

Music Store Analysis

SQL PROJECT

Overview :

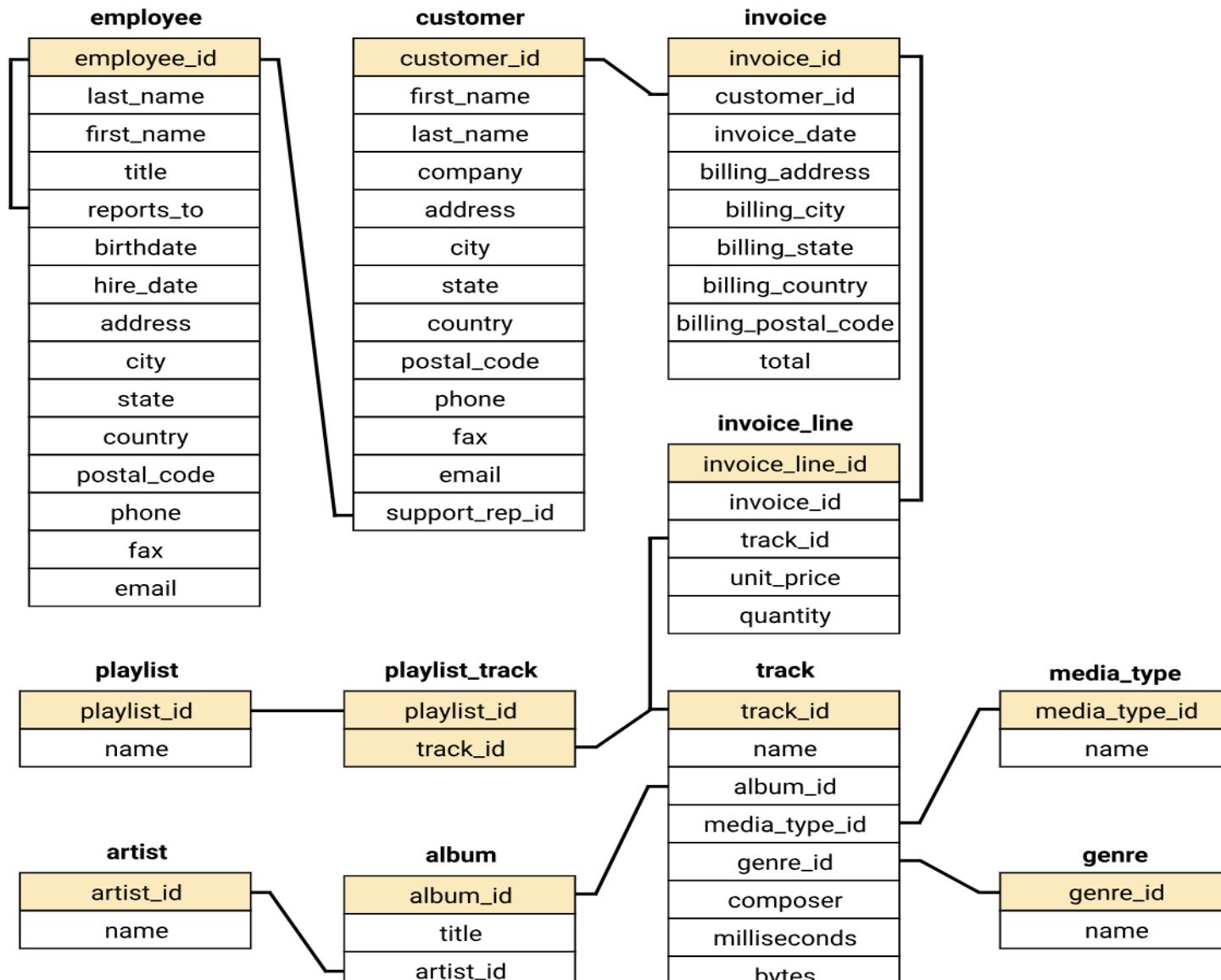


The primary objective of this project is to help the music store management enhance their business growth by helping them optimize their inventory to ensure each store has the right selection of music in stock, reducing lost sales and customer frustration.



Using SQL queries we will Identify popular music genre trends among customer segments and analyze purchase patterns to understand how customer demographics or playlist characteristics influence music taste.

DATABASE SCHEMA



QUESTION 1

Who is the senior most employee based on job title?

```
Select title, first_name, last_name
from employee
order by levels desc
limit 1;
```

OUTPUT:

	title	first_name	last_name
►	General Manager	Andrew	Adams

QUESTION 2

Which countries have the most sales?

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

OUTPUT:

	c	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
	11	Finland
	11	Spain
	10	Poland

QUESTION 3

What is the average invoice value?

```
select round(avg(total),2)as avg_invoice from invoice  
order by total desc  
;
```

OUTPUT:

	avg_invoice
▶	7.67

QUESTION 4

What are the top 3 cities with highest sales?

```
select round(sum(total) ,2) as invoice_total , billing_city
from invoice
group by billing_city
order by invoice_total desc
limit 3;
```

OUTPUT:

	invoice_total	billing_city
►	273.24	Prague
	169.29	Mountain View
	166.32	London

QUESTION 5

TOP 3 Customers based on sales amount

```
select i.customer_Id, c.first_name,c.last_name ,c.city,  
c.country, round(sum(i.total),2) as total  
from invoice i join customer c  
on i.customer_id = c.customer_id  
group by 1,2,3,4,5  
order by total desc  
limit 3 ;
```

OUTPUT:

	customer_Id	first_name	last_name	city	country	total
►	5	František	Wichterlová	Prague	Czech Republic	144.54
	6	Helena	Holáň	Prague	Czech Republic	128.7
	46	Hugh	O'Reilly	Dublin	Ireland	114.84

Write query to return email, first name, last name & genre of all rock music listeners order by email alphabetically

```
select distinct c.email, c.first_name, c.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 il.track_id in (select t.track_id from track t join genre g
on t.genre_id = g.genre_id
where g.name = 'Rock')
order by email;
```

OUTPUT:

	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	Björn	Hansen
	camille.bernard@yahoo.fr	Camille	Bernard
	daan_peeters@apple.be	Daan	Peeters
	diego.gutierrez@yahoo.ar	Diego	Gutiérrez
	dmiller@comcast.com	Dan	Miller
	dominiquelefebvre@gmail.com	Dominique	Lefebvre
	edfrancis@yahoo.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	Muñoz
	fernadaramos4@uol.com.br	Fernanda	Ramos
	fharris@google.com	Frank	Harris

QUESTION 7

Invite artists who have written most rock music in our dataset. Return artist name and total track count of top 10 rock bands

```
select ar.artist_id,ar.name , count(ar.artist_id) as total
from track t  join album2 al
on al.album_id = t.album_id
join artist ar
  on ar.artist_id = al.artist_id
join genre g on g.genre_id = t.genre_id
where g.name like 'Rock'
group by ar.artist_id,ar.name
order by total desc
limit 10;
```

OUTPUT:

	artist_id	name	total
▶	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

QUESTION 8

What is average song length of Top 10 songs based on sales?

```
with avg_song_length as
  (select t.name ,round(sum(il.track_id*il.quantity),2) as quantity_sold,
    round(t.milliseconds/1000,2) as song_length_in_seconds
  from track t join invoice_line il
  using(track_id)
  group by 1,3
  order by quantity_sold desc
  limit 10)
select concat(floor(avg(song_length_in_seconds)/60),'m',
  floor(MOD(avg(song_length_in_seconds),60)), 's')
as average_length from avg_song_length
;
```

OUTPUT:

	average_length
▶	5m18s

QUESTION 9

► Find how much amount is spent by each customer on highest earning artist? Return customer name, artist name and total spent

```
with best_selling_artist as (  
  select ar.artist_id as artist_id, ar.name as artist_name ,  
         sum(il.unit_price*il.quantity) as money_spent  
  from invoice_line il join track t  
    on il.track_id = t.track_id  
   join album2 al on al.album_id = t.album_id  
   join artist ar on ar.artist_id = al.artist_id  
 group by 1,2  
 order by 3 desc  
 limit 1  
)  
  
 select c.customer_id, c.first_name, c.last_name , bsa.artist_name,  
        sum(il.unit_price*il.quantity) as amount  
  from invoice_line il join invoice i  
    on il.invoice_id = i.invoice_id  
   join customer c on c.customer_id = i.customer_id  
   join track t on t.track_id = il.track_id  
   join album2 al on al.album_id = t.album_id  
   join best_selling_artist bsa on bsa.artist_id = al.artist_id  
 group by 1,2,3,4  
 order by 5 desc;
```


OUTPUT:

	customer_id	first_name	last_name	artist_name	amount
►	54	Steve	Murray	AC/DC	17.82
	53	Phil	Hughes	AC/DC	10.89
	21	Kathy	Chase	AC/DC	10.89
	49	Stanisław	Wójcik	AC/DC	9.9
	1	Luís	Gonçalves	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	Holm	AC/DC	2.97
	38	Niklas	Schröder	AC/DC	2.97
	35	Madalena	Sampaio	AC/DC	2.97
	44	Terhi	Hämäläinen	AC/DC	2.97
	9	Kara	Nielsen	AC/DC	1.98
	34	João	Fernandes	AC/DC	1.98
	57	Luis	Rojas	AC/DC	1.98

QUESTION 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.

```
with highest_purchases as (  
  select c.country,g.name,g.genre_Id,count(il.quantity) as purchases,  
  dense_rank() OVER(partition by C.COUNTRY order by count(il.quantity) desc) as rnk  
  from customer c join invoice i  
  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 genre g on g.genre_id = t.genre_id  
  group by 1,2,3  
  order by 1  
) select * from highest_purchases where rnk<=1;
```


OUTPUT:

	country	name	genre_Id	purchases	rnk
►	Argentina	Rock	1	1	1
	Australia	Rock	1	18	1
	Austria	Rock	1	6	1
	Belgium	Rock	1	5	1
	Brazil	Rock	1	26	1
	Canada	Rock	1	57	1
	Chile	Rock	1	7	1
	Czech Republic	Rock	1	14	1
	Denmark	Rock	1	6	1
	Finland	Rock	1	6	1
	France	Rock	1	26	1
	Germany	Rock	1	28	1
	Hungary	Rock	1	4	1
	India	Rock	1	13	1
	Ireland	Rock	1	2	1
	Italy	Rock	1	3	1

QUESTION 11

Q11: Write a query that determines the customer that has spent the most on music for each country.

```
with customer_country as(
select c.customer_id,c.first_name,c.last_name,i.billing_country,sum(i.total) as total_spend,
dense_rank() over(partition by i.billing_country order by sum(i.total) desc) as rnk
from invoice i join customer c
on i.customer_id = c.customer_id
group by 1,2,3,4
order by 4
) select * from customer_country where rnk<=1;
```

OUTPUT:

	customer_id	first_name	last_name	billing_country	total_spend	rnk
►	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	60.39	1
	1	Luís	Gonçalves	Brazil	108.9	1
	3	François	Tremblay	Canada	99.99	1
	57	Luis	Rojas	Chile	97.02	1
	5	František	Wichterlov	Czech Republic	144.54	1
	9	Kara	Nielsen	Denmark	37.62	1
	44	Terhi	Hämäläinen	Finland	79.2	1
	42	Wyatt	Girard	France	99.99	1
	37	Fynn	Zimmermann	Germany	94.05	1
	45	Ladislav	Kovács	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

Insights

- USA has the highest amount of purchases
- Average invoice value is ~ \$ 8
- Prague, Mountain View & London have the highest sales.
- Store's Top 3 customers are from Prague & Dublin.
- Artists with highest sales are AC/DC, Aerosmith & Audioslave.
- Rock is the most popular genre and has the highest sales.
- Average song length for Top 10 selling songs is 5 min 18 sec



THANKS FOR
PLAYING!