

The Art Music

This presentation will explore an in-depth analysis of an online music store's data to derive meaningful business insights.

STORE ANALYSIS



BASED ON A FICTIONAL DATABASE



Music Store Analysis



AN IN-DEPTH ANALYSIS

- This project analyzes music store sales data using SQL (MySQL).
- We extract insights related to customer behavior, revenue trends, and genre popularity.
- The analysis helps in understanding purchasing patterns, top customers, and business optimization.



🎵 About The Analysis

- **Basic:** Focuses on customer insights, invoice trends, and identifying top spenders and cities.
- **Intermediate:** Explores listener preferences, artist contributions, and track characteristics.
- **Advanced:** Dives into spending patterns across customers, countries, genres, and artists.





Basic Queries

- Who is the senior-most employee based on job title?
- Which countries have the most invoices?
- What are the top 3 values of total invoice?
- Which city has the best customers? Find the city with the highest total invoice value.
- Who is the best customer? Identify the customer who has spent the most overall.



01 Who is the senior-most employee based on job title?

FIND THE EMPLOYEE WITH THE HIGHEST JOB LEVEL IN THE COMPANY.

```
SELECT * FROM employee  
ORDER BY levels DESC  
LIMIT 1;
```

02 Which country has the most invoices?

DETERMINE THE COUNTRY FROM WHICH THE MOST INVOICES WERE GENERATED.

```
SELECT billing_country, count(invoice_id) AS number_of_invoices  
FROM invoice  
GROUP BY invoice.billing_country  
ORDER BY number_of_invoices DESC  
LIMIT 1;
```



03 What are the top 3 values of total invoice?

LIST THE THREE HIGHEST INDIVIDUAL INVOICE TOTALS IN THE DATASET.

```
SELECT invoice.total AS total_invoice FROM invoice  
ORDER BY invoice.total DESC  
LIMIT 3;
```

04 Which city has the best customers?

WE PLAN TO HOST A MUSIC FESTIVAL IN THE CITY WHERE WE EARNED THE MOST REVENUE. WRITE A QUERY TO RETURN THE CITY WITH THE HIGHEST INVOICE TOTAL ALONG WITH THE TOTAL AMOUNT.

```
SELECT invoice.billing_city AS city, ROUND(SUM(total),2) AS invoice_total  
FROM invoice  
GROUP BY city  
ORDER BY invoice_total DESC  
LIMIT 1;
```



05 Who is the best customer?

IDENTIFY THE CUSTOMER WHO HAS SPENT THE MOST OVERALL. RETURN THEIR NAME AND THE TOTAL AMOUNT THEY SPENT.



```
SELECT customer.customer_id, customer.first_name, customer.last_name,  
       ROUND(SUM(invoice.total),2) AS total_invoice  
FROM customer JOIN invoice  
ON customer.customer_id = invoice.customer_id  
GROUP BY customer.customer_id, customer.first_name, customer.last_name  
ORDER BY total_invoice DESC  
LIMIT 1;
```



Intermediate Queries

- **Rock Music Listeners:** Return email, name & genre of Rock listeners (A-Z by email).
- **Top Rock Artists:** Get the top 10 artists by number of Rock tracks.
- **Songs Longer than Average:** Return track names with duration > average length. Include milliseconds and order by longest first.



01

List of Rock music listeners

RETURN THE EMAIL, FIRST NAME, LAST NAME, AND GENRE OF ALL CUSTOMERS WHO LISTEN TO ROCK MUSIC, ORDERED ALPHABETICALLY BY EMAIL.



```
SELECT DISTINCT customer.customer_id, customer.first_name, customer.last_name, customer.email
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 genre
ON track.genre_id = genre.genre_id
WHERE genre.name LIKE "ROCK"
ORDER BY customer.email ASC;
```

02 Top Rock music artists

FIND THE TOP 10 ARTISTS WITH THE MOST ROCK TRACKS. RETURN ARTIST NAMES AND THEIR TOTAL TRACK COUNT.

```
SELECT artist.artist_id, artist.name, COUNT(artist.artist_id) AS number_of_songs
FROM track JOIN album
ON track.album_id = album.album_id
JOIN artist
ON album.artist_id = artist.artist_id
JOIN genre
ON genre.genre_id = track.genre_id
WHERE genre.name LIKE "ROCK"
GROUP BY artist.name, artist.artist_id
ORDER BY number_of_songs DESC
LIMIT 10;
```



03 Who is the senior-most employee based on job title?

FIND THE EMPLOYEE WITH THE HIGHEST JOB LEVEL IN THE COMPANY.

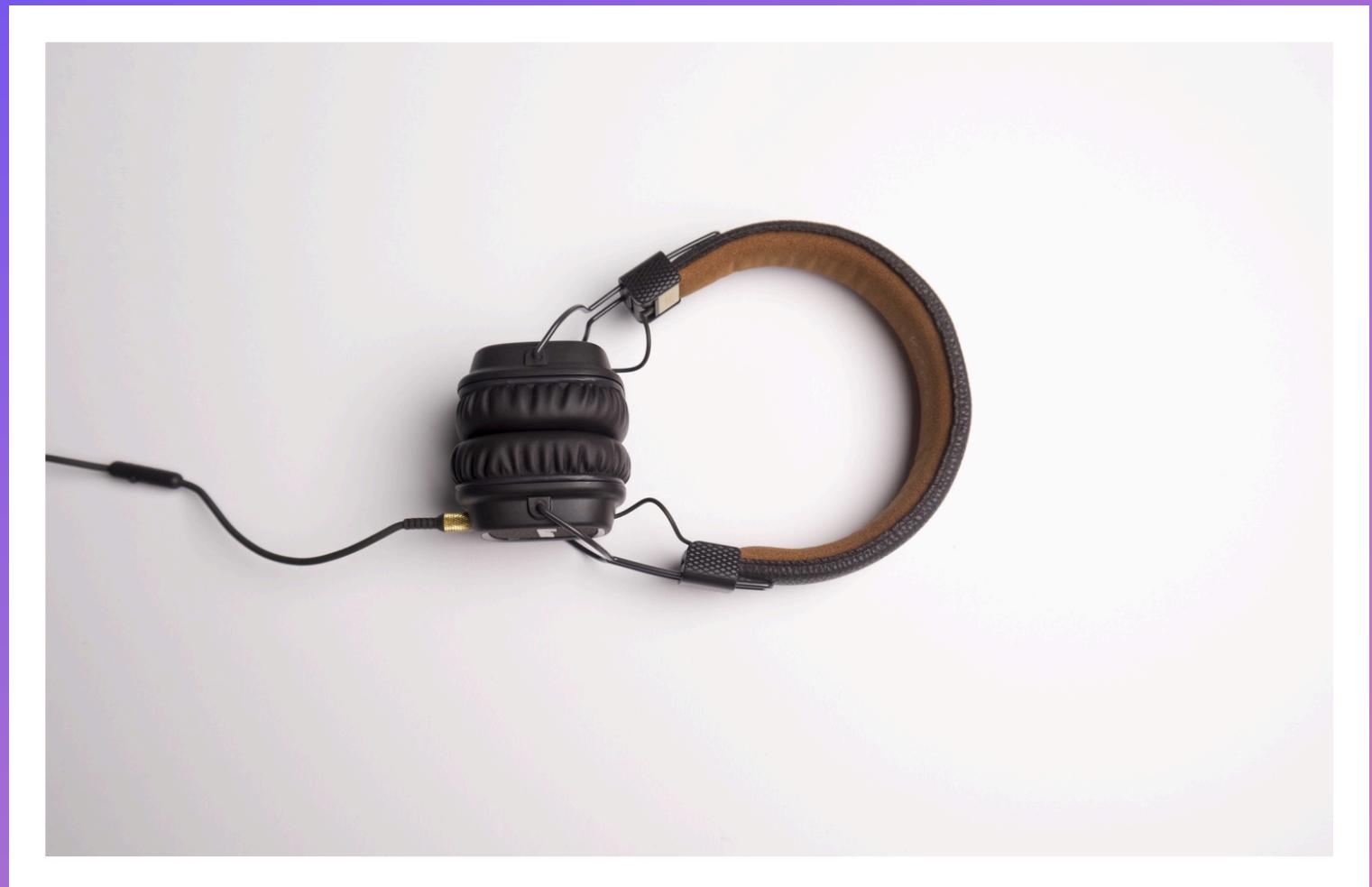


```
SELECT track.name, track.milliseconds  
FROM track  
WHERE track(milliseconds) > (SELECT avg(track(milliseconds)) FROM track)  
ORDER BY track(milliseconds) DESC;
```



🎵 Advance Queries

- **Customer Spending on Artists:** Return customer name, artist name & total amount spent.
- **Most Popular Genre by Country:** Return top genre(s) per country based on number of purchases. Include all genres in case of ties.
- **Top Customer by Country:** Return each country's top-spending customer(s) and total amount. Include ties if top spend is shared.



01

Customer Spending on Best-Selling Artist

FOR THE TOP-SELLING ARTIST, CALCULATE HOW MUCH EACH CUSTOMER HAS SPENT. RETURN THE CUSTOMER'S FULL NAME, ARTIST NAME, AND THE TOTAL AMOUNT SPENT.



```
WITH best_selling_artist AS(
    SELECT
        artist.artist_id AS artist_id, artist.name AS artist_name,
        SUM(invoice_line.unit_price * invoice_line.quantity) AS total_spent
    FROM invoice_line JOIN track
    ON invoice_line.track_id = track.track_id
    JOIN album
    ON track.album_id = album.album_id
    JOIN artist
    ON album.artist_id = artist.artist_id
    GROUP BY artist_id, artist_name
    ORDER BY total_spent DESC
    LIMIT 1)

SELECT CONCAT(c.first_name, " ", c.last_name) AS c_name , bsa.artist_name, SUM(il.unit_price * il.quantity) AS total_spent
FROM invoice i
JOIN customer c ON i.customer_id = c.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_artist bsa ON bsa.artist_id = alb.artist_id
GROUP BY c_name, bsa.artist_name
ORDER BY total_spent;
```



02 Most Popular Genre by Country

DETERMINE THE MOST PURCHASED GENRE IN EACH COUNTRY. RETURN THE COUNTRY NAME AND THE TOP GENRE(S). IF MULTIPLE GENRES SHARE THE TOP SPOT, INCLUDE ALL.

```
WITH
GenreSales AS
(
    SELECT customer.country, genre.name AS genre_name, SUM(invoice_line.quantity) AS total_purchases
    FROM invoice
    JOIN customer
    ON invoice.customer_id = customer.customer_id
    JOIN invoice_line
    ON invoice.invoice_id = invoice_line.invoice_id
    JOIN track
    ON invoice_line.track_id = track.track_id
    JOIN genre
    ON track.genre_id = genre.genre_id
    GROUP BY customer.country, genre_name
),
RankedGenres AS
(
    SELECT country, genre_name, total_purchases, RANK() OVER (PARTITION BY country ORDER BY total_purchases DESC) AS rnk
    FROM GenreSales
)
SELECT country, genre_name, total_purchases
FROM RankedGenres
WHERE rnk = 1
ORDER BY country;
```

03 Top customer by country

DETERMINE THE CUSTOMER WHO SPENT THE MOST IN EACH COUNTRY. IF THERE IS A TIE, RETURN ALL TOP SPENDERS FOR THAT COUNTRY ALONG WITH THE AMOUNT SPENT.

```
WITH
CustomerSpending AS
(
SELECT
customer.country, customer.customer_id,
CONCAT(customer.first_name, ' ', customer.last_name) AS customer_name,
SUM(invoice.total) AS total_spent
FROM customer JOIN invoice
ON customer.customer_id = invoice.customer_id
GROUP BY customer.country, customer.customer_id, customer_name
),
RankedCustomers AS
(
SELECT country, customer_name, total_spent,
RANK() OVER (PARTITION BY country ORDER BY total_spent DESC) AS rnk
FROM CustomerSpending
)
SELECT country, customer_name, total_spent
FROM RankedCustomers
WHERE rnk = 1
ORDER BY country;
```



🎵 Overall Learnings

- The Senior-most employee is Madan Mohan, titled Senior General Manager, highlighting a top-down hierarchy structure.
- The USA leads with the highest number of invoices (262), indicating it as the most active market.
- Prague generated the highest invoice total (\$546.48), hinting at high-value customers or pricing strategy.

- František Wichterlová (Customer ID: 5) is the top-spending customer, with a total invoice amount of \$578.16.
- Led Zeppelin, U2, and Deep Purple dominate with the most number of songs in the database (912, 896, 736 respectively).
- The longest tracks by milliseconds (duration) are dramatic, cinematic pieces, possibly from movie/series soundtracks like Battlestar Galactica, reflecting diverse media content in the catalog.
- Many lengthy tracks fall under genres like rock, progressive, or live albums.





Conclusion



- Customer-Centric Discovery: Uncovered top customers, high-performing cities, and countries with maximum invoices to inform targeted marketing and loyalty strategies.
- Artist & Content Strategy: Revealed most popular artists and longest tracks to guide catalog curation, promotions, and personalized content delivery.
- Business Decision Support: Insights support smarter decisions in marketing, inventory planning, and content licensing based on real listening and purchase patterns.
- SQL-Powered Intelligence: Showcased how SQL can efficiently extract meaningful, actionable insights from structured music store data.
- Scalable Methodology: Approach can be adapted across industries for analyzing customer behavior, optimizing products, and improving operations.



Thank You for Tuning In!

We appreciate you joining us on this journey through the world of music. Music tells a story. So does data. Thank you for letting us show you how they come together to create harmony in business.

DIVYANSH KARTIKEY KAUSHAL

