SQL PROJECT

MUSIC STORE DATA ANALYSIS

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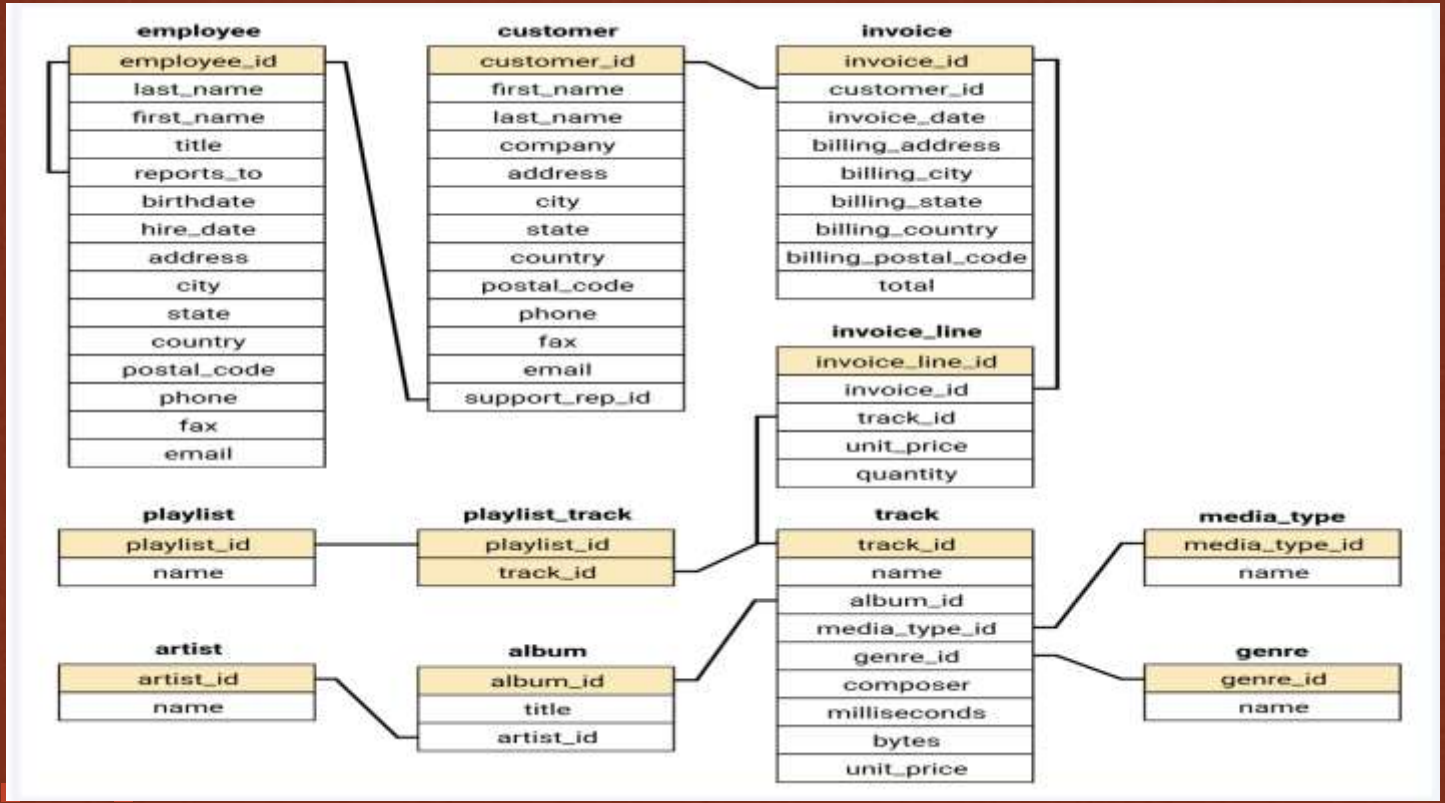
OBJECTIVE

The objective of this project is to analyse a music store's database using SQL to gain insights into customer behaviour, sales trends, inventory management, and more. The project leverages SQL queries to extract, manipulate, and visualize data, helping to make data-driven decisions for optimizing the store's operations.

DATABASE SCHEMA



LEVEL OF QUERIES

EASY

Includes:
Select, Group By, Order By, Limit

MODERATE

Includes:
Join, Select, Group By, Order By, Limit

ADVANCE

Includes:
CTE(Common Table Expression)

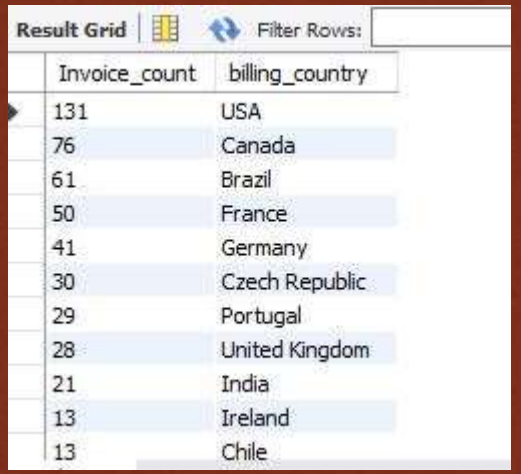
EASY

Which countries have the most Invoices?

Solution:

```
select count(*) as Invoice_count, billing_country from invoice
group by billing_country
order by Invoice_count desc
```

Result:



Invoice_count	billing_country
131	USA
76	Canada
61	Brazil
50	France
41	Germany
30	Czech Republic
29	Portugal
28	United Kingdom
21	India
13	Ireland
13	Chile

EASY

What are the top 3 values of the total invoice?

Solution:

```
select total from invoice
order by total desc
limit 3
```

Result:

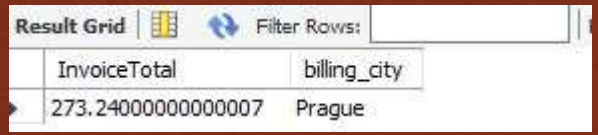
EASY

Which city has the best customers? We would like to throw a promotional Music Festival in the city where 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

Solution:

```
select sum(total) as InvoiceTotal, billing_city from invoice
group by billing_city
order by InvoiceTotal desc
limit 1
```

Result:



EASY

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.

Solution:

```
select customer.first_name, customer.last_name, customer.customer_id, sum(invoice.total) as spending
from customer
join invoice on customer.customer_id = invoice.customer_id
group by customer.customer_id
order by spending desc
limit 1
```

Result:

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

first_name	last_name	customer_id	spending
František	Wichterlová	5	144.54000000000002

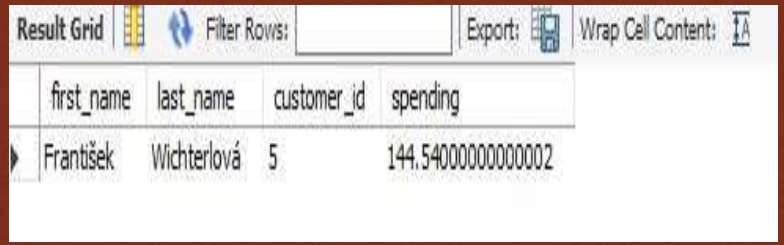
MODERATE

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.

Solution:

```
select customer.first_name, customer.last_name, customer.customer_id, sum(invoice.total) as spending
from customer
join invoice on customer.customer_id = invoice.customer_id
group by customer.customer_id
order by spending desc
limit 1
```

Result:



MODERATE

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

Solution:

```
select name, milliseconds
from track
where milliseconds > (
    select avg(milliseconds) from track
)
order by milliseconds desc
```

Result:

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

name	milliseconds
Occupation / Precipice	5286953
Through a Looking Glass	5088838
Greetings from Earth, Pt. 1	2960293
The Man With Nine Lives	2956998
Battlestar Galactica, Pt. 2	2956081
Battlestar Galactica, Pt. 1	2952702
Murder On the Rising Star	2935894
Battlestar Galactica, Pt. 3	2927802
Take the Celestra	2927677
Fire In Space	2926593
The Long Patrol	2925008

ADVANCE

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.

Solution:

```
with popular_genre as (
    select customer.country, genre.name, genre.genre_id, count(invoice_line.quantity) as Highest_purchase,
    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 1,2,3
    order by 1 asc, 4 desc
)

select * from popular_genre
where RowNo = 1
```

ADVANCE

Result:


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

country	name	genre_id	Highest_purchase	RowNo
Argentina	Alternative & Punk	4	17	1
Australia	Rock	1	34	1
Austria	Rock	1	40	1
Belgium	Rock	1	26	1
Brazil	Rock	1	205	1
Canada	Rock	1	333	1
Chile	Rock	1	61	1
Czech Republic	Rock	1	143	1
Denmark	Rock	1	24	1
Finland	Rock	1	46	1
France	Rock	1	211	1
Germany	Rock	1	194	1
Hungary	Rock	1	44	1

ADVANCE

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.

Solution:

```
with customer_country as(
    select customer.customer_id,first_name,last_name,billing_country,sum(total) as Total_spent,
    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 1,4
    order by 4 Asc, 5 desc
)

select * from customer_country
where RowNo = 1
```

ADVANCE

Result:

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

customer_id	first_name	last_name	billing_country	Total_spent	RowNo
56	Diego	Gutiérrez	Argentina	39.6	1
55	Mark	Taylor	Australia	81.18	1
7	Astrid	Gruber	Austria	69.3	1
8	Daan	Peeters	Belgium	60.38999999999999	1
1	Luís	Gonçalves	Brazil	108.89999999999998	1
3	François	Tremblay	Canada	99.99	1
57	Luis	Rojas	Chile	97.02000000000001	1
5	František	Wichterlová	Czech Republic	144.54000000000002	1
9	Kara	Nielsen	Denmark	37.61999999999999	1
44	Terhi	Hämäläinen	Finland	79.2	1
42	Wyatt	Girard	France	99.99	1
37	Fynn	Zimmermann	Germany	94.05000000000001	1
45	Ladislav	Kovács	Hungary	78.21	1

THANKS FOR WATCHING

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