

## DATA ANALYST

### SQL PROJECT2

-- create database

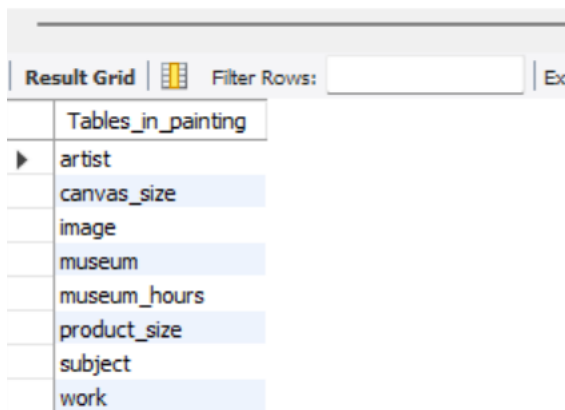
```
1      -- create database
2 •    create database Painting;
```

-- use database

```
4      + use database
5 •    use Painting;
```

-- show tables

```
7      -- show tables
8 •    show tables;
9
```



The screenshot shows a SQL client window with a 'Result Grid' tab. Below the tab, there is a 'Filter Rows' input field and an 'Export' button. The main area displays a list of tables in the 'painting' database, with 'Tables\_in\_painting' as the header. The tables listed are: artist, canvas\_size, image, museum, museum\_hours, product\_size, subject, and work. Each table name is preceded by a small icon (a triangle for 'artist' and a circle for the others) and is highlighted with a light blue background.

Tables_in_painting
▶ artist
○ canvas_size
○ image
○ museum
○ museum_hours
○ product_size
○ subject
○ work

```
8 •    select * from artist;
9 •    select * from canvas_size;
10 •   select * from image;
11 •   select * from museum;
12 •   select * from museum_hours;
13 •   select * from product_size;
14 •   select * from subject;
15 •   select * from work;
```

-- Joining Tables:

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

```

19 • Select artist.full_name AS artist_fullname, museum.name AS museum_name
20   from artist
21   join work ON artist.artist_id = work.artist_id
22   join museum ON work.museum_id = museum.museum_id;

```

artist_fullname	museum_name
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	The Barnes Foundation
Pierre-Auguste Renoir	Musée d'Orsay
Pierre-Auguste Renoir	Philadelphia Museum of Art
Pierre-Auguste Renoir	Philadelphia Museum of Art

-- 2. Group By and Count:

-- 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.

```

28 • Select artist.full_name, COUNT(work.work_id) AS work_count
29   FROM artist
30   join work ON artist.artist_id = work.artist_id
31   Group by artist.full_name
32   Order by work_count desc;

```

full_name	work_count
Peter Paul Rubens	56
Claude Monet	45
Jean Baptiste Vanmour	30
Francesco Guardi	28
Jan Steen	28
Anton Raphael Mengs	27
Francisco De Goya	27
John Singleton Copley	27

-- 3. Order By and Limit:

-- List the top 5 museums with the highest number of works displayed in the database, along with their respective counts.

```

36 • select museum.name as museum_name, count(work.work_id) as work_count
37   from museum
38   join work on museum.museum_id = work.museum_id
39   group by museum.name
40   order by work_count DESC
41   LIMIT 5;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
	museum_name	work_count		
▶	The Metropolitan Museum of Art	536		
	Rijksmuseum	352		
	National Gallery	314		
	National Gallery of Art	175		
	National Maritime Museum	131		

-- 4. Join, Order By, and Limit:

-- 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.

```

45 • select work.name as work_name, work.style as work_style, museum.name as museum_name
46   from work
47   join museum on museum.museum_id = work.museum_id
48   group by work.name, work.style, museum.name
49   order by museum.name asc
50   limit 10;

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
	work_name	work_style	museum_name	
	Fort George Island, Florida	American Landscape	Cleveland Museum Of Art	
	Portrait of King Charles II of England	Baroque	Cleveland Museum Of Art	
	Portrait of Charles I	Baroque	Cleveland Museum Of Art	
	Portrait of Mrs Leneve	Baroque	Cleveland Museum Of Art	
	Portrait of Mary Sicard David		Cleveland Museum Of Art	
	Lieutenant General Duncan Campbell	Romanticism	Cleveland Museum Of Art	
	A Calling (Une Vocation)	Classicism	Cleveland Museum Of Art	
	Portrait of Jean Terford David		Cleveland Museum Of Art	
	Wild Boars in the Snow	Realism	Cleveland Museum Of Art	

-- 5. Join, Group By, and Sum:

-- 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.

```

3 • select artist.full_name, sum(product_size.sale_price) as sumsaleprice
3   from product_size, artist
1   join work on artist.artist_id = work.artist_id
2   group by artist.full_name
3   order by sumsaleprice desc;
4
5

```

full_name	sumsaleprice
Peter Paul Rubens	1423520
Arnold Böcklin	686340
Jean Auguste Ingres	533820
Jean-Baptiste-Siméon Chardin	457560
Johannes Vermeer	457560
Jean-Baptiste Greuze	381300

-- 6. Join, Group By, and Having:

-- List artists who have more than 3 works in the database, along with the count of their works.

```

64 • select artist.full_name as artist_name, count(*) as work_count
65   from artist
66   join work on artist.artist_id = work.artist_id
67   group by artist.full_name
68   having count(*) >3;

```

artist_name	work_count
Abraham Mignon	6
Adriaan De Lelie	15
Aelbert Cuyp	21
Albert André	5
Albert Bierstadt	11
Albrecht Durer	10
Alexandre Cabanel	4
Alfred Henry Maurer	4
Alfred Sisley	11

-- 7. Join, Where, and Order By:-- Retrieve the names of works and their corresponding artists' full names for works that have a sale price smaller than their regular price.

```

76 • select work.name as work_name, artist.full_name as artist_fullname, product_size.sale_price
77 from work
78 join artist ON work.artist_id = artist.artist_id
79 join product_size ON work.work_id = product_size.work_id
80 where product_size.sale_price < product_size.regular_price;

```

Result Grid			
Filter Rows:			
Export:			
Wrap Cell Content:			
Fetch rows:			
work_name	artist_fullname	sale_price	
Horses at the Porch	Albrecht Adam	305	
Horses at the Porch	Albrecht Adam	325	
Horses at the Porch	Albrecht Adam	375	
Horses at the Porch	Albrecht Adam	405	
Horses at the Porch	Albrecht Adam	495	
Horses at the Porch	Albrecht Adam	675	
Horses at the Porch	Albrecht Adam	805	
Madame de Genlis	AdÃ©laÃ¯de Labille-Guiard	305	
Madame de Genlis	AdÃ©laÃ¯de Labille-Guiard	325	
Madame de Genlis	AdÃ©laÃ¯de Labille-Guiard	375	

-- 8. Join, Group By, and Average:

-- Calculate the average height and width of the artworks in the database. Display the average height and width.

```

81 • select avg(height) as avgheight,
82        avg(width) as avgwidth
83 from canvas_size;

```

Result Grid			
Filter Rows:			
Export:			
Wrap Cell Content:			
Fetch rows:			
avgheight	avgwidth		
35.625	38.0300		

-- Join, Group By, and Max:

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

```

91 • select museum.name, product_size.max_sale_price
92   from museum
93   join
94   (select work.museum_id, max(product_size.sale_price) AS max_sale_price
95     from work
96     join product_size on work.work_id = product_size.work_id
97     group by work.museum_id)
98   product_size on museum.museum_id = product_size.museum_id;

```

	name	max_sale_price
▶	The Museum of Modern Art	815
	Pushkin State Museum of Fine Arts	905
	National Gallery of Victoria	745
	SÃ£o Paulo Museum of Art	745
	The State Hermitage Museum	1005
	The Metropolitan Museum of Art	1005
	Museum Folkwang	785
	Museum of Grenoble	495

-- Join, Group By, and Concatenate:

-- 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.

```

100 • select concat(artist.first_name, ' ', artist.last_name, ', ', artist.nationality) as artist, count(*) as work_count
101   from artist
102   join work on artist.artist_id = work.artist_id
103   group by artist
104   order by work_count desc;

```

	artist	work_count
▶	Peter Rubens, Flemish	56
	Claude Monet, French	45
	Jean Vanmour, Flemish	30
	Francesco Guardi, Italian	28
	Jan Steen, Dutch	28
	Anton Mengs, German	27
	Francisco De Goya, Spanish	27
	John Conlev, American	27