



Beatpulse

Beat Pulse: MySQL-
Powered Insights for
Music Market
Success

SQL

BY - PRATHMESH S. POPHALE

Beatpulse



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Introduction: Overview of the project and its goals

“Beat Pulse: MySQL-Powered Insights for Music Market Success” aims to help music company make data-driven decisions by analyzing key metrics such as sales, streaming numbers, and customer demographics using MySQL. By leveraging advanced data analysis techniques, we can provide insights into which artists, albums, and genres are performing well, as well as identify potential areas for growth and improvement. Our goal is to empower music companies to make informed decisions that will help them stay competitive in an ever-changing industry, using the power and flexibility of MySQL to manage and analyze their data.”



The dataset includes information such as the song title, artist name, album name, release date, customers details, and various features.

Employee ID																		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
employee_id	last_name	first_name	job_id	reports_to	levels	birthdate	hire_date	expiry_date	city	state	country	postal_code	phone	fax	email	photo	address	notes
1	Andrew	Andrew	General Manager	1	1	1950-09-08	1980-03-15		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	andrew@shawcorporate.com		100 Broad Street, London, UK	
2	J. Deane	Nancy	Sales Manager	1	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	nancy@shawcorporate.com		100 Broad Street, London, UK	
3	P. Jackson	Steve	Sales Support Agent	2	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	steve@shawcorporate.com		100 Broad Street, London, UK	
4	J. Deane	Steve	Sales Support Agent	2	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	steve@shawcorporate.com		100 Broad Street, London, UK	
5	J. Deane	Steve	Sales Support Agent	2	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	steve@shawcorporate.com		100 Broad Street, London, UK	
6	M. Mitchell	IT Manager	IT Manager	3	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	it@shawcorporate.com		100 Broad Street, London, UK	
7	J. Deane	IT Staff	IT Staff	4	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	it@shawcorporate.com		100 Broad Street, London, UK	
8	C. Kahan	Michael	IT Staff	4	1	1968-03-24	1987-07-01		London	UK	United Kingdom	W1A 0AX	020 7171 2244	020 7171 2258	it@shawcorporate.com		100 Broad Street, London, UK	
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Data analysis:

To analyze the data to identify patterns, trends, and insights. This involved using MySQL to query the data and generate visualizations of the results.

One of the primary tools used in the project was MySQL Workbench, a popular database management tool that provides a range of features for creating, managing, and querying databases.

In the "Beat Pulse: MySQL-Powered Insights for Music Market Success" project, several key query questions were developed to guide the data analysis process. These questions were designed to help us identify trends and patterns in the data, and to gain insights into the music industry.



Tasks & Solving Approach:

1. Who is the senior most employee based on job title?

Q.1. Who is the senior most employee based on job title?

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

Result -

	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) 428-9482



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 track.name As Name , milliseconds As Length from track
where milliseconds > (SELECT AVG(milliseconds) FROM track)
order by milliseconds Desc;
```

	Name	Length
▶	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

track 82 ×



Which countries have the most Invoices?

Q.2. Which countries have the most Invoices?

```
select count(*) As Total_Invoices , billing_country from invoice
group by billing_country
order by total_invoices desc;
```

	Total_Invoices	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
	10	Denmark
	10	Australia
	10	Hungary
	10	Sweden
	10	Netherlands



What are top 3 values of total invoice?

Q.3. What are top 3 values of total invoice?

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

	total
▶	23.759999999999998
	19.8
	19.8

4. # Q.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

```
select billing_city As City , sum(total) As Total_Invoicess from invoice
group by billing_city
order by Total_Invoicess desc
limit 1;
```

	City	Total_Invoicess
▶	Prague	273.240000000000007



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 customer.customer_id, MAX(first_name) AS first_name, last_name, SUM(total) AS total_spending
FROM customer
JOIN invoice ON customer.customer_id = invoice.customer_id
GROUP BY customer.customer_id, last_name
ORDER BY total_spending DESC
LIMIT 1;
```

	customer_id	first_name	last_name	total_spending
▶	5	František	Wichterlová	144.54000000000002



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 c.email, c.first_name , c.last_name,g.name as Genre from customer c
join invoice i on c.customer_id = i.customer_id
join invoice_line il on i.invoice_id = il.invoice_id
join track t on il.track_id = t.track_id
join genre g on t.genre_id = g.genre_id
where g.name = "Rock"
order by email;
```

	email	first_name	last_name	Genre
▶	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
	emma_jones@hotmail.com	Emma	Jones	Rock
	enrique_munoz@yahoo.es	Enrique	Muñoz	Rock
	fernadaramos4@uol.com.br	Fernanda	Ramos	Rock



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 ar.name AS Artist, COUNT(*) AS TrackCount FROM artist ar
JOIN album2 al ON ar.artist_id = al.artist_id
JOIN track t ON al.album_id = t.album_id
JOIN genre g ON t.genre_id = g.genre_id
WHERE g.name = 'Rock'
GROUP BY ar.name
ORDER BY TrackCount DESC
LIMIT 10;
```

	Artist	TrackCount
▶	AC/DC	18
	Aerosmith	15
	Audioslave	14
	Led Zeppelin	14
	Alanis Morissette	13
	Alice In Chains	12
	Frank Zappa & Captain Beefheart	9
	Accept	4



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

```
SELECT customer.first_name AS Customer_FName, customer.last_name AS Customer_Name, artist.name AS Artist_Name, SUM(invoice.total) AS Total_Spent
FROM customer
JOIN invoice ON customer.customer_id = invoice.customer_id
JOIN invoice_line ON invoice.invoice_id = invoice_line.invoice_id
JOIN track ON invoice_line.track_id = track.track_id
JOIN album2 ON track.album_id = album2.album_id
JOIN artist ON album2.artist_id = artist.artist_id
GROUP BY Customer_FName, Customer_Name, Artist_Name
ORDER BY Total_Spent DESC;
```

	Customer_FName	Customer_Name	Artist_Name	Total_Spent
▶	Jennifer	Peterson	Aerosmith	222.74999999999994
	Mark	Taylor	Aerosmith	222.74999999999994
	Fernanda	Ramos	Antônio Carlos Jobim	194.04000000000002
	Leonie	Köhler	Audioslave	194.04000000000002
	Edward	Francis	Alanis Morissette	167.31000000000003
	Emma	Jones	Alanis Morissette	167.31000000000003
	Steve	Murray	AC/DC	162.36
	João	Fernandes	Alanis Morissette	144.53999999999996
	Victor	Stevens	Alice In Chains	142.55999999999997
	Stanisław	Wójcik	Buddy Guy	119.79
	Phil	Hughes	AC/DC	108.90000000000002
	Kathy	Chase	AC/DC	93.06000000000002
	Stanisław	Wójcik	AC/DC	89.09999999999998
	François	Tremblay	Apocalyptica	63.36000000000001



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

Using Common Table Expression (CTE)

```
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 2,3,4
    ORDER BY 2 ASC, 1 DESC
)
SELECT * FROM popular_genre WHERE RowNo <= 1;
```

	purchases	country	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
	3	Italy	Rock	1	1
	6	Netherlands	Rock	1	1
	2	Norway	Metal	3	1

Result 85 ×



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 billing_country AS Country, customer.customer_id, first_name, last_name, 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 1,2,3,4  
    ORDER BY 4 ASC,5 DESC)  
SELECT * FROM Customer_with_country WHERE RowNo <= 1
```

	Country	customer_id	first_name	last_name	total_spending	RowNo
▶	Portugal	34	João	Fernandes	102.96000000000001	1
	France	42	Wyatt	Girard	99.99	1
	Brazil	1	Luís	Gonçalves	108.89999999999998	1
	Austria	7	Astrid	Gruber	69.3	1
	Argentina	56	Diego	Gutiérrez	39.6	1
	Finland	44	Terhi	Hämäläinen	79.2	1
	Norway	4	Bjørn	Hansen	72.27000000000001	1
	United Kingdom	53	Phil	Hughes	98.01	1
	Sweden	51	Joakim	Johansson	75.24	1
	Hungary	45	Ladislav	Kovács	78.21	1
	Italy	47	Lucas	Mancini	50.49	1
	Spain	50	Enrique	Muñoz	98.01	1
	Denmark	9	Kara	Nielsen	37.61999999999999	1
	Ireland	46	Hugh	O'Reilly	114.83999999999997	1
	India	58	Manoj	Pareek	111.86999999999999	1

Result 86 x



Some of the key insights that we gained from our analysis included:

1. The music industry is highly competitive, with a small number of artists and labels dominating the market.
2. Album sales are an important indicator of success in the music industry, but other factors such as genre popularity and streaming data are also important.
3. The popularity of different genres of music can vary significantly over time, and understanding these trends is important for predicting future success.
4. Successful artists and labels tend to have a consistent track record of success over time, suggesting that long-term planning and strategy are important in the music industry.



Conclusion

The "Beat Pulse: MySQL-Powered Insights for Music Market Success" project provided a valuable opportunity to explore the music industry and gain insights into the factors that contribute to success in the industry. Through a structured approach to developing research questions and analyzing the data, we were able to identify key trends and patterns in the data, and to gain a deep understanding of the complex dynamics of the music industry.