

DATA ANALYST

SQL PROJECT2

-- create database

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

-- use database

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

-- show tables

```
8 •    show tables;

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;
```

result Grid		Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
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;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
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;

```

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.

```

9 • select artist.full_name, sum(product_size.sale_price) as sumsaleprice
9     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;

```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
artist_name	work_count			
Abraham Mignon	6			
Adriaan De Lelie	15			
Aelbert Cuyp	21			
Albert Andr��	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	Ad�������� de Labille-Guiard	305					
Madame de Genlis	Ad�������� de Labille-Guiard	325					
Madame de Genlis	Ad�������� 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:
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;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [A](#)

	name	max_sale_price
▶	The Museum of Modern Art	815
	Pushkin State Museum of Fine Arts	905
	National Gallery of Victoria	745
	SÃo 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;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [A](#) | Fetch rows: [↕](#)

	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 Conley, American	27