	Mona Lisa

7. Find the total number of artworks in each category

```

*/
select c.Name as CategoryName, count(aw.ArtworkID) as TotalArtworks
from Categories c
left join Artworks aw on c.CategoryID = aw.CategoryID
group by (c.Name);

```

	CategoryName	TotalArtworks
1	Painting	3
2	Photography	0
3	Sculpture	0

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

```

select a.Name, count(aw.ArtworkID) as TotalArtworks
from Artists a
join Artworks aw on a.ArtistID=aw.ArtistID
group by (a.Name)
having count(aw.ArtworkID) > 3;

```

Name	TotalArtworks
------	---------------

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

```
select a.Name, aw.Title
from Artists a
join Artworks aw on a.ArtistID = aw.ArtistID
where a.Nationality = 'Spanish';
```

	Name	Title
1	Pablo Picasso	Guernica

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

```
select e.Title as ExhibitionName
from Exhibitions e
where e.ExhibitionID in
(
    select ew.ExhibitionID
    from ExhibitionArtworks ew
    join Artworks aw on ew.ArtworkID = aw.ArtworkID
    join Artists a on aw.ArtistID = a.ArtistID
    where a.Name = 'Vincent van Gogh'
)
and e.ExhibitionID in
(
    select ew.ExhibitionID
    from ExhibitionArtworks ew
    join Artworks aw on ew.ArtworkID = aw.ArtworkID
    join Artists a on aw.ArtistID = a.ArtistID
    where a.Name = 'Leonardo da Vinci'
);
```

	ExhibitionName
1	Modern Art Masterpieces

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

```
select Title
from Artworks
where ArtworkID not in
(
    select ArtworkID from ExhibitionArtworks
);
```

Title
-------

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

```
SELECT
    a.Name AS ArtistName
FROM
    Artists a
JOIN
    Artworks aw ON a.ArtistID = aw.ArtistID
JOIN
    Categories c ON aw.CategoryID = c.CategoryID
GROUP BY
    a.ArtistID, a.Name
HAVING
    COUNT(DISTINCT aw.CategoryID) = (SELECT COUNT(*) FROM Categories);
```

ArtistName
------------

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

```
Select c.Name , count(aw.ArtworkID)
from Categories c
left join Artworks aw on c.CategoryID=aw.CategoryID
group by (c.Name);
```

	Name	(No column name)
1	Painting	3
2	Photography	0
3	Sculpture	0

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

```
select a.Name, count(aw.ArtworkID) as TotalArtworks
from Artists a
join Artworks aw on a.ArtistID=aw.ArtistID
group by (a.Name)
having count(aw.ArtworkID) > 2;
```

Name	TotalArtworks
------	---------------

```

/*
15. List the categories with the average year of artworks they contain,
only for categories with morethan 1 artwork.
*/
select c.Name categoryName, avg(aw.Year)
from Categories c
join Artworks aw on c.CategoryID = aw.CategoryID
group by(c.Name)
having count(c.Name)>1;

```

	categoryName	(No column name)
1	Painting	1776

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

```

select aw.Title
from Artworks aw
join ExhibitionArtworks ea on aw.ArtworkID = ea.ArtworkID
join Exhibitions e on e.ExhibitionID = ea.ExhibitionID
where e.Title = 'Modern Art Masterpieces';

```

	Title
1	Stary Night
2	Mona Lisa
3	Guemica

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

```

select c.Name
from Categories c
join Artworks aw on c.CategoryID = aw.CategoryID
group by (c.Name)
having avg( aw.Year ) > (select avg(Year) from Artworks);

```

Name
------

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

```
select Title as Name
from Artworks
where ArtworkID not in (
select ArtworkID from ExhibitionArtworks
);
```

	Name

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

```
select a.Name ArtistName
from Artists a
join Artworks aw on a.ArtistID = aw.ArtistID
where aw.CategoryID = ( select CategoryID from Artworks
                        where Title = 'Mona Lisa');
```

	ArtistName
1	Vincent van Gogh
2	Leonardo da Vinci
3	Pablo Picasso

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

```
select a.Name ArtistName, count(aw.ArtworkID)
from Artists a
join Artworks aw on a.ArtistID=aw.ArtistID
group by(a.Name);
```

	ArtistName	(No column name)
1	Leonardo da Vinci	1
2	Pablo Picasso	1
3	Vincent van Gogh	1