**ITUNES INSIGHTS USING SQL AND POWER BI**

**Objective:**

The objective of this project is to develop an interactive Power BI dashboard based on the iTunes music store database. The dashboard delivers valuable insights into music sales trends, customer behaviour, media format distribution, and genre performance. This empowers decision-makers to assess revenue patterns, customer engagement, and inventory optimization using data visualizations, KPIs, and interactive slicers.

GitHub Link: <https://github.com/Niketanr/DataAnalytics-Project>

**Dataset Summary:**

The dataset originates from a normalized SQL-based music store schema that includes multiple interlinked tables such as:

* Customer: Details of music store customers.
* Album: Details of name of the album with its id
* Invoice / Invoice Line: Transaction-level purchase information.
* Track: Metadata of music tracks including pricing.
* Genre: Music genre classification.
* Media Type: Format in which tracks are stored or sold.
* Track: Details of the track such as name, id, composer etc..
* Artist / Playlist / Playlist Track: Artist details and curated playlists.

**KPI Cards:**

The dashboard includes three main KPIs summarizing the dataset's business performance:

* Total Revenue:4.71K
* Total Customers: 59
* Total Tracks: 3503

These figures offer a high-level view of the digital store’s commercial scale.

**Visual Analytics Summary:**

1. Top 10 Genres by Revenue:

* Rock and Metal dominate sales, generating 2.6K and 2K respectively.
* Niche genres such as Jazz, Pop, and Easy Listening contribute minimally.

2. Total Revenue by Year:

* Highest revenue was in 2019 (1222), followed by 2017 (1202).
* There was a decline in 2020 (1139) indicating a possible market contraction or shift.

3. Total Revenue by Media Type:

* MPEG Audio File accounts for a dominant 89.53% of total revenue.
* Protected AAC and Purchased AAC formats together contribute less than 10%.

4. Top 10 Customers by Invoice Total:

* Wright, Heather spent the most (145).
* Significant variation observed across customer spending behavior.

5. Track Revenue by Name:

* “War Pigs” leads with 33 units, followed by tracks like “Are You Experienced?” and “Changes”.

**Slicers and Interactivity:**

The dashboard includes multiple slicers allowing dynamic filtering of data:

* Slicer to view Top 10 Revenue – Enables focused analysis by revenue.
* Top 10 Revenue by Country – Compares top-performing countries by total billing.
* Top 10 Artist by Tracks – Filters track data by artist popularity.

These slicers allow users to customize their exploration of revenue, genres, countries, and artists with ease

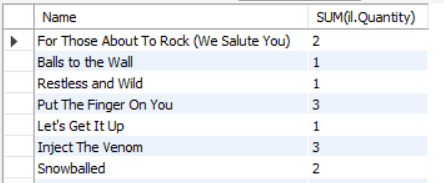
**SQL Logic Highlights**

select t.Name, SUM(il.Quantity)

from invoice\_line il

join track t on il.Track\_id = t.Track\_id

group by t.Track\_id, t.Name;

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**#Top selling Genres**

SELECT g.name AS genre, SUM(il.unit\_price \* il.quantity) AS revenue

FROM invoice\_line il

JOIN track t ON il.track\_id = t.track\_id

JOIN genre g ON t.genre\_id = g.genre\_id

GROUP BY g.genre\_id, g.name

ORDER BY revenue DESC

LIMIT 5;

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**#Most active customers by purchase**

SELECT c.first\_name, c.last\_name, COUNT(i.invoice\_id) AS total\_purchases, SUM(i.total) AS total\_spent

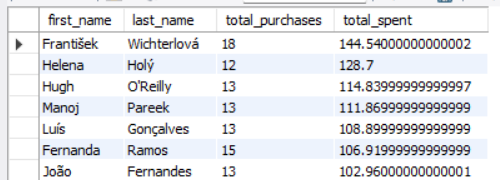
FROM customer c

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

GROUP BY c.customer\_id, c.first\_name, c.last\_name

ORDER BY total\_spent DESC

**LIMIT 10;**

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**#Monthly sales trend**

SELECT DATE\_FORMAT(STR\_TO\_DATE(invoice\_date, '%d-%m-%Y'), '%Y-%m') AS month,

SUM(total) AS monthly\_revenue

FROM invoice

GROUP BY DATE\_FORMAT(STR\_TO\_DATE(invoice\_date, '%d-%m-%Y'), '%Y-%m')

ORDER BY month;

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**#Employees handling more customer**

SELECT e.employee\_id, e.first\_name, e.last\_name, COUNT(c.customer\_id) AS customers\_handled

FROM employee e

JOIN customer c ON e.employee\_id = c.support\_rep\_id

GROUP BY e.employee\_id, e.first\_name, e.last\_name

ORDER BY customers\_handled DESC;

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**#Top tracks by revenue**

SELECT t.track\_id, t.name, SUM(il.unit\_price \* il.quantity) AS revenue

FROM invoice\_line il

JOIN track t ON il.track\_id = t.track\_id

GROUP BY t.track\_id, t.name

ORDER BY revenue DESC

LIMIT 10;

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**#Track count in each playlist**

SELECT p.playlist\_id, p.name AS playlist\_name, COUNT(pt.track\_id) AS track\_count

FROM playlist p

JOIN playlist\_track pt ON p.playlist\_id = pt.playlist\_id

GROUP BY p.playlist\_id, p.name

ORDER BY track\_count DESC;

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**#Media type usage distribution**

SELECT m.media\_type\_id, m.name AS media\_type, COUNT(t.track\_id) AS track\_count

FROM media\_type m

JOIN track t ON m.media\_type\_id = t.media\_type\_id

GROUP BY m.media\_type\_id, m.name

ORDER BY track\_count DESC;

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**#country wise revenue summary**

SELECT i.billing\_country,

COUNT(i.invoice\_id) AS total\_orders,

ROUND(SUM(i.total), 2) AS total\_revenue

FROM invoice i

GROUP BY i.billing\_country

ORDER BY total\_revenue DESC;

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**Conclusion:**

The iTunes Music Store Dashboard provides a comprehensive analytical view of music sales patterns, emphasizing genre popularity, customer purchasing behavior, and media format trends. MPEG audio files dominate the store’s sales, with Rock and Metal being the top-selling genres. A few customers contribute disproportionately to revenue, and year-over-year revenue insights help track business performance.

This dashboard supports decision-making for marketing, inventory planning, and customer relationship strategies. It also demonstrates the utility of combining SQL data extraction with Power BI visualization to uncover business intelligence from transactional music store data.

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