## **Museum Paintings**

```
import pandas as pd
from sqlalchemy import create_engine

conn_string = 'mysql://root:1122@localhost/paintings'
db = create_engine(conn_string)
conn = db.connect()

files = ['artist', 'canvas_size', 'image_link', 'museum', 'museum_hours', 'product_size', 'subject', 'work']
for file in files:
    df= pd.read_csv(f"C:/Users/zeus/Desktop/Git Repositories/Museum_Painting/{file}.csv")
    df.to_sql(file, con=conn, if_exists='replace', index = False)
```

## Here we will be solving 22 Question of SQL ranges from beginner level to Expert level:

1. Fetch all the paintings which are not displayed on any museums?



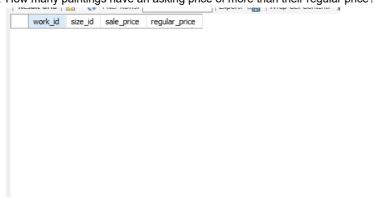
Here we are getting 1000 rows which means that there are 1000 paintings that are not displayed any museum.

2. Are there museums without any paintings?



The Output window throws an empty space which means that there is not a single museum without paintings. It means that all the Museum have atleast of one painting.

3. How many paintings have an asking price of more than their regular price?



Here we are again having a blank output which means that here is not a single painting that have asking price more than their regular price.

4. Identify the paintings whose asking price is less than 50% of its regular price

	Paintings	work_id
•	Portrait of Madame Labille-Guyard and Her Pupils	31780
	Disrobing of Christ (Espolio)	198417
	Taking the Census	31974
	The Chalon Family in London	17351
	Ducks Resting in Sunshine	30947
	Portrait of Mr. and Mrs. Thomas Mifflin (Sarah M	23710
	Passion Flowers and Hummingbirds	20084
	A Street in Paris in May 1871	133971
	Eucharist	28259
	Extreme Unction	28261
	Marriage	28273
	Saint John Baptizing in the River Jordan	28279
	The Adoration of the Shepherds	28287
	The Companions of Rinaldo	28295
	The Finding of Moses	28297
	The Nurture of Bacchus	169367
	Rest on the Flight Into Egypt	190824
	I and the second	

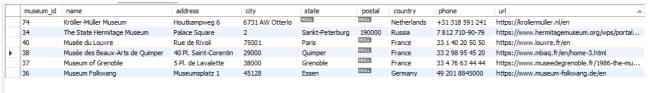
There are 34 of such paintings that have the asking price less than the 50% of its regular price.

5. Which canva size costs the most?

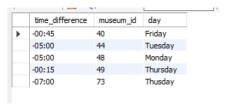


so the canvas with the size 48" x 96"(122cm x 244cm) is the most expensive one.

- 6. Delete duplicate records from work, product\_size, subject and image\_link tables
- 7. Identify the museums with invalid city information in the given dataset



8. Museum\_Hours table has 1 invalid entry. Identify it and remove it.



These are the museums which are having invalid opening and closing time.

9. Fetch the top 10 most famous painting subject

		subject	no_of_paintings	ranking
	•	Portraits	1070	1
ı		Abstract/Modern Art	575	2
ı		Nude	525	3
l		Landscape Art	495	4
l		Rivers/Lakes	480	5
ı		Flowers	457	6
l		Still-Life	395	7
l		Seascapes	326	8
1		Marine Art/Maritime	268	9
1		Horses	265	10

10. Identify the museums which are open on both Sunday and Monday. Display museum name, city.

	Museum_name
•	The Museum of Modern Art
	Pushkin State Museum of Fine Arts
	National Gallery of Victoria
	The Metropolitan Museum of Art
	Museum of Grenoble
	Nelson-Atkins Museum of Art
	Musée du Louvre
	National Maritime Museum
	Museum of Fine Arts Boston
	Rijksmuseum
	Israel Museum
	National Gallery of Art
	National Gallery
	The Prado Museum
	The Barnes Foundation
	Van Gogh Museum
	Los Angeles County Museum of Art

There are 27 of these museums that are open both sunday and monday.

11. How many museums are open every single day?

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	museum_id	Open_days
•	30	7
	31	7
	32	7
	35	7
	41	7
	43	7
	47	7
	50	7
	57	7
	61	7
	62	7
	66	7
	80	7
	82	7
	84	7
	86	7

There are 16 museums which are open for all 7 days of the week

12. Which are the top 5 most popular museum? (Popularity is defined based on most no of paintings in a museum)

	Museum_name	City	Country	no_of_paintings
•	The Metropolitan Museum of Art	New York	USA	939
	Rijksmuseum	Amsterdam	Netherlands	452
	National Gallery of Art	Washington	USA	375
	National Gallery	London	UK	423
	The Barnes Foundation	Philadelphia	USA	350

13. Who are the top 5 most popular artist? (Popularity is defined based on most no of paintings done by an artist)

	rnk	full_name	no_of_paintings
•	1	Pierre-Auguste Renoir	469
	2	Claude Monet	378
	3	Vincent Van Gogh	308
	4	Maurice Utrillo	253
	5	Albert Marquet	233

14. Display the 3 least popular canva sizes

	label	ranking	Number of Paintings
•	37" x 30"(94 cm x 76 cm)	1	1
	32" x 18"(81 cm x 46 cm)	1	1
	46" x 35"(11,7 cm x 89 cm)	1	_1
	36" x 27"(91 46" x 35"(117 c	m x 89 cm	)
	44" x 34"(112 cm x 86 cm)	1	1
	24" x 29"(61 cm x 74 cm)	1	1
	45" x 32"(114 cm x 81 cm)	1	1
	32" x 46"(81 cm x 117 cm)	1	1
	32" x 32"(81 cm x 81 cm)	2	2
	71" x 71"(180 cm x 180 cm)	2	2
	56" Long Edge	3	26

15. Which museum is open for the longest during a day. Dispay museum name, state and hours open and which day?

	Museum Name	Open_time	city
•	Israel Museum	08:00	Jerusalem
	Indianapolis Museum of Art	07:00	Indianapolis
	Kimbell Art Museum	07:00	Fort Worth
	Norton Simon Museum	07:00	Pasadena
	Chrysler Museum of Art	07:00	Norfolk

16. Which museum has the most no of most popular painting style?

	museum_name	style	no_of_paintings
•	The Metropolitan Museum of Art	Impressionism	244

17. Identify the artists whose paintings are displayed in multiple countries

	Artist_Name	Number of countries
•	Pierre-Auguste Renoir	260
	Claude Monet	190
	Vincent Van Gogh	142
	Paul Cézanne	124
	Camille Pissarro	93
	Rembrandt Van Rijn	93
	Francisco De Goya	91
	Jean-Baptiste-Camille Corot	82

- 18. Display the country and the city with most no of museums. Output 2 seperate columns to mention the city and country. If there are multiple value, seperate them with comma.
- 19. Identify the artist and the museum where the most expensive and least expensive painting is placed. Display the artist name, sale\_price, painting name, museum name, museum city and canvas label

	Artist Name	Painting Name	Painting Price	Museum Name	Museum City	Canvas Dimension
•	Peter Paul Rubens	Fortuna	1115	The Prado Museum	Madrid	48" x 96"(122 cm x 244 cm)
	Adélaïde Labille-Guiard	Portrait of Madame Labille-Guyard and Her Pupils	10	The Metropolitan Museum of Art	New York	30" Long Edge
	Adélaïde Labille-Guiard	Portrait of Madame Labille-Guyard and Her Pupils	10	The Metropolitan Museum of Art	New York	30" Long Edge
	Adélaïde Labille-Guiard	Portrait of Madame Labille-Guyard and Her Pupils	10	The Metropolitan Museum of Art	New York	36" Long Edge
	Adélaïde Labille-Guiard	Portrait of Madame Labille-Guyard and Her Pupils	10	The Metropolitan Museum of Art	New York	36" Long Edge

20. Which country has the 5th highest no of paintings?



21. Which are the 3 most popular and 3 least popular painting styles?

	style	remarks	
•	Impressionism	Most Popular	
	Post-Impressionism	Most Popular	
	Realism	Most Popular	
	Avant-Garde	Least Popular	
	Art Nouveau	Least Popular	
	Japanese Art	Least Popular	

22. Which artist has the most no of Portraits paintings outside USA?. Display artist name, no of paintings and the artist nationality

	Artist Name	Nationality	Number of Painitings
	Jan Willem Pieneman	Dutch	14
	Vincent Van Gogh	Dutch	14
	Adriaan De Lelie	Dutch	13
	Bartholomeus Van Der Helst	Dutch	12
	Frans Hals	Dutch	11
	Anton Raphael Mengs	German	11
	Jan Adam Kruseman	Dutch	10
	Rembrandt Van Rijn	Dutch	9
•	Francisco De Goya	Spanish	9
	Lemuel Francis Abbott	English	6
	Élisabeth Vigée-LeBrun	French	6

Rough

select from work;

select from subject;

with Image\_CTE as(

 $select\ work\_id,\ url,\ thumbnail\_small\_url,\ thumbnail\_large\_url,$ 

row\_number() over(partition by work\_id, url, thumbnail\_small\_url, thumbnail\_large\_url

order by work\_id) as RowNumber

from image\_link

```
)
delete from Image_CTE
where RowNumber > 1;
WITH Image_CTE AS (
SELECT
work_id,
url,
thumbnail\_small\_url,
thumbnail_large_url,
ROW_NUMBER() OVER (PARTITION BY work_id, url, thumbnail_small_url, thumbnail_large_url ORDER BY work_id) AS RowNumber
FROM
image_link
)
DELETE FROM image_link
WHERE (work id, url, thumbnail small url, thumbnail large url, RowNumber) IN (
SELECT work_id, url, thumbnail_small_url, thumbnail_large_url, RowNumber
FROM Image CTE
WHERE RowNumber > 1
);
select * from (
select work id, url, thumbnail small url, thumbnail large url,
row_number() over(partition by work_id, url, thumbnail_small_url, thumbnail_large_url
order by work id) as RowNumber
from image_link
) p
where RowNumber = 1;
SELECT *
FROM (
SELECT
work_id,
name,
artist_id,
style,
museum id,
ROW NUMBER() OVER (PARTITION BY work id, name, artist id, style, museum id ORDER BY work id) AS RowNumber
FROM
work
) AS Subquery
WHERE
RowNumber = 1;
business
```