SQL PROJECT

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LINKEDIN

PORTFOLIO

DIGITAL MUSIC STORE ANALYSIS

Presented by: Analyst Abhishek

OBJECTIVE

The Digital Music Store Analysis project aims to analyze customer spending patterns and preferences within a digital music store environment. By utilizing SQL queries to explore purchase data, this project provides insights into which genres, artists, and albums are most popular among customers, along with identifying the top spenders. This analysis is crucial for optimizing marketing strategies, enhancing customer experience, and improving inventory management

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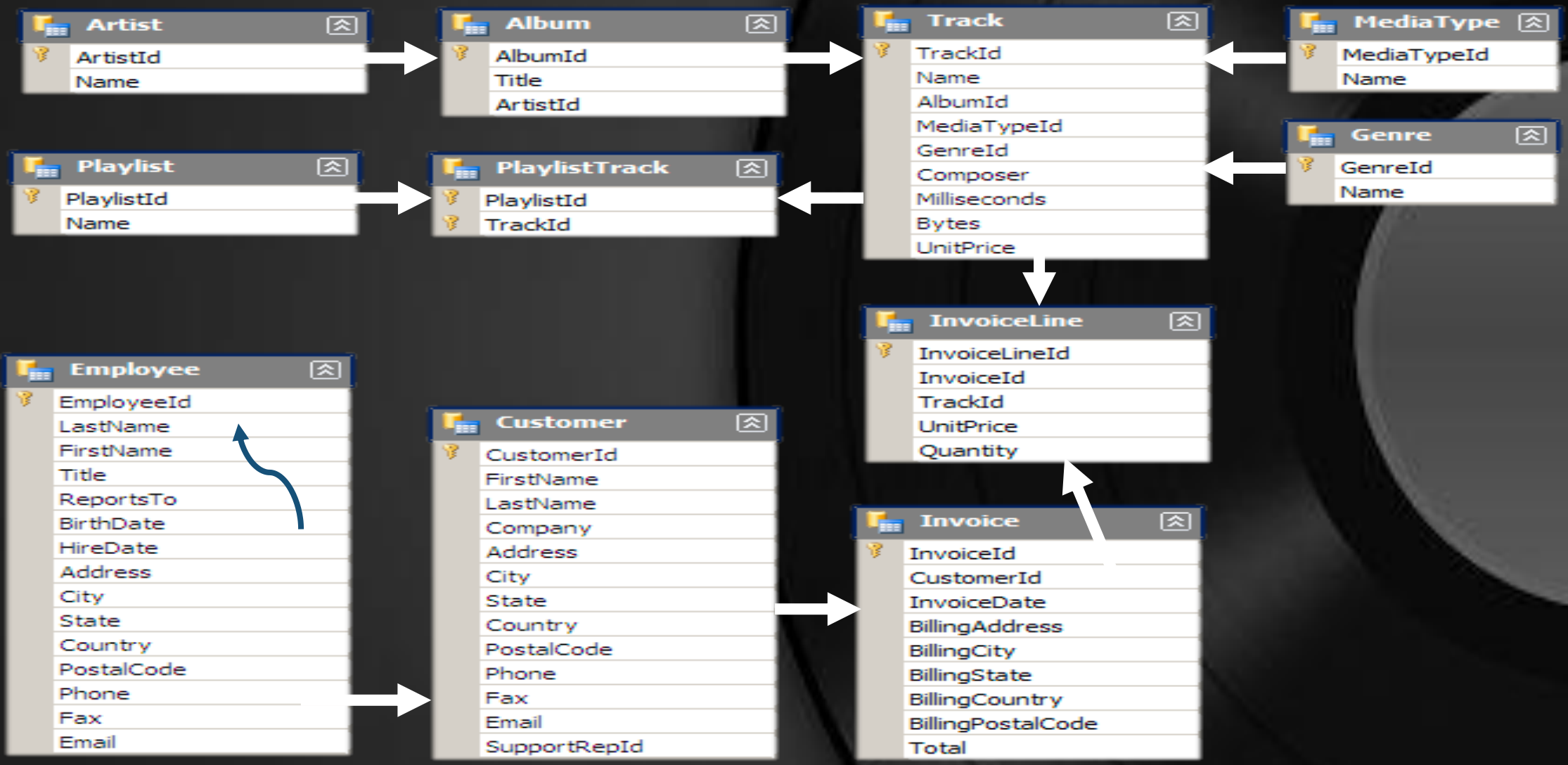
SCHEMA



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PROBLEMS ADDRESSED

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.

PROBLEMS ADDRESSED

1) 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.
2) 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.
3) Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent.
4) 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.
5) 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.

➢ Who is the senior most employee based on job title?

```
select * from employee
    order by levels DESC
        limit 1;
```

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

employee_id	last_name	first_name	title	reports_to	levels	birthdate	hire_date	address	city	state	country	postal_code	phone
1	Adams	Andrew	General Manager	9	L6	18-02-1962 00:00	14-08-2016 00:00	11120 Jasper Ave NW	Edmonton	AB	Canada	T5K 2N1	+1 (780) 428-

➢ Which countries have the most Invoices?

```sql
select billing_country, COUNT(*) as total_invoices
    from invoice
group by billing_country
order by total_invoices  DESC;
```

billing_country	total_invoices
USA	131
Canada	76
Brazil	61
France	50
Germany	41
Czech Republic	30
Portugal	29
United Kingdom	28
India	21
Ireland	13
Chile	13
Finland	11
Spain	11
Poland	10
Denmark	10
Australia	10

41

➢ What are top 3 values of total invoice?

```
select total
    from invoice
    order by total DESC
limit 3;
```

invoice_id	customer_id	invoice_date	billing_address	billing_city	billing_state	billing_country	billing_postal_code	total
183	42	2018-02-09 00:00:00	9, Place Louis Barthou	Bordeaux	None	France	33000	23.759999999999998
92	32	2017-07-02 00:00:00	696 Osborne Street	Winnipeg	MB	Canada	R3L 2B9	19.8
526	5	2020-06-08 00:00:00	Klanova 9/506	Prague	None	Czech Republic	14700	19.8

- **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 billing_city, sum(total) as invoice_total
    from invoice
        group by billing_city
    order by invoice_total DESC
limit 1 ;
```

billing_city	invoice_total
Prague	273.2400000000007

- **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 c.customer_id, concat(first_name, " ", last_name)
    as full_name, round(sum(i.total),2) as total_amount
    from customer c
        join invoice i
            on c.customer_id=i.customer_id
        group by c.customer_id
    order by total_amount DESC
limit 1;
```

	customer_id	full_name	total_amount
▶	5	FrantiÅiek WichterlovÃ¡	144.54

- **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.**

```
select distinct email, first_name, last_name
    from customer c
        Join invoice i
            on c.customer_id = i.customer_id
        join invoice_line il
    on i.invoice_id = il.invoice_id
where track_id in
        (select track_id from track t
            join genre g on t. genre_id = g.genre_id
                where g.name like "rock")
order by email ASC ;
```

email	first_name	last_name
aaronmitchell@yahoo.ca	Aaron	Mitchell
alero@uol.com.br	Alexandre	Rocha
astrid.gruber@apple.at	Astrid	Gruber
bjorn.hansen@yahoo.no	BjÃ¸rn	Hansen
camille.bernard@yahoo.fr	Camille	Bernard
daan_peeters@apple.be	Daan	Peeters
diego.gutierrez@yahoo.ar	Diego	GutiÃ©rrez
dmiller@comcast.com	Dan	Miller
dominiquelefebvre@gmail.com	Dominique	Lefebvre
edfrancis@yachoo.ca	Edward	Francis
eduardo@woodstock.com.br	Eduardo	Martins
ellie.sullivan@shaw.ca	Ellie	Sullivan
emma_jones@hotmail.com	Emma	Jones
enrique_munoz@yahoo.es	Enrique	MuÃ±oz
fernadaramos4@uol.com.br	Fernanda	Ramos

- **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 art.artist_id, art.name, count(art.artist_id) as number_of_songs
    from track t
        join album a
            on a.album_id=t.album_id
                join artist art
                    on art.artist_id= a.artist_id
                        join genre g
                on g.genre_id=t.genre_id
            where g.name like "rock"
        group by art.artist_id
    order by number_of_songs DESC
limit 10;
```

artist_id	name	number_of_songs
1	AC/DC	18
3	Aerosmith	15
8	Audioslave	14
22	Led Zeppelin	14
4	Alanis Morissette	13
5	Alice In Chains	12
23	Frank Zappa & Captain Beefheart	9
2	Accept	4

- **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, milliseconds
    from track
        where milliseconds > (
                SELECT AVG(milliseconds) AS avg_track_length
                FROM track)
order by milliseconds DESC
;
```

name	milliseconds
How Many More Times	711836
Advance Romance	677694
Sleeping Village	644571
You Shook Me(2)	619467
Talkin' 'Bout Women Obviously	589531
Stratus	582086
No More Tears	555075
The Alchemist	509413
Wheels Of Confusion / The Straightener	494524
Book Of Thel	494393
You Oughta Know (Alternate)	491885
Terra	482429
Snoopy's search-Red baron	456071
Sozinho (Hitmakers Classic Mix)	436636
Master Of Puppets	436453
Stone Crazy	433397

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

```sql
WITH best_selling_artists AS (
    SELECT a.artist_id AS artist_id, a.name AS artist_name,
    ROUND(SUM(il.unit_price * il.quantity),2) AS total_sales
    FROM invoice_line il
    JOIN track t ON t.track_id = il.track_id
    JOIN album al ON al.album_id = t.album_id
    JOIN artist a ON a.artist_id = al.artist_id
    GROUP BY a.artist_id, a.name
    ORDER BY total_sales DESC
    LIMIT 1
)
SELECT c.customer_id, c.first_name, c.last_name, bsa.artist_name,
round(SUM(il.unit_price * il.quantity),2) 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_artists 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;
```

customer_id	first_name	last_name	artist_name	amount_spent
54	Steve	Murray	AC/DC	17.82
53	Phil	Hughes	AC/DC	10.89
21	Kathy	Chase	AC/DC	10.89
49	StanisÅ‚aw	WÃ³jcik	AC/DC	9.9
1	LuÃ-s	GonÃ§alves	AC/DC	7.92
24	Frank	Ralston	AC/DC	7.92
31	Martha	Silk	AC/DC	3.96
16	Frank	Harris	AC/DC	2.97
42	Wyatt	Girard	AC/DC	2.97
6	Helena	HolÃ½	AC/DC	2.97
38	Niklas	SchrÃ¶der	AC/DC	2.97
35	Madalena	Sampaio	AC/DC	2.97
44	Terhi	HÃ¤mÃ¤lÃ...	AC/DC	2.97
9	Kara	Nielsen	AC/DC	1.98
34	JoÃ£o	Fernandes	AC/DC	1.98

- **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.**

```sql
WITH popular_genre AS (
    SELECT
        COUNT(il.quantity) AS purchases,
        c.country,
        g.name AS genre_name,
        g.genre_id,
        ROW_NUMBER() OVER(PARTITION BY c.country ORDER BY COUNT(il.quantity) DESC) AS RowNo
    FROM invoice_line il
    JOIN invoice i ON i.invoice_id = il.invoice_id
    JOIN customer c ON c.customer_id = i.customer_id
    JOIN track t ON t.track_id = il.track_id
    JOIN genre 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;
```

purchases	country	genre_name	genre_id	RowNo
1	Argentina	Rock	1	1
18	Australia	Rock	1	1
6	Austria	Rock	1	1
5	Belgium	Rock	1	1
26	Brazil	Rock	1	1
57	Canada	Rock	1	1
7	Chile	Rock	1	1
14	Czech Republic	Rock	1	1
6	Denmark	Rock	1	1
6	Finland	Rock	1	1
26	France	Rock	1	1
28	Germany	Rock	1	1
4	Hungary	Rock	1	1
13	India	Rock	1	1
2	Ireland	Rock	1	1

- **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 customer.customer_id,first_name,last_name,billing_country,
        round(SUM(total),2) 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 1,2,3,4
        ORDER BY 4 ASC,5 DESC)
SELECT * FROM Customter_with_country WHERE RowNo <= 1
```

customer_id	first_name	last_name	billing_country	total_spending	RowNo
56	Diego	GutiÃ©rrez	Argentina	39.6	1
55	Mark	Taylor	Australia	81.18	1
7	Astrid	Gruber	Austria	69.3	1
8	Daan	Peeters	Belgium	60.39	1
1	LuÃ-s	GonÃ§alves	Brazil	108.9	1
3	FranÃ§ois	Tremblay	Canada	99.99	1
57	Luis	Rojas	Chile	97.02	1
5	FrantiÅiek	WichterlovÃi	Czech Republic	144.54	1
9	Kara	Nielsen	Denmark	37.62	1
44	Terhi	HÃ¤mÃ¤lÃ¤inen	Finland	79.2	1
42	Wyatt	Girard	France	99.99	1
37	Fynn	Zimmermann	Germany	94.05	1
45	Ladislav	KovÃics	Hungary	78.21	1
58	Manoj	Pareek	India	111.87	1
46	Hugh	O'Reilly	Ireland	114.84	1
47	Lucas	Mancini	Italy	50.49	1

THANK YOU FOR YOUR ATTENTION !

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