Aim: To upload raw data containing CSV files to BigQuery and answer key business questions.

CSV files uploaded: Album, artist, customer, employee, genre, invoice, invoice line, media type, playlist, playlist track, track.

Key business questions to answer:
1. Who is the senior most employee based on job title?
2. Which countries have the most Invoices?
3. What are top 3 values of total invoice?
4. Which city has the best customers? We would like to throw a promotional Music Festival in the city we made the most money. Write a query that returns one city that has the highest sum of invoice totals. Return both the city name & sum of all invoice totals.
5. Who is the best customer? The customer who has spent the most money will be declared the best customer. Write a query that returns the person who has spent the most money.
6. Write query to return the email, first name, last name, & Genre of all Rock Music listeners. Return your list ordered alphabetically by email starting with A.
7. Let's invite the artists who have written the most rock music in our dataset. Write a query that returns the Artist name and total track count of the top 10 rock bands.
8. Return all the track names that have a song length longer than the average song length. Return the Name and Milliseconds for each track. Order by the song length with the longest songs listed first.
9. Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent.
10. We want to find out the most popular music Genre for each country. We determine the most popular genre as the genre with the highest amount of purchases. Write a query that returns each country along with the top Genre. For countries where the maximum number of purchases is shared return all Genres.
11. Write a query that determines the customer that has spent the most on music for each country. Write a query that returns the country along with the top customer and how much they spent. For countries where the top amount spent is shared, provide all customers who spent this amount.

Tasks: Querying using JOIN, Common Table and Recursive.

Insights:
1. Senior most employee is Madan Mohan and works as a Senior General Manager.
2. Top 3 countries with most invoices are USA (131), Canada (76), Brazil (61).
3. Top 3 values of total invoice: 23.7599, 19.8, 19.8.
4. Prague has the best customers with total invoices of 273.2399.
5. The person who spent the most money was Frantisek Wichterlova (144.54).
6. A snippet of the long list has been included in the next pages.
7. A snippet of the long list has been included in the next pages.

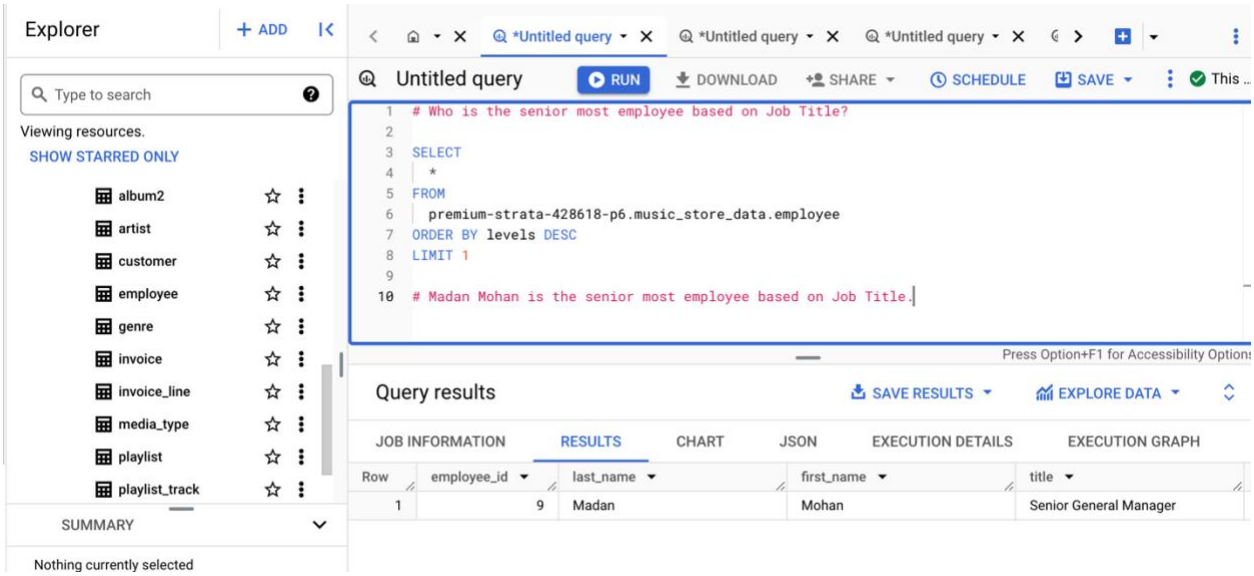
8. The longest song was Occupation / Precipice with 5286953 milliseconds.
9. A snippet of the long list has been included in the next pages.
10. A snippet of the long list has been included in the next pages.
11. A snippet of the long list has been included in the next pages.

Guided by Rishabh Mishra https://www.youtube.com/@RishabhMishraOfficial

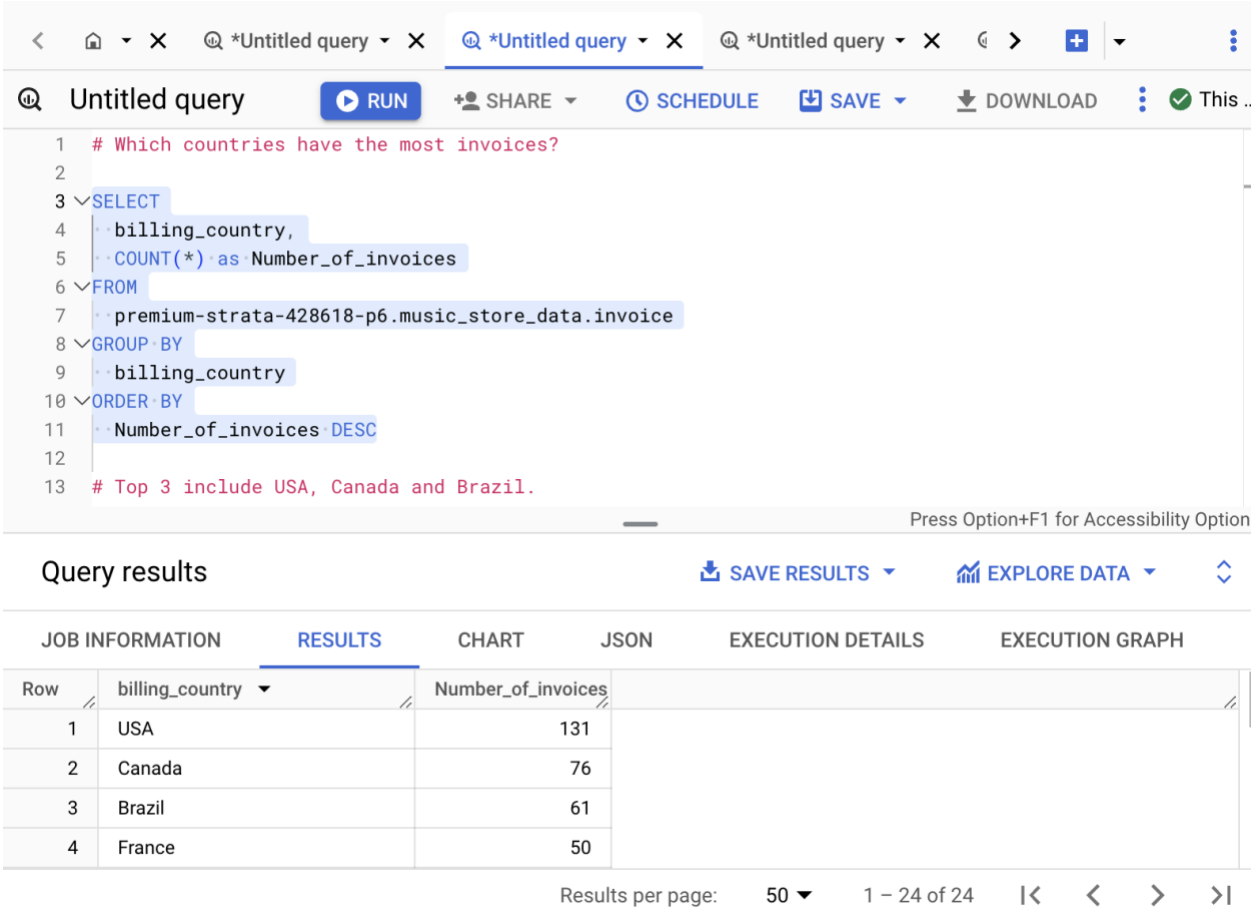
My GitHub: https://github.com/RahulSureshChavan/Guided-Project-SQL-Music-Store-Analysis

Following are the snippets answering the questions:

Question 1:

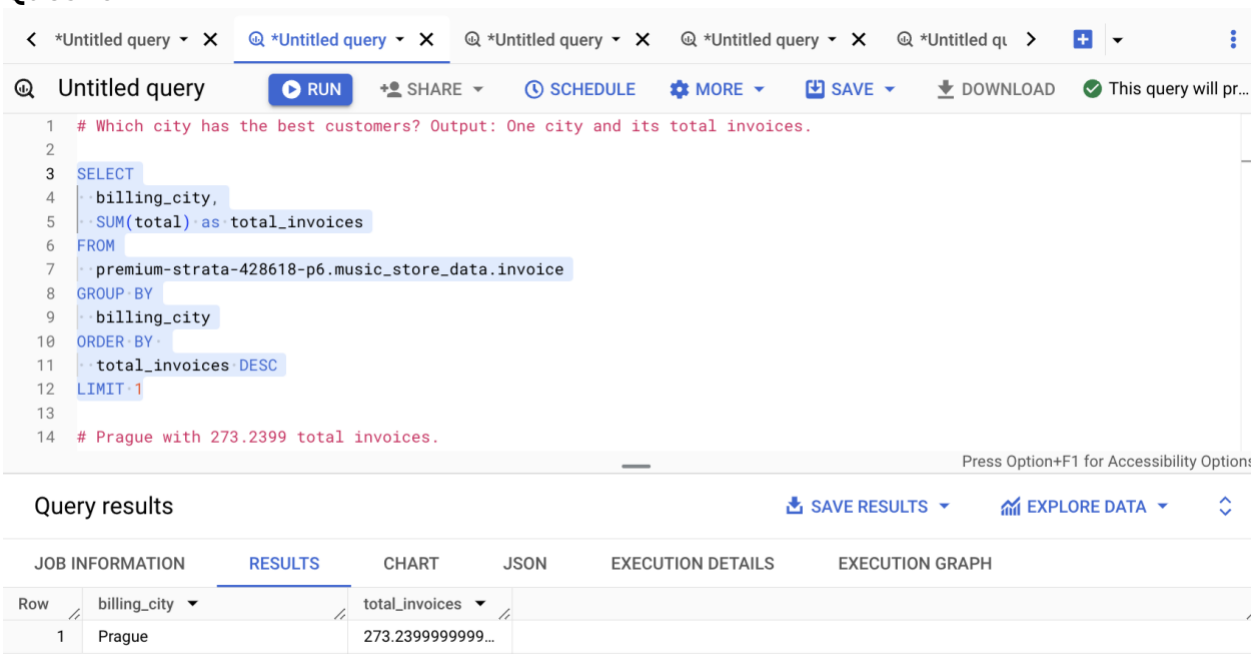


Question 2:

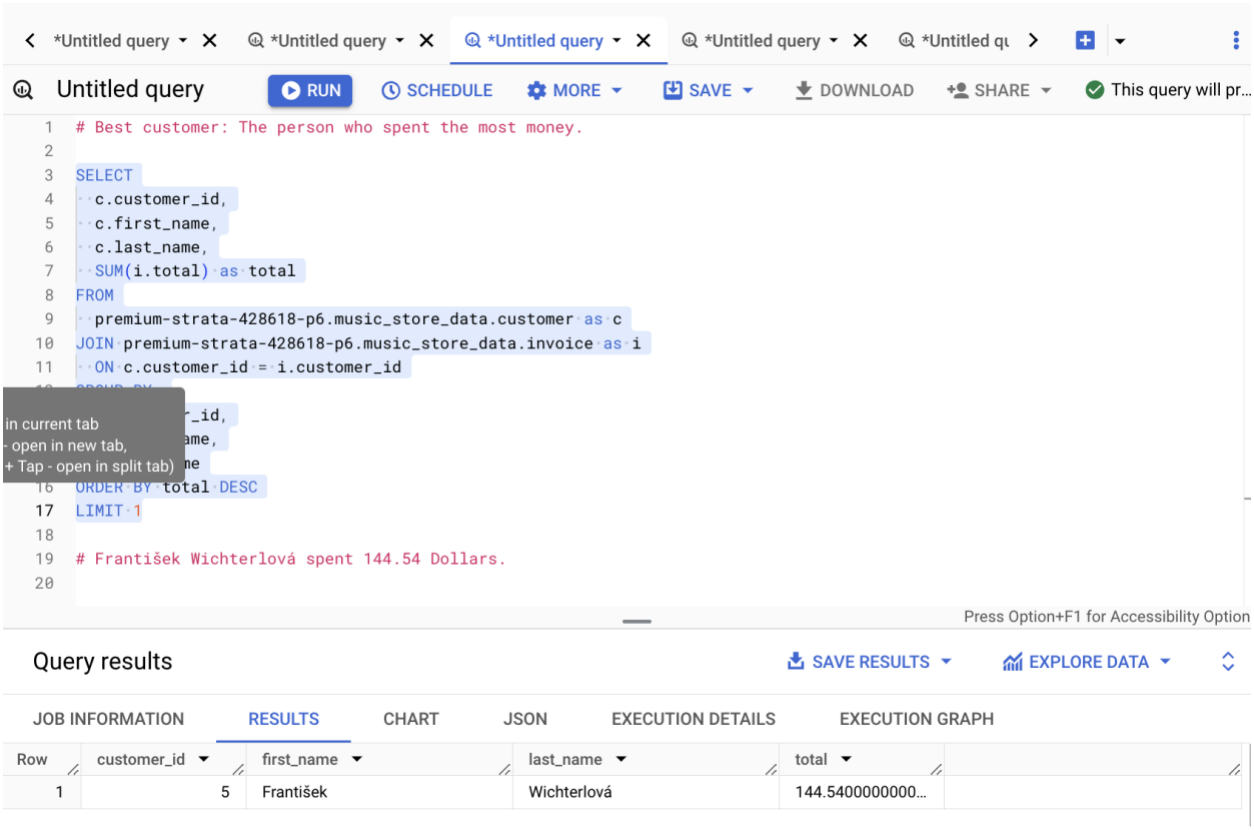

*Untitled query
*Untitled query
*Untitled query
Untitled query
RUN
SHARE
SCHEDULE
SAVE
DOWNLOAD
This ..
1 # Which countries have the most invoices?
2
3 SELECT
4 billing_country,
5 COUNT(*) as Number_of_invoices
6 FROM
7 premium-strata-428618-p6.music_store_data.invoice
8 GROUP BY
9 billing_country
10 ORDER BY
11 Number_of_invoices DESC
12
13 # Top 3 include USA, Canada and Brazil.
Press Option+F1 for Accessibility Option
Query results
SAVE RESULTS
EXPLORE DATA
JOB INFORMATION
RESULTS
CHART
JSON
EXECUTION DETAILS
EXECUTION GRAPH
Row
billing_country
Number_of_invoices
1 USA 131
2 Canada 76
3 Brazil 61
4 France 50
Results per page:
50
1 – 24 of 24

Question 3:

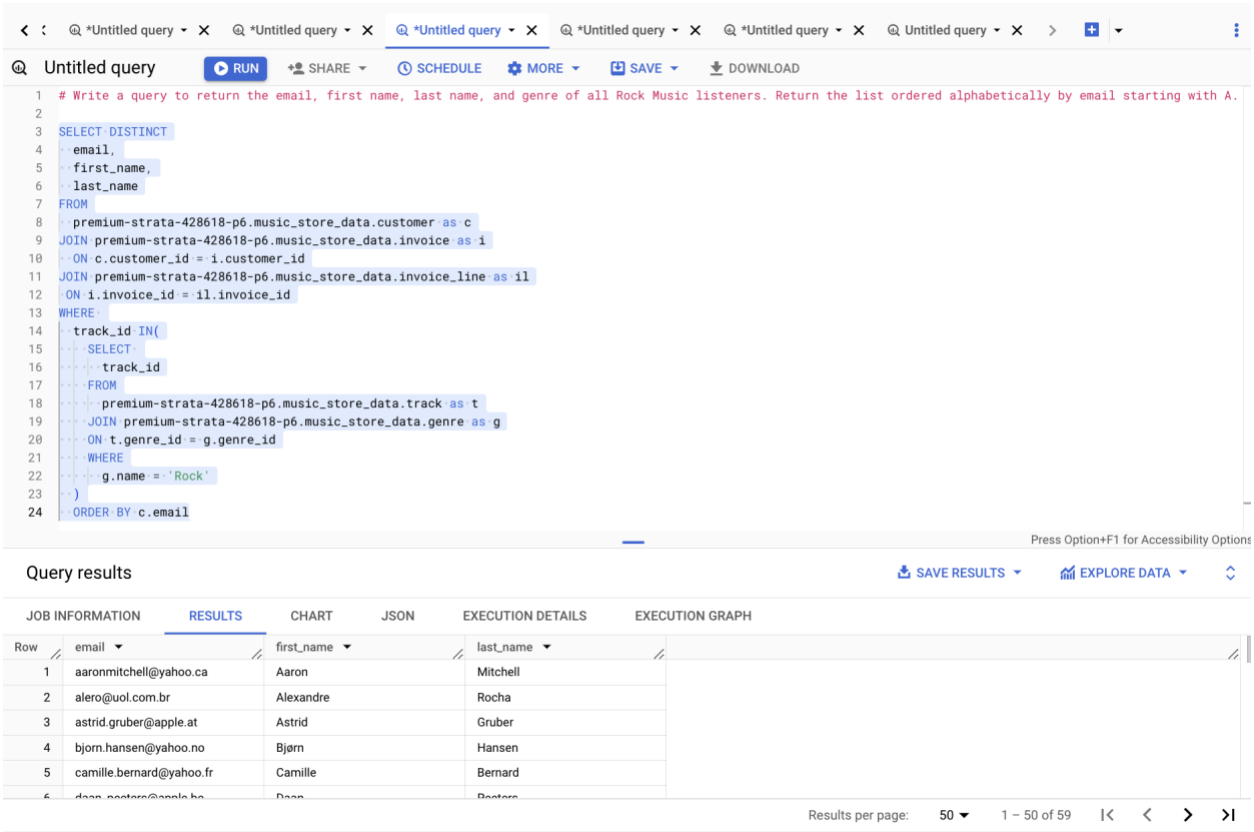
Question 4:



Question 5:


*Untitled query
*Untitled query
*Untitled query
*Untitled query
*Untitled qu
Untitled query
RUN
SCHEDULE
MORE
SAVE
DOWNLOAD
SHARE
This query will pr...
Best customer: The person who spent the most money.
SELECT
c.customer_id,
c.first_name,
c.last_name,
SUM(i.total) as total
FROM
premium-strata-428618-p6.music_store_data.customer as c
JOIN premium-strata-428618-p6.music_store_data.invoice as i
ON c.customer_id = i.customer_id
ORDER BY total DESC
LIMIT 1
František Wichterlová spent 144.54 Dollars.
Press Option+F1 for Accessibility Option
Query results
SAVE RESULTS
EXPLORE DATA
JOB INFORMATION
RESULTS
CHART
JSON
EXECUTION DETAILS
EXECUTION GRAPH
Row
customer_id
first_name
last_name
total
1
5
František
Wichterlová
144.5400000000...

Question 6:



Query results

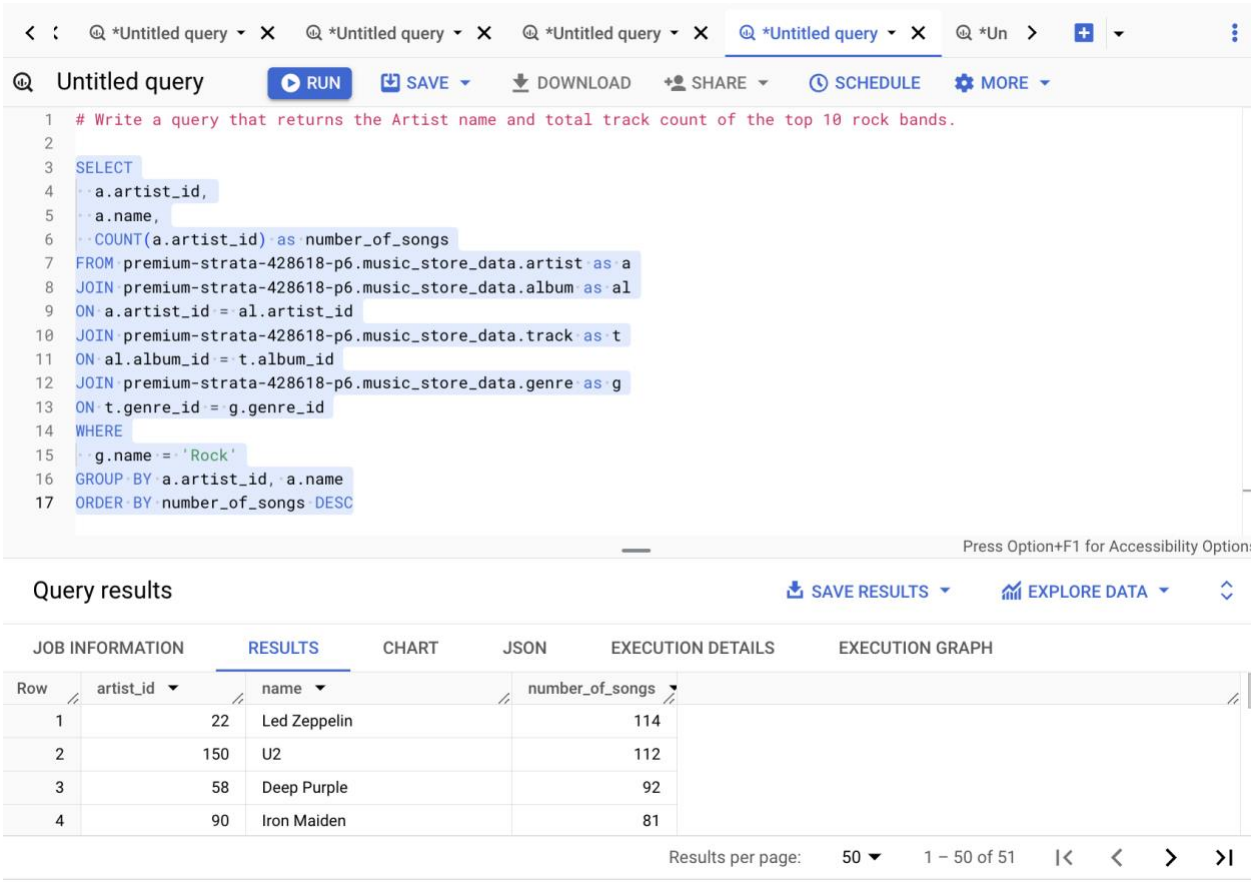
SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Row	email	first_name	last_name
1	aaronmitchell@yahoo.ca	Aaron	Mitchell
2	alero@uol.com.br	Alexandre	Rocha
3	astrid.gruber@apple.at	Astrid	Gruber
4	bjorn.hansen@yahoo.no	Bjørn	Hansen
5	camille.bernard@yahoo.fr	Camille	Bernard

Results per page: 50 | 1 – 50 of 59

Question 7:


*Untitled query
*Untitled query
*Untitled query
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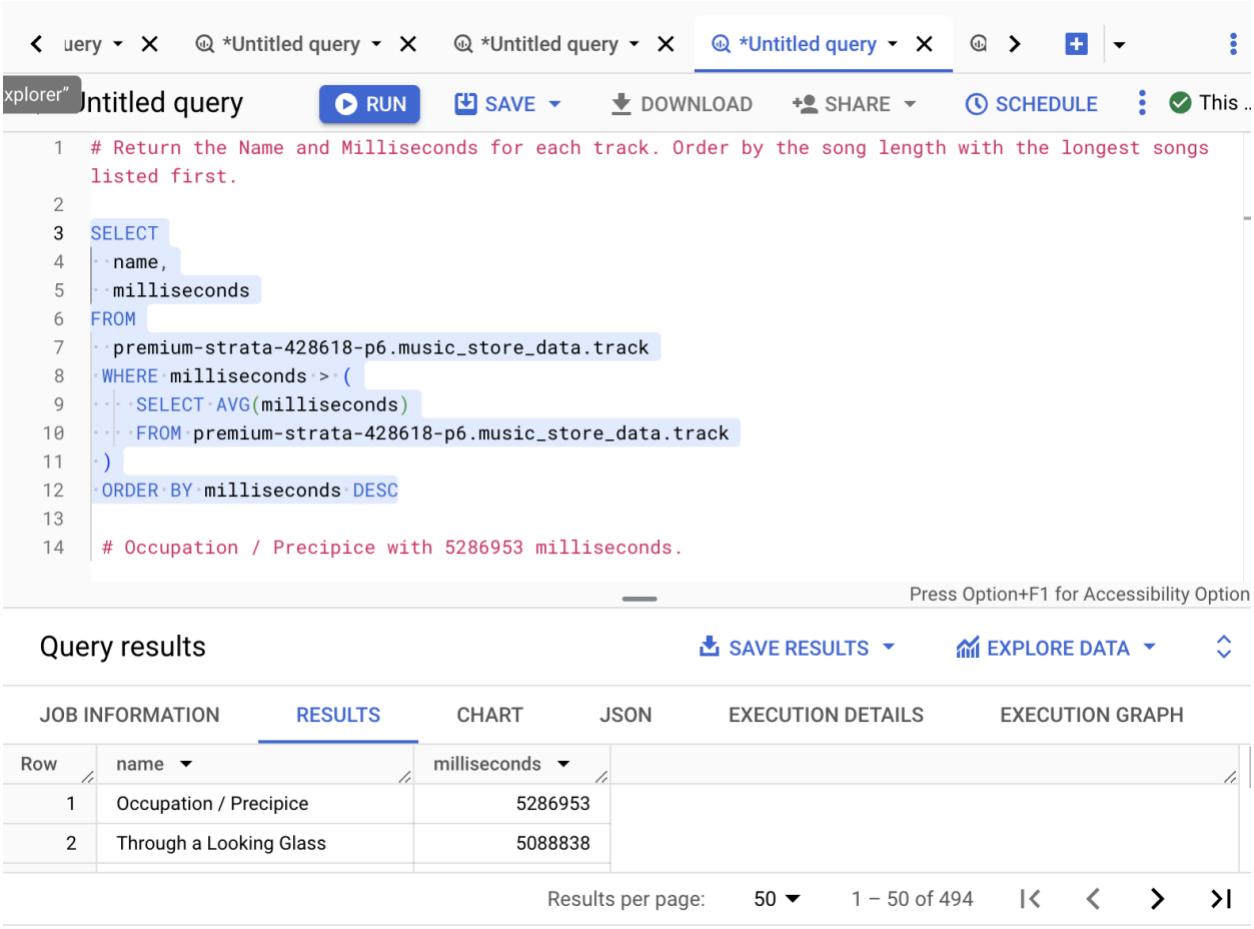
*Un
Untitled query
RUN
SAVE
DOWNLOAD
SHARE
SCHEDULE
MORE
Write a query that returns the Artist name and total track count of the top 10 rock bands.
SELECT
a.artist_id,
a.name,
COUNT(a.artist_id) as number_of_songs
FROM premium-strata-428618-p6.music_store_data.artist as a
JOIN premium-strata-428618-p6.music_store_data.album as al
ON a.artist_id = al.artist_id
JOIN premium-strata-428618-p6.music_store_data.track as t
ON al.album_id = t.album_id
JOIN premium-strata-428618-p6.music_store_data.genre as g
ON t.genre_id = g.genre_id
WHERE
g.name = 'Rock'
GROUP BY a.artist_id, a.name
ORDER BY number_of_songs DESC
Press Option+F1 for Accessibility Options
Query results
SAVE RESULTS
EXPLORE DATA
JOB INFORMATION
RESULTS
CHART
JSON
EXECUTION DETAILS
EXECUTION GRAPH
Row
artist_id
name
number_of_songs
1
22
Led Zeppelin
114
2
150
U2
112
3
58
Deep Purple
92
4
90
Iron Maiden
81
Results per page:
50
1 – 50 of 51

Question 8:


*Untitled query
*Untitled query
*Untitled query
RUN
SAVE
DOWNLOAD
SHARE
SCHEDULE
Return the Name and Milliseconds for each track. Order by the song length with the longest songs listed first.
SELECT
name,
milliseconds
FROM
premium-strata-428618-p6.music_store_data.track
WHERE milliseconds > (
SELECT AVG(milliseconds)
FROM premium-strata-428618-p6.music_store_data.track
)
ORDER BY milliseconds DESC
Occupation / Precipice with 5286953 milliseconds.
Press Option+F1 for Accessibility Option
Query results
SAVE RESULTS
EXPLORE DATA
JOB INFORMATION
RESULTS
CHART
JSON
EXECUTION DETAILS
EXECUTION GRAPH
Row
name
milliseconds
1
Occupation / Precipice
5286953
2
Through a Looking Glass
5088838
Results per page:
50
1 – 50 of 494

Question 9:

Untitled query

RUN SHARE SCHEDULE MORE SAVE DOWNLOAD

```sql
# Find how much money spent by each customer on artists? Write a query to return customer name, artist name and total spent.

SELECT
  c.customer_id,
  c.first_name,
  c.last_name,
  ar.name,
  SUM(il.unit_price*il.quantity) as amount_spent
FROM
  premium-strata-428618-p6.music_store_data.customer as c
JOIN premium-strata-428618-p6.music_store_data.invoice as i
ON c.customer_id = i.customer_id
JOIN premium-strata-428618-p6.music_store_data.invoice_line as il
ON i.invoice_id = il.invoice_id
JOIN premium-strata-428618-p6.music_store_data.track as t
ON il.track_id = t.track_id
JOIN premium-strata-428618-p6.music_store_data.album as a
ON t.album_id = a.album_id
JOIN premium-strata-428618-p6.music_store_data.artist as ar
ON a.artist_id = ar.artist_id
GROUP BY
  c.customer_id,
  c.first_name,
  c.last_name,
  ar.name
ORDER BY amount_spent DESC

```

Press Alt+F1 for Accessibility Options

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Row	customer_id	first_name	last_name	name	amount_spent
1	46	Hugh	O'Reilly	Queen	27.71999999999...
2	42	Wyatt	Girard	Frank Sinatra	23.75999999999...
3	3	François	Tremblay	The Who	19.79999999999...
4	29	Robert	Brown	Creedence Clearwater Revival	19.79999999999...
5	5	František	Wichterlová	Kiss	19.79999999999...
6	32	Aaron	Mitchell	James Brown	19.79999999999...
7	6	Helena	Holý	Red Hot Chili Peppers	19.79999999999...
8	38	Niklas	Schröder	Queen	18.81

Load more

Question 10:

Untitled query

RUN | SHARE | SCHEDULE | MORE | SAVE | DOWNLOAD

This query will process 177.23 KB when run.

```sql
# Find the most popular genre for each country. Popular genre is the one with highest purchases.

# Using Common Table

WITH popular_genre AS
(
    SELECT
    COUNT(il.quantity) AS purchases, c.country, g.name, g.genre_id, ROW_NUMBER() OVER(PARTITION BY c.country ORDER BY COUNT(il.quantity)DESC) AS RowNo
    FROM premium-strata-428618-p6.music_store_data.invoice_line AS il
    JOIN premium-strata-428618-p6.music_store_data.invoice AS i
    ON i.invoice_id = il.invoice_id
    JOIN premium-strata-428618-p6.music_store_data.customer AS c
    ON c.customer_id = i.customer_id
    JOIN premium-strata-428618-p6.music_store_data.track AS t
    ON t.track_id = il.track_id
    JOIN premium-strata-428618-p6.music_store_data.genre AS g
    ON g.genre_id = t.genre_id
    GROUP BY c.country, g.name, g.genre_id
    ORDER BY c.country ASC, purchases DESC
)
SELECT *
FROM popular_genre
WHERE RowNo <= 1
```

Press Alt+F1 for Accessibility Options.

Query results

SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Row	purchases	country	name	genre_id	RowNo
1	17	Argentina	Alternative & Punk	4	1
2	34	Australia	Rock	1	1
3	40	Austria	Rock	1	1
4	26	Belgium	Rock	1	1
5	205	Brazil	Rock	1	1
6	333	Canada	Rock	1	1
7	61	Chile	Rock	1	1
8	143	Czech Republic	Rock	1	1
9	24	Denmark	Rock	1	1
10	46	Finland	Rock	1	1
11	211	France	Rock	1	1
12	194	Germany	Rock	1	1

Load more

Results per page: 50 | 1 – 24 of 24

Untitled query

RUN | SHARE | SCHEDULE | MORE | SAVE | DOWNLOAD

```sql
# Find the most popular genre for each country. Popular genre is the one with highest purchases.

# Using Recursive

WITH RECURSIVE
  sales_per_country AS(
    SELECT COUNT(*) AS purchases_per_genre, c.country, g.name, g.genre_id
    FROM premium-strata-428618-p6.music_store_data.invoice_line AS il
    JOIN premium-strata-428618-p6.music_store_data.invoice AS i
    ON i.invoice_id = il.invoice_id
    JOIN premium-strata-428618-p6.music_store_data.customer AS c
    ON c.customer_id = i.customer_id
    JOIN premium-strata-428618-p6.music_store_data.track AS t
    ON t.track_id = il.track_id
    JOIN premium-strata-428618-p6.music_store_data.genre AS g
    ON g.genre_id = t.genre_id
    GROUP BY 2,3,4
    ORDER BY 2
  ),
  max_genre_per_country AS (SELECT MAX(purchases_per_genre) AS max_genre_number, country
    FROM sales_per_country
    GROUP BY 2
    ORDER BY 2)

SELECT sales_per_country.*
FROM sales_per_country
JOIN max_genre_per_country ON sales_per_country.country = max_genre_per_country.country
WHERE sales_per_country.purchases_per_genre = max_genre_per_country.max_genre_number;
```

Press Alt+F1 for Accessibility Option

Query results

SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Row	purchases_per_genre	country	name	genre_id
1	561	USA	Rock	1
2	333	Canada	Rock	1
3	211	France	Rock	1
4	40	Poland	Rock	1
5	102	India	Rock	1
6	194	Germany	Rock	1
7	108	Portugal	Rock	1
8	46	Finland	Rock	1
9	205	Brazil	Rock	1

Results per page: 50 | 1 – 24 of 24

Job history

REFRESH

Question 11:

Untitled query

RUN SHARE SCHEDULE MORE SAVE DOWNLOAD

```sql
# Write a query that determines the customer that has spent the most on music for each country. Write a query that returns the country along with the
top customer and how much they spent. For countries where the top amount spent is shared, provide all customers who spent this amount.

WITH Customter_with_country AS (
    SELECT c.customer_id,c.first_name,c.last_name,i.billing_country,SUM(i.total) AS total_spending,
      ROW_NUMBER() OVER(PARTITION BY i.billing_country ORDER BY SUM(i.total) DESC) AS RowNo
    FROM premium-strata-428618-p6.music_store_data.invoice AS i
    JOIN premium-strata-428618-p6.music_store_data.customer AS c
    ON c.customer_id = i.customer_id
    GROUP BY 1,2,3,4
    ORDER BY 4 ASC,5 DESC)
SELECT * FROM Customter_with_country WHERE RowNo <= 1
```

Press Alt+F1 for Accessibility Options.

Query results

SAVE RESULTS EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | JSON | EXECUTION DETAILS | EXECUTION GRAPH

Row	customer_id	first_name	last_name	billing_country	total_spending	RowNo
1	56	Diego	Gutiérrez	Argentina	39.6	1
2	55	Mark	Taylor	Australia	81.18	1
3	7	Astrid	Gruber	Austria	69.3	1
4	8	Daan	Peeters	Belgium	60.38999999999...	1
5	1	Luís	Gonçalves	Brazil	108.8999999999...	1
6	3	François	Tremblay	Canada	99.99	1
7	57	Luis	Rojas	Chile	97.02000000000...	1
8	5	František	Wichterlová	Czech Republic	144.5400000000...	1
9	9	Kara	Nielsen	Denmark	37.61999999999...	1
10	44	Terhi	Hämäläinen	Finland	79.2	1
11	42	Wyatt	Girard	France	99.99	1
12	37	Fynn	Zimmermann	Germany	94.05000000000...	1

Load more

Results were stored in a separate dataset:

- Results
  - Best_customer
  - Best_customer_by_...
  - Country_TopCustom...
  - Countrywise_popular...
  - Longest_songs
  - Money_spent_by_ea...
  - Number_of_invoices
  - Rock_artists_with_m...
  - Rock_listeners
  - Senior
  - Top_3_values_invoice