**Project Paint Data**

# Step 1: Create Database Paint

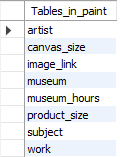
create database Paint;

# Step 2: Use Database

use Paint;

# Step 3: Show Tables

show tables;



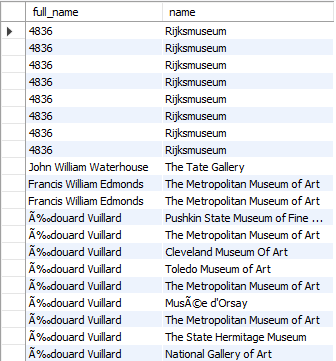
# Step 4: Joining Table

**Q.1) Retrieve the full name of artists along with the names of the museums where their works are displayed**.

select artist.full\_name, museum.name

from artist

join work on artist.artist\_id = work.artist\_id

join museum on work.museum\_id = museum.museum\_id;

# Step 5: Group By and Count

**Q.2) How many works does each artist have in the database? Display the artist's full name along with the count of their works, ordered by the count in descending order.**

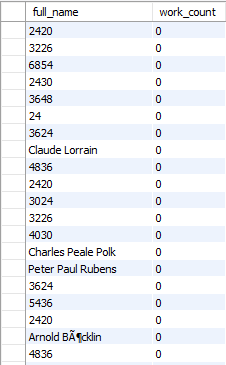
select artist.full\_name, count(work.work\_id) as work\_count

from artist

left join work on artist.artist\_id = work.artist\_id

group by artist.artist\_id, artist.full\_name

order by work\_count desc;



# Step 6: Order By and Limit

**Q.3) List the top 5 museums with the highest number of works displayed in the database, along with their respective counts.**

select museum.name, count(work.work\_id) as work\_count

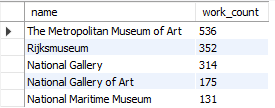
from museum

left join work on museum.museum\_id = work.museum\_id

group by museum.museum\_id, museum.name

order by work\_count desc

limit 5



# Step 7: Join, Order By and Limit

**Q.4) Display the names and styles of the works along with the corresponding museum names, ordered by the museum name in ascending order. Limit the results to 10.**

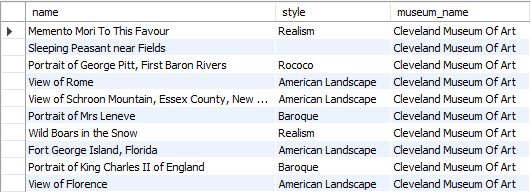
select work.name, work.style, museum.name as museum\_name

from work

join museum on work.museum\_id = museum.museum\_id

order by museum.name asc

limit 10;



# Step 8: Join, Group By and Sum

**Q.5) Show the total sale price for each artist's works. Display the artist's full name along with the total sale price, ordered by the total sale price in descending order.**

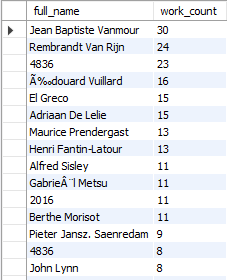
select artist.full\_name, count(work.work\_id) as work\_count

from artist

left join work on artist.artist\_id = work.artist\_id

group by artist.artist\_id, artist.full\_name

order by work\_count desc;



# Step 9: Join, Group By and Having

Q**.6) List artists who have more than 3 works in the database, along with the count of their works.**

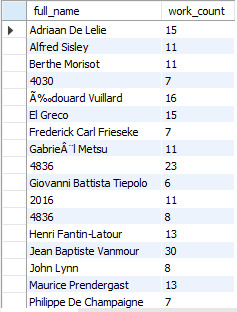
select max(artist.full\_name) AS full\_name, count(work.work\_id) as work\_count

from artist

join work on artist.artist\_id = work.artist\_id

group by artist.artist\_id

having work\_count > 3;



# Step 10: Join, Where and Order By

**Q.7) Retrieve the names of works and their corresponding artists' full names for works that have a sale price smaller than their regular price.**

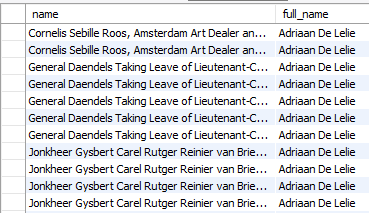
Select work.name, artist.full\_name

from work

join artist on work.artist\_id = artist.artist\_id

join product\_size on work.work\_id = product\_size.work\_id

where product\_size.sale\_price < product\_size.regular\_price;



# Step 11: Join, Group and Average

**Q.8) Calculate the average height and width of the artworks in the database. Display the average height and width.**

select avg(canvas\_size.height) as avg\_height,

avg(canvas\_size.width) as avg\_width

from canvas\_size;



# Step 12: Join, Group By and Max

**Q.9) Find the maximum sale price among all the works in each museum. Display the museum name along with the maximum sale price.**

select m.name, ps.max\_sale\_price

from museum m

join (

select work.museum\_id, max(product\_size.sale\_price) as max\_sale\_price

from work

join product\_size on work.work\_id = product\_size.work\_id

group by work.museum\_id

) ps on m.museum\_id = ps.museum\_id;



# Step 13: Join, Group By and Concatenate

**Q.10) Concatenate the first name and last name of artists along with their nationality, separated by a comma. Display the concatenated string along with the count of works by each artist, ordered by the count in descending order.**

SELECT CONCAT(artist.first\_name, ' ', artist.last\_name, ', ', artist.nationality) AS artist\_info, COUNT(work.work\_id) AS work\_count

FROM artist

JOIN work ON artist.artist\_id = work.artist\_id

GROUP BY artist.artist\_id, artist.first\_name, artist.last\_name, artist.nationality

ORDER BY work\_count DESC;

