# Coding challenge

# Virtual art gallery

By

Jaswanth kumar S

Batch 4

# Queries:

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.

| | Name | ArtworkCount |
|---|---|---|
| ▶ | Vincent van Gogh | 2 |
| | Pablo Picasso | 1 |
| | Leonardo da Vinci | 1 |

2. List the titles of artworks created by artists from 'Spanish' and 'Dutch' nationalities, and order them by the year in ascending order.

| | Title |
|---|---|
| | Starry Night |
| | Starry Night 2 |
| ▶ | Guernica |

3. Find the names of all artists who have artworks in the 'Painting' category, and the number of artworks they have in this category.

```
33      3. Find the names of all artists who have artworks in the 'Painting' category, and the number of
34      artworks they have in this category. */
35
36 ●    select a.name, count(ar.artworkid) as artworkcount
37      from artists a
38      join artworks ar on a.artistid = ar.artistid
39      join categories c on ar.categoryid = c.categoryid
40      where c.name = 'painting'
41      group by a.name
42      ;
43
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| | name | artworkcount |
|---|---|---|
| ▶ | Vincent van Gogh | 4 |
| | Leonardo da Vinci | 1 |
| | Pablo Picasso | 1 |

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

```
45   4. List the names of artworks from the 'Modern Art Masterpieces' exhibition, along with their
46   artists and categories. */
47
48 • select ar.title, a.name as artist, c.name as category
49   from artworks ar
50   join exhibitionartworks ea on ar.artworkid = ea.artworkid
51   join exhibitions e on ea.exhibitionid = e.exhibitionid
52   join artists a on ar.artistid = a.artistid
53   join categories c on ar.categoryid = c.categoryid
54   where e.title = 'modern art masterpieces';
55
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

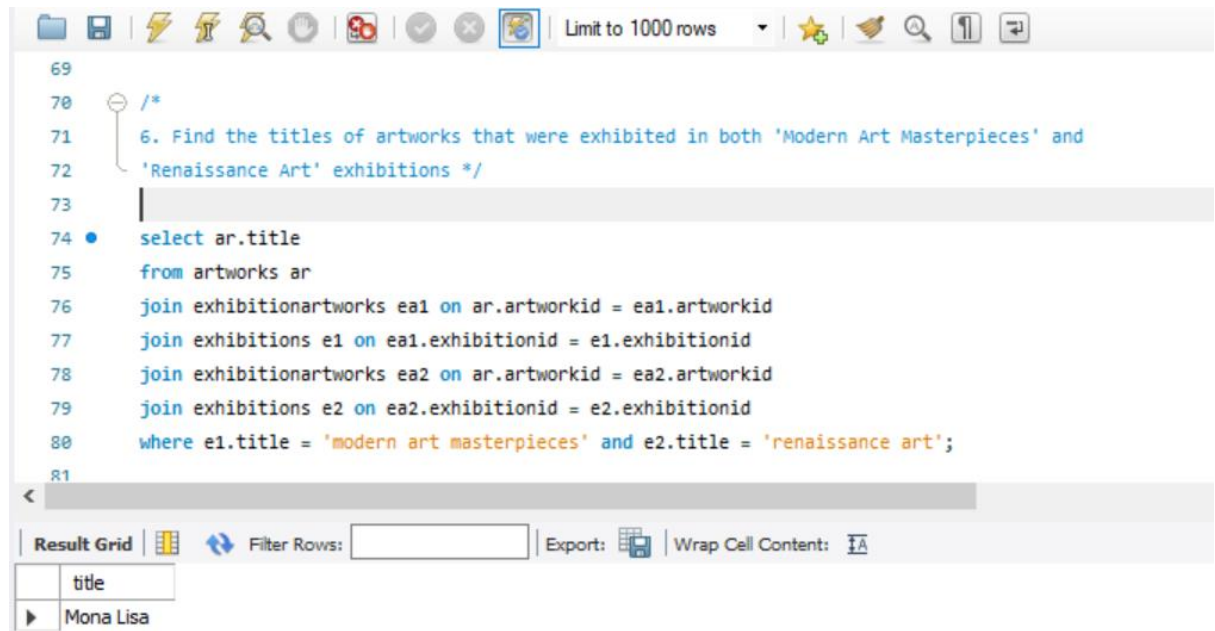| title | artist | category |
|---|---|---|
| ▶ Starry Night | Vincent van Gogh | Painting |
| Mona Lisa | Leonardo da Vinci | Painting |
| Guernica | Pablo Picasso | Painting |

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

```
57   5. Find the artists who have more than two artworks in the gallery. */
          Execute the EXPLAIN command on the statement under the cursor
58   |
59   -- i have inserted values to have a vivible result
60 • INSERT INTO
61       Artworks (ArtworkID, Title, ArtistID, CategoryID, Year, Description, ImageURL)
62   VALUES
63       (5, 'Starry Night 3', 2, 1, 1889, 'A famous painting by Vincent van Gogh.', 'starry_night_3.jpg'),
64       (6, 'Starry Night 4', 2, 1, 1889, 'A famous painting by Vincent van Gogh.', 'starry_night_4.jpg')
65   ;
66 • select a.name
67   from artists a
68   where (select count(*) from artworks ar where ar.artistid = a.artistid) > 2;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| name |
|---|
| ▶ Vincent van Gogh |

## 6. Find the titles of artworks that were exhibited in both 'Modern Art Masterpieces' and 'Renaissance Art' exhibitions
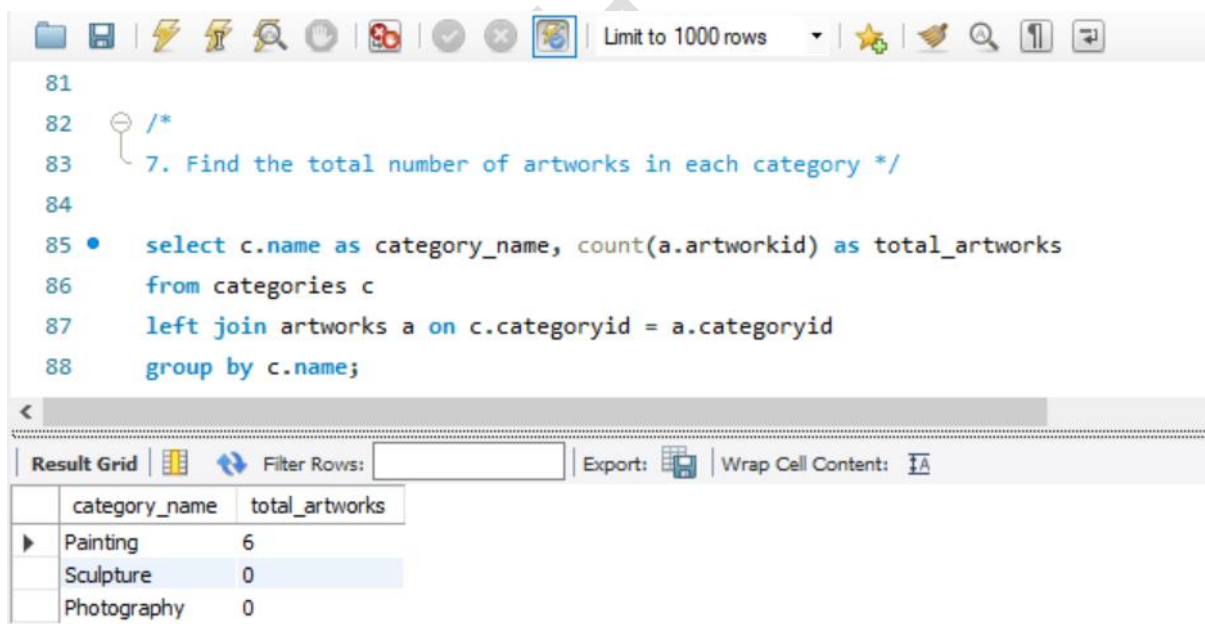
```
69
70    /*
71       6. Find the titles of artworks that were exhibited in both 'Modern Art Masterpieces' and
72       'Renaissance Art' exhibitions */
73
74    select ar.title
75    from artworks ar
76    join exhibitionartworks ea1 on ar.artworkid = ea1.artworkid
77    join exhibitions e1 on ea1.exhibitionid = e1.exhibitionid
78    join exhibitionartworks ea2 on ar.artworkid = ea2.artworkid
79    join exhibitions e2 on ea2.exhibitionid = e2.exhibitionid
80    where e1.title = 'modern art masterpieces' and e2.title = 'renaissance art';
81
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| title |
| --- |
| Mona Lisa |

## 7. Find the total number of artworks in each category

```
81
82    /*
83       7. Find the total number of artworks in each category */
84
85    select c.name as category_name, count(a.artworkid) as total_artworks
86    from categories c
87    left join artworks a on c.categoryid = a.categoryid
88    group by c.name;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| category_name | total_artworks |
| --- | --- |
| Painting | 6 |
| Sculpture | 0 |
| Photography | 0 |

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

```
89
90    /*
91    8. List artists who have more than 3 artworks in the gallery. */
92
93 •   select a.artistid, a.name, count(ar.artworkid) as artwork_count
94     from artists a
95     join artworks ar on a.artistid = ar.artistid
96     group by a.artistid, a.name
97     having count(ar.artworkid) > 3;
00
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝐈A

| artistid | name | artwork_count |
|---|---|---|
| 2 | Vincent van Gogh | 4 |

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

```
98
99    /*
100   9.Find the artworks created by artists from a specific nationality (e.g., Spanish). */
101
102 •  select a.name as artist_name, ar.title as artwork_title, a.nationality
103    from artists a
104    join artworks ar on a.artistid = ar.artistid
105    where a.nationality = 'spanish';
106
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 𝐈A

| artist_name | artwork_title | nationality |
|---|---|---|
| Pablo Picasso | Guernica | Spanish |

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

```
108   └ 10.List exhibitions that feature artwork by both Vincent van Gogh and Leonardo da Vinci. */
109                                                               Beautify/reformat the SQL script
110 ●  select e.title
111    from exhibitions e
112    join exhibitionartworks ea on e.exhibitionid = ea.exhibitionid
113    join artworks ar on ea.artworkid = ar.artworkid
114    join artists a on ar.artistid = a.artistid
115    where a.name in ('vincent van gogh', 'leonardo da vinci')
116    group by e.title
117    having count(distinct a.name) = 2;
118
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| title |
| --- |
| Modern Art Masterpieces |

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

Limit to 1000 rows

```
1  ⊖ /*
2  └ 11. Find all the artworks that have not been included in any exhibition. */
3
4 ●  select ar.title
5    from artworks ar
6    left join exhibitionartworks ea on ar.artworkid = ea.artworkid
7    where ea.exhibitionid is null;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| title |
| --- |
| Starry Night 2 |
| Starry Night 3 |
| Starry Night 4 |

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

```
16
17     -- artwork
18  ●  INSERT INTO
19         Artworks (ArtworkID, Title, ArtistID, CategoryID, Year, Description, ImageURL)
20     VALUES
21         (7, 'perspective', 4, 1, 2017, 'A famous painting by jaswanth.', 'perspective.jpg'),
22         (8, 'master mind', 4, 2, 2021, 'A famous painting by jaswanth.', 'master mind.jpg'),
23         (9, 'the life', 4, 3, 2025, 'A famous painting by jaswanth.', 'the life.jpg');
24  ●  select * from artworks;
25
26  ●  select a.name
27     from artists a
28     join artworks ar on a.artistid = ar.artistid
29     join categories c on ar.categoryid = c.categoryid
30     group by a.name
31     having count(distinct c.categoryid) = (select count(*) from categories);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: A

| name |
| --- |
| jaswanth |

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

```
32
33   /*
34      13.  List the total number of artworks in each category. */
35
36  ●  select c.name as category_name, count(a.artworkid) as total_artworks
37     from categories c
38     left join artworks a on c.categoryid = a.categoryid
39     group by c.categoryid, c.name;
40
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: A

| category_name | total_artworks |
| --- | --- |
| Painting | 7 |
| Sculpture | 1 |
| Photography | 1 |

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

```
41  /*
42    14. Find the artists who have more than 2 artworks in the gallery.*/
43
44    select a.artistid, a.name, count(ar.artworkid) as artwork_count
45    from artists a
46    join artworks ar on a.artistid = ar.artistid
47    group by a.artistid, a.name
48    having count(ar.artworkid) > 2 ;
49
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| artistid | name | artwork_count |
|----------|------|---------------|
| 2 | Vincent van Gogh | 4 |
| 4 | jaswanth | 3 |

## 15. List the categories with the average year of artworks they contain, only for categories with more than 1 artwork.

```
50  /*
51    15.  List the categories with the average year of artworks they contain, only for categories with more
52    than 1 artwork.*/
53
54    select c.name as category_name, avg(a.year) as average_year
55    from categories c
56    join artworks a on c.categoryid = a.categoryid
57    group by c.categoryid, c.name
58    having count(a.artworkid) > 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| category_name | average_year |
|---------------|--------------|
| Painting | 1859.0000 |

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

```
59
60  /*
61    16. Find the artworks that were exhibited in the 'Modern Art Masterpieces' exhibition. */
62
63    select ar.artworkid, ar.title
64    from artworks ar
65    join exhibitionartworks ea on ar.artworkid = ea.artworkid
66    join exhibitions e on ea.exhibitionid = e.exhibitionid
67    where e.title = 'modern art masterpieces';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| category_name | average_year |
|---------------|--------------|
| Painting | 1859.0000 |

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

```
68
69     /* 17. Find the categories where the average year of artworks is greater than the average year of all artworks. */
70
71 ●   select c.name as category_name, avg(a.year) as average_year
72     from categories c
73     join artworks a on c.categoryid = a.categoryid
74     group by c.categoryid, c.name
75     having avg(a.year) > (select avg(year) from artworks);
76
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| --- | --- | --- | --- |

| category_name | average_year |
| --- | --- |
| Sculpture | 2021.0000 |
| Photography | 2025.0000 |

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

```
76
77  ⊖ /*
78     18. List the artworks that were not exhibited in any exhibition. */
79
80 ●   select ar.artworkid, ar.title
81     from artworks ar
82     left join exhibitionartworks ea on ar.artworkid = ea.artworkid
83     where ea.exhibitionid is null;
84
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| --- | --- | --- | --- |

| artworkid | title |
| --- | --- |
| 4 | Starry Night 2 |
| 5 | Starry Night 3 |
| 6 | Starry Night 4 |
| 7 | perspective |
| 8 | master mind |
| 9 | the life |

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

```
84
85   /*
86     19. Show artists who have artworks in the same category as "Mona Lisa." */
87
88 •  select distinct a.artistid, a.name
89     from artists a
90     join artworks ar on a.artistid = ar.artistid
91     where ar.categoryid = (select categoryid from artworks where title = 'mona lisa');
92
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| artistid | name |
| --- | --- |
| 1 | Pablo Picasso |
| 2 | Vincent van Gogh |
| 3 | Leonardo da Vinci |
| 4 | jaswanth |

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

```
92
93   /*
94     20.  List the names of artists and the number of artworks they have in the gallery. */
95
96 •  select a.name as artist_name, count(ar.artworkid) as artwork_count
97     from artists a
98     left join artworks ar on a.artistid = ar.artistid
99     group by a.artistid, a.name;
100
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 

| artist_name | artwork_count |
| --- | --- |
| Pablo Picasso | 1 |
| Vincent van Gogh | 4 |
| Leonardo da Vinci | 1 |
| jaswanth | 3 |

End of the document