

# SQL PROJECT WITH MYSQL (DBMS)

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This dataset contains music albums data available . Following information is provided :

- album2
- artist
- customer
- employee
- genre
- invoice
- Invoice\_line
- Media\_type
- Playlist
- Playlist\_track
- track

## Queries and solutions:

**Q1: Who is the senior most employee based on job title?**

Sol: *select first\_name , title, levels as seniority from employee*

*order by seniority desc*

*Limit 1 ;*



The screenshot shows a database interface with a 'Result Grid' tab. The grid displays the results of a query. The first row shows the employee Andrew Adams, who is a General Manager with a seniority level of L6. The interface includes a 'Filter Rows' search bar, an 'Export' button, a 'Wrap Cell Content' checkbox, and a 'Fetch rows' button.

	first_name	last_name	title	senority
▶	Andrew	Adams	General Manager	L6

**Q2: Which countries have the most Invoices?**

*select billing\_country,count(billing\_country) as invoices from invoice*

*group by billing\_country*

*order by invoices desc ;*

Result Grid				Filter Rows:	
	billing_country	Numbers			
▶	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			
invoice 54		Result 55	×		

Q3: What are top 3 values of total invoice?

*select \* from invoice*

*order by total desc*

*Limit 3;*

Result Grid

Filter Rows:

Export

Wrap Cell Content:

Fetch rows:

	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

Q4: 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 to one city that has the highest sum of invoice totals. Return both the city name & sum of all invoice totals?

*select billing\_city as city, sum(total) as invoice\_total from invoice*

*group by city*

*order by invoice\_total desc ;*

city	invoice_total
Prague	273.24000000000007
Mountain View	169.29
London	166.32
Berlin	158.4
Paris	151.47
SÃo Paulo	129.69
Dublin	114.83999999999997
Delhi	111.86999999999999
SÃo JosÃ dos Campos	108.89999999999998
BrasÃlia	106.91999999999999
Lisbon	102.96000000000001
Bordeaux	99.99
MontrÃal	99.99
Madrid	98.01
Redmond	98.01

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 invoice.customer_id, customer.first_name, customer.last_name,
SUM (invoice.total) AS money_spent
FROM
    customer
INNER JOIN
    invoice
ON
    customer.customer_id = invoice.customer_id
GROUP BY
    invoice.customer_id, customer.first_name, customer.last_name ORDER BY
money_spent desc
limit 5;

```

customer_id	first_name	last_name	money_spent
5	František	Wichterlová	144.54000000000002
6	Helena	Holáňová	128.7
46	Hugh	O'Reilly	114.83999999999997
58	Manoj	Pareek	111.86999999999999
1	Luís	Gonçalves	108.89999999999998

**Q6: 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 customer.email, customer.first_name, customer.last_name, genre.name
from customer
inner join invoice
on customer.customer_id = invoice.customer_id
inner join invoice_line
on invoice.invoice_id = invoice_line.invoice_id
inner join track
on invoice_line.track_id = track.track_id
inner join genre

```

*on track.genre\_id = genre.genre\_id*

*and genre.name like 'Rock'*

*Order by customer.email asc;*

Result Grid				
Filter Rows:				
Export:				
email	first_name	last_name	name	
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock	
alero@uol.com.br	Alexandre	Rocha	Rock	
astrid.gruber@apple.at	Astrid	Gruber	Rock	
bjorn.hansen@yahoo.no	Björn	Hansen	Rock	
camille.bernard@yahoo.fr	Camille	Bernard	Rock	
daan.peeters@apple.be	Daan	Peeters	Rock	
diego.gutierrez@yahoo.ar	Diego	Gutiérrez	Rock	
dmiller@comcast.com	Dan	Miller	Rock	
dominiquelefebvre@gmail.com	Dominique	Lefebvre	Rock	
edfrancis@yahoo.ca	Edward	Francis	Rock	
eduardo@woodstock.com.br	Eduardo	Martins	Rock	
ellie.sullivan@shaw.ca	Ellie	Sullivan	Rock	

**Q7; Let's invite the artists who have written the most rock music to our dataset.**

**Write a query that returns the Artist name and total track count of the top 10 rock bands?**

*select track.composer,artist.artist\_id,artist.name , count(artist.artist\_id) as number\_of\_tracks*

*from artist*

*inner join album2 on artist.artist\_id= album2.artist\_id*

*inner join track on album2.album\_id = track.album\_id*

*inner join genre on track.genre\_id = genre.genre\_id*

*where genre.name like 'Rock'*

*group by artist.artist\_id,artist.name ,track.composer*

*order by number\_of\_tracks desc*

*Limit 10;*

	composer	artist_id	name	number_of_tracks
▶	Audioslave/Chris Cornell	8	Audioslave	14
	Alanis Morissette & Glenn Ballard	4	Alanis Morissette	13
	Angus Young, Malcolm Young, Brian Johnson	1	AC/DC	10
	AC/DC	1	AC/DC	8
	Frank Zappa	23	Frank Zappa & Captain Beefheart	7
	Jerry Cantrell	5	Alice In Chains	6
	Jerry Cantrell, Layne Staley	5	Alice In Chains	4
	Steven Tyler, Joe Perry, Desmond Child	3	Aerosmith	3
	Jimmy Page/John Bonham/John Paul Jones	22	Led Zeppelin	3
	Steven Tyler, Joe Perry, Taylor Rhodes	3	Aerosmith	2

**Q7;**

**Q8: 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_time
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

**Q9: Find how much amount spent by each customer on most popular artists? Write a query to return customer name, artist name and total spent?**

```
WITH artist_cte as
(
select artist.artist_id ,artist.name as artist_name, sum(invoice_line.unit_price*invoice_line.quantity) as
money_spent
FROM invoice_line
JOIN track ON track.track_id = invoice_line.track_id
JOIN album2 ON album2.album_id = track.album_id
JOIN artist ON artist.artist_id = album2.artist_id
```

group by artist.artist\_id ,artist\_name

order by money\_spent desc

limit 1

)

select c.customer\_id , c.first\_name as first\_name, c.last\_name as last\_name

, artist\_cte.artist\_name as artist\_name ,sum(il.unit\_price\*il.quantity) as spent\_money

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 album2 alb ON alb.album\_id = t.album\_id

JOIN artist\_cte ON artist\_cte.artist\_id = alb.artist\_id

group by c.customer\_id ,first\_name, last\_name , artist\_name

order by spent\_money desc

Limit 10 ;

Result Grid   Filter Rows:   Export:   Wrap Cell Content:					
	customer_id	first_name	last_name	artist_name	spent_money
▶	54	Green Day	NULL	AC/DC	35.639999999999986
	21	Various Artists	NULL	AC/DC	21.779999999999994
	53	Spyro Gyra	NULL	AC/DC	21.779999999999994
	49	Edson, DJ Marky & DJ Patife Featuring Fernand...	NULL	AC/DC	19.799999999999997
	54	Steve	Murray	AC/DC	17.82
	1	AC/DC	NULL	AC/DC	15.840000000000002
	24	Marcos Valle	NULL	AC/DC	15.840000000000002
	53	Phil	Hughes	AC/DC	10.89
	21	Kathy	Chase	AC/DC	10.89
	49	Stanisław	Wójcik	AC/DC	9.9

**Q10: Find how much amount spent by each customer on most popular artists? Write a query to return customer name, artist name and total spent?**

WITH RECURSIVE

sales\_per\_country AS(

SELECT COUNT(\*) AS purchases\_per\_genre, customer.country, genre.name, genre.genre\_id

```

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_id

ORDER BY customer.country

),

max_genre_per_country AS (SELECT MAX(purchases_per_genre) AS max_genre_number,          country

                        FROM sales_per_country

GROUP BY country

ORDER BY country)

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;

```

	purchases_per_genre	country	name	genre_id
1		Argentina	Rock	1
18		Australia	Rock	1
6		Austria	Rock	1
5		Belgium	Rock	1
26		Brazil	Rock	1
57		Canada	Rock	1
7		Chile	Rock	1
14		Czech Republic	Rock	1
6		Denmark	Rock	1
6		Finland	Rock	1
26		France	Rock	1
28		Germany	Rock	1
4		Hungary	Rock	1
13		India	Rock	1
2		Ireland	Rock	1
3		Italy	Rock	1
6		Netherlands	Rock	1
2		Norway	Metal	3
14		Poland	Rock	1
23		Portugal	Rock	1
4		Spain	Metal	3
5		Sweden	Rock	1
47		United Kingdom	Rock	1

**Q11: 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 RECURSIVE

customer\_with\_country AS

(

SELECT customer.customer\_id,first\_name,last\_name,billing\_country,SUM(total) AS total\_spending

FROM invoice

JOIN customer ON customer.customer\_id = invoice.customer\_id

GROUP BY 1,2,3,4

ORDER BY 2,3 DESC

),

country\_max\_spending AS

(

SELECT billing\_country,MAX(total\_spending) AS max\_spending

FROM customer\_with\_country

GROUP BY billing\_country)

SELECT cc.billing\_country, cc.total\_spending, cc.first\_name, cc.last\_name, cc.customer\_id

FROM customer\_with\_country cc

JOIN country\_max\_spending ms

ON cc.billing\_country = ms.billing\_country

WHERE cc.total\_spending = ms.max\_spending

ORDER BY 1;



Result Grid					
Filter Rows:		Export:		Wrap Cell Content:	
	billing_country	total_spending	first_name	last_name	customer_id
▶	Argentina	79.19999999999999	Gonzaguinha	NULL	56
	Australia	162.35999999999999	David Coverdale	NULL	55
	Austria	138.6	Apocalyptica	NULL	7
	Belgium	120.77999999999999	Audioslave	NULL	8
	Brazil	217.79999999999995	AC/DC	NULL	1
	Canada	199.98000000000002	Aerosmith	NULL	3
	Chile	194.04000000000002	Os Mutantes	NULL	57
	Czech Republic	289.08000000000004	Alice In Chains	NULL	5
	Denmark	75.24	BackBeat	NULL	9
	Finland	158.39999999999998	Kid Abelha	NULL	44
	France	199.98	Milton Nascimento	NULL	42
	Germany	188.10000000000002	Ed Motta	NULL	37
	Hungary	156.41999999999996	Sandra De Sã	NULL	45
	India	223.73999999999995	Deep Purple	NULL	58
	Ireland	229.68000000000006	Jorge Ben	NULL	46
	Italy	100.97999999999999	Hermeto Pascoal	NULL	47
	Netherlands	130.67999999999998	Barão Vermelho	NULL	48
	Norway	144.54	Alanis Morissette	NULL	4
	Poland	152.45999999999998	Edson, DJ Mark...	NULL	49
	Portugal	205.91999999999996	Nando Reis	NULL	34
	Spain	196.01999999999998	Metallica	NULL	50
	Sweden	150.47999999999996	Queen	NULL	51
	United Kingdom	196.02	Spyro Gyra	NULL	53