

Digital Music Store analysis

SQL Project

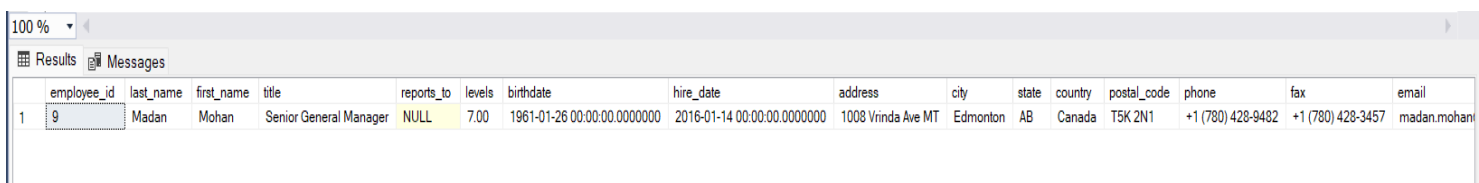
Objective:-

This project is for beginners and will teach you how to analyze the music playlist database. You can **examine the dataset with SQL** and help the **store understand its business growth** by answering simple questions.

-Q1 Who is the senior most emp based on job role?

```
> select top 1 * from employee
   order by levels desc;
```

Result:-



	employee_id	last_name	first_name	title	reports_to	levels	birthdate	hire_date	address	city	state	country	postal_code	phone	fax	email
1	9	Madan	Mohan	Senior General Manager	NULL	7.00	1961-01-26 00:00:00.0000000	2016-01-14 00:00:00.0000000	1008 Vrinda Ave MT	Edmonton	AB	Canada	T5K 2N1	+1 (780) 428-9482	+1 (780) 428-3457	madan.mohan

Q2 Which country has the most invoices?

```
> select count(*) as Total_count , billing_country
   from invoice group by billing_country
   order by Total_count desc;
```

Result:-



	Total_count	billing_country
1	131	USA
2	76	Canada
3	61	Brazil
4	50	France
5	41	Germany
6	30	Czech Republic
7	29	Portugal
8	28	United Kingdom
9	21	India
10	13	Ireland
11	13	Chile
12	11	Finland
13	11	Spain
14	10	Sweden
15	10	Poland
16	10	Netherlands
17	10	Hungary
18	10	Denmark
19	10	Australia
20	9	Austria
21	9	Italy
22	9	Norway
23	7	Belgium
24	5	Argentina

Q3 What are top 3 values of total invoices

```
> select top 3 total from invoice
   order by total desc;
```

Result:-

Results		Messages
	total	
1	23.7600002288818	
2	19.7999992370605	
3	19.7999992370605	

Q4: 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

```
> select top 1 sum(total) as total_invoice, billing_city
from invoice
group by billing_city
order by total_invoice desc;
```

Result:-

Results		Messages
	total_invoice	billing_city
1	273.240000247955	Prague

Q5: 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

```
> select top 1 customer.customer_id, first_name, last_name, sum(invoice.total) as
total_spending
from customer inner join invoice on customer.customer_id = invoice.customer_id
group by customer.customer_id, first_name, last_name
order by total_spending desc;
```

Result:-

100 %

Results

Messages

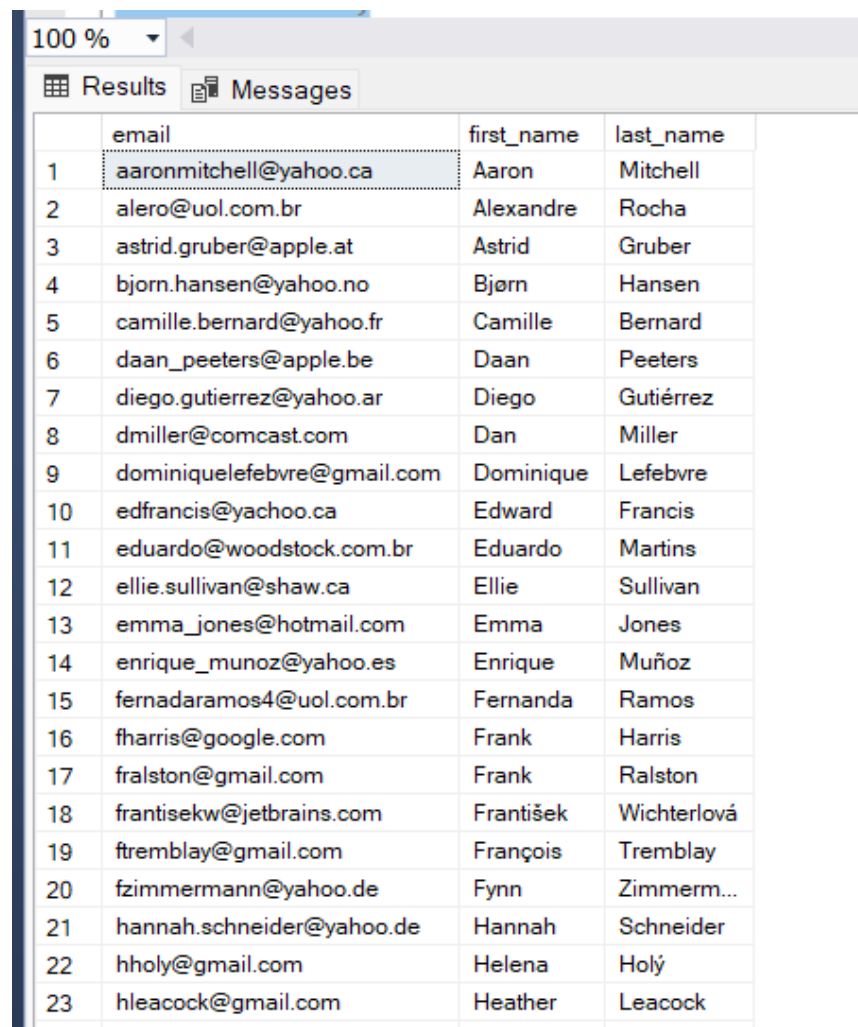
	customer_id	first_name	last_name	total_spending
1	5	František	Wichterlová	144.539998054504

Moderate Questions

Q1: Write a query to return the email, first name, last name, and genre of all Rock Music listeners. Return your list ordered alphabetically by email starting with A.

```
> SELECT DISTINCT email, first_name, last_name
   FROM customer
   JOIN invoice ON customer.customer_id = invoice.customer_id
   JOIN invoice_line ON invoice.invoice_id = invoice_line.invoice_id
  WHERE track_id IN(
    SELECT track_id FROM track
    JOIN genre ON track.genre_id = genre.genre_id
    WHERE genre.name LIKE 'Rock'
  )
 ORDER BY email;
```

Result:-



	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
6	daan_peeters@apple.be	Daan	Peeters
7	diego.gutierrez@yahoo.ar	Diego	Gutiérrez
8	dmiller@comcast.com	Dan	Miller
9	dominiquelefebvre@gmail.com	Dominique	Lefebvre
10	edfrancis@yahoo.ca	Edward	Francis
11	eduardo@woodstock.com.br	Eduardo	Martins
12	ellie.sullivan@shaw.ca	Ellie	Sullivan
13	emma_jones@hotmail.com	Emma	Jones
14	enrique_munoz@yahoo.es	Enrique	Muñoz
15	fernadaramos4@uol.com.br	Fernanda	Ramos
16	fharris@google.com	Frank	Harris
17	fralston@gmail.com	Frank	Ralston
18	frantisekw@jetbrains.com	František	Wichterlová
19	ftremblay@gmail.com	François	Tremblay
20	fzimmermann@yahoo.de	Fynn	Zimmerm...
21	hannah.schneider@yahoo.de	Hannah	Schneider
22	hholy@gmail.com	Helena	Holy
23	hleacock@gmail.com	Heather	Leacock

Q2: 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

```
> select top 10 artist.artist_id, artist.name, count(artist.artist_id) as
number_of_songs
from track
join album on album.album_id = track.album_id
join artist on artist.artist_id = album.artist_id
join genre on genre.genre_id = track.genre_id
where genre.name like 'Rock'
group by artist.artist_id, artist.name
order by number_of_songs desc;
```

Result:-

100 %			
Results Messages			
	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
5	118	Pearl Jam	54
6	152	Van Halen	52
7	51	Queen	45
8	142	The Rolling Stones	41
9	76	Creedence Clearwater Revival	40
10	52	Kiss	35

Q3: 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.

```
> select name, track.milliseconds
from track
where milliseconds > (select AVG(track.milliseconds) as avg_track_length from
track)
order by milliseconds desc;
```

Result:-

100 %		
Results Messages		
	name	milliseconds
1	Occupation / Precipice	5286953
2	Through a Looking Glass	5088838
3	Greetings from Earth, Pt. 1	2960293
4	The Man With Nine Lives	2956998
5	Battlestar Galactica, Pt. 2	2956081
6	Battlestar Galactica, Pt. 1	2952702
7	Murder On the Rising Star	2935894
8	Battlestar Galactica, Pt. 3	2927802
9	Take the Celestra	2927677
10	Fire In Space	2926593
11	The Long Patrol	2925008
12	The Magnificent Warriors	2924716
13	The Living Legend, Pt. 1	2924507
14	The Gun On Ice Planet Zero, Pt. 2	2924341
15	The Hand of God	2924007

Advanced Questions

Q1: Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent

```
> WITH best_selling_artist AS (  
    SELECT TOP 1  
        artist.artist_id AS artist_id,  
        artist.name AS artist_name,  
        SUM(invoice_line.unit_price * invoice_line.quantity) AS total_sales  
    FROM  
        invoice_line  
    JOIN track ON track.track_id = invoice_line.track_id  
    JOIN album ON album.album_id = track.album_id  
    JOIN artist ON artist.artist_id = album.artist_id  
    GROUP BY  
        artist.artist_id, artist.name  
    ORDER BY  
        total_sales DESC  
)  
SELECT  
    c.customer_id,  
    c.first_name,  
    c.last_name,  
    bsa.artist_name,  
    SUM(il.unit_price * il.quantity) AS amount_spent  
FROM  
    invoice i  
    JOIN customer c ON c.customer_id = i.customer_id  
    JOIN invoice_line il ON il.invoice_id = i.invoice_id  
    JOIN track t ON t.track_id = il.track_id  
    JOIN album alb ON alb.album_id = t.album_id  
    JOIN best_selling_artist bsa ON bsa.artist_id = alb.artist_id  
GROUP BY  
    c.customer_id, c.first_name, c.last_name, bsa.artist_name  
ORDER BY  
    amount_spent DESC;
```

Result:-

	customer_id	first_name	last_name	artist_name	amount_spent
1	46	Hugh	O'Reilly	Queen	27.7200002670288
2	38	Niklas	Schröder	Queen	18.8100001811981
3	3	François	Tremblay	Queen	17.8200001716614
4	34	João	Fernandes	Queen	16.8300001621246
5	41	Marc	Dubois	Queen	11.8800001144409
6	53	Phil	Hughes	Queen	11.8800001144409
7	47	Lucas	Mancini	Queen	10.8900001049042
8	33	Ellie	Sullivan	Queen	10.8900001049042
9	5	František	Wichterlová	Queen	3.96000003814697
10	20	Dan	Miller	Queen	3.96000003814697
11	23	John	Gordon	Queen	2.97000002861023
12	31	Martha	Silk	Queen	2.97000002861023
13	54	Steve	Murray	Queen	2.97000002861023
14	57	Luis	Rojas	Queen	1.98000001907349
15	1	Luis	Goncalves	Queen	1.98000001907349

✓ Query executed successfully.

Q2: 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

```
> WITH popular_genre AS
(
    SELECT
        COUNT(invoice_line.quantity) AS purchases,
        customer.country,
        genre.name,
        genre.genre_id,
        ROW_NUMBER() OVER (PARTITION BY customer.country ORDER BY
COUNT(invoice_line.quantity) DESC) AS RowNo
    FROM
        invoice_line
    JOIN invoice ON invoice.invoice_id = invoice_line.invoice_id
    JOIN customer ON customer.customer_id = invoice.customer_id
    JOIN track ON track.track_id = invoice_line.track_id
    JOIN genre ON genre.genre_id = track.genre_id
    GROUP BY
        customer.country, genre.name, genre.genre_id
)
-- Move the ORDER BY outside of the CTE
SELECT *
FROM
    popular_genre
WHERE
    RowNo <= 1
ORDER BY
    country ASC, purchases DESC;
```

Result:-

100 %					
Results Messages					
	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
13	44	Hungary	Rock	1	1
14	102	India	Rock	1	1
15	72	Ireland	Rock	1	1

Query executed successfully.

Q3: 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 Customer_with_country AS (
    SELECT
        customer.customer_id,
        first_name,
        last_name,
        billing_country,
        SUM(total) AS total_spending,
        ROW_NUMBER() OVER(PARTITION BY billing_country ORDER BY SUM(total) DESC) AS
RowNo
    FROM
        invoice
    JOIN customer ON customer.customer_id = invoice.customer_id
    GROUP BY
        customer.customer_id, first_name, last_name, billing_country
)
-- Move the ORDER BY outside of the CTE
SELECT *
FROM
    Customer_with_country
WHERE
    RowNo <= 1
ORDER BY
    billing_country ASC, total_spending DESC;
```

Result:-

100 %						
Results Messages						
	customer_id	first_name	last_name	billing_country	total_spending	RowNo
1	56	Diego	Gutiérrez	Argentina	39.5999991893768	1
2	55	Mark	Taylor	Australia	81.1800003051758	1
3	7	Astrid	Gruber	Austria	69.299998998642	1
4	8	Daan	Peeters	Belgium	60.389998664856	1
5	1	Luis	Gonçalves	Brazil	108.899999380112	1
6	3	François	Tremblay	Canada	99.9899981021881	1
7	57	Luis	Rojas	Chile	97.0199997425079	1
8	5	František	Wichterlová	Czech Republic	144.539998054504	1
9	9	Kara	Nielsen	Denmark	37.6199996471405	1
10	44	Terhi	Hämäläinen	Finland	79.2000005245209	1
11	42	Wyatt	Girard	France	99.9899990558624	1
12	37	Fynn	Zimmermann	Germany	94.0499994754791	1
13	45	Ladislav	Kovács	Hungary	78.2099997997284	1
14	58	Manoj	Pareek	India	111.869999647141	1
15	46	Hugh	O'Reilly	Ireland	114.839999437332	1
16	47	Lucas	Mancini	Italy	50.4900009632111	1
17	48	Johannes	Van der Berg	Netherlands	65.3400001525879	1
18	4	Bjørn	Hansen	Norway	72.2699995040894	1
19	49	Stanisław	Wójcik	Poland	76.2300002574921	1
20	24	Luis	Fernandez	Portugal	102.05999955131	1

✓ Query executed successfully.