Music Store Data Analysis

This document presents a detailed analysis of a music store dataset using T-SQL(SQL Server). The analysis aims to provide valuable insights into various aspects of the business, such as employee tenure, sales performance across different regions, revenue distribution, customer spending behavior, and opportunities for strategic decision-making and business growth.

Introduction to the Dataset

The music store dataset comprises a collection of tables that provide comprehensive information about the business's operations. These tables include details on employee, customer, invoice, invoice_line, track, album, artist, playlist_track, playlist, media_type and genre. By analyzing this dataset, we can gain valuable insights into customer demographics, product popularity, sales performance, and other key business metrics.

Questions and Queries

This section outlines a series of questions that we seek to answer through our data analysis. Each question is accompanied by the corresponding SQL query used to retrieve the necessary data. The queries are designed to extract specific information related to customer behavior, sales trends, product performance, and other key aspects of the music store's business. By examining the results of these queries, we can gain a deeper understanding of the data and identify valuable insights.

Questions – Easy

Who is the most senior employee by job title?

Query: This query identifies the employee holding the highest-ranking job title.

```
SELECT TOP(1) Title, CONCAT(Fname, ' ', Lname) AS [Full_Name]

FROM Employee

ORDER BY Levels DESC
```

Insights: This reveals the organization's highest level of employee experience and expertise.

Questions – Easy

Which countries have the most Invoices?

Query: Determine countries with the highest number of invoices.

```
SELECT Billing_country, COUNT(Customer_id) AS [Number_of_Customers]
FROM Invoice
GROUP BY Billing_country
ORDER BY [Number_of_Customers] DESC
```

Insights: Identify top performing markets for the music store.

Questions – Easy

What are top 3 values of total invoice?

Query: Find the top 3 invoice values.

```
SELECT TOP(3) Total
FROM Invoice
ORDER BY Total DESC
```

Insights: Highlight the highest revenue-generating transactions.

Questions – Easy

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

Query: Identify the city with the highest sum of invoice totals.

```
SELECT TOP(1) Billing_city, SUM(Total) AS [Invoice_Total]
FROM Invoice
GROUP BY Billing_city
ORDER BY [Invoice_Total] DESC
```

Insights: Target city for promotional events based on customer spending.

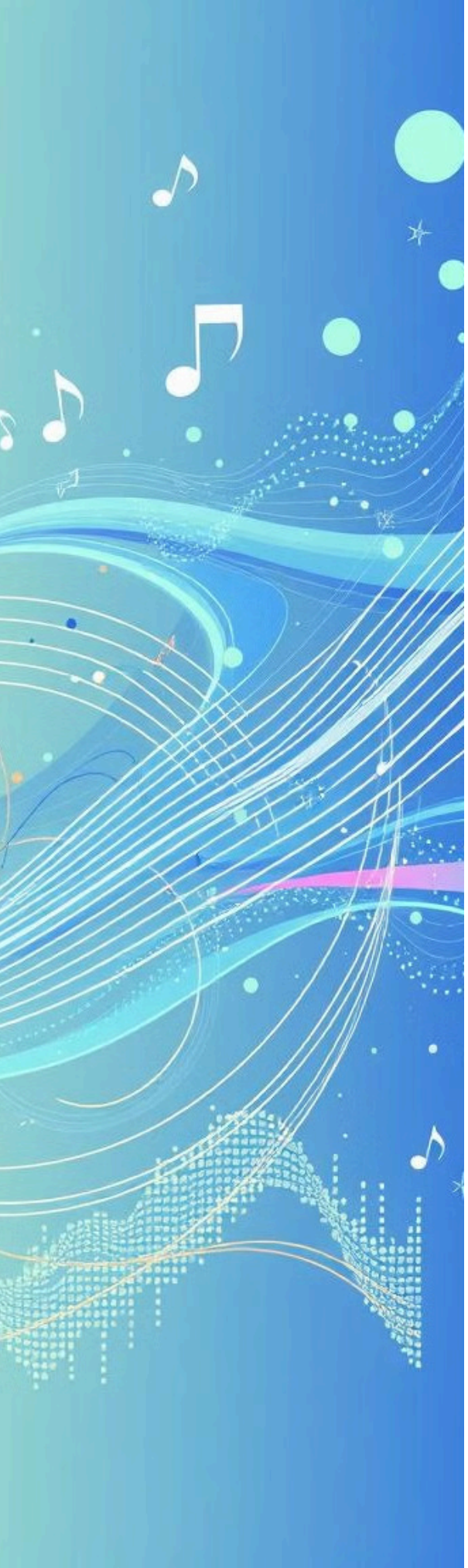
Questions – Easy

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.

Query: Determine the customer who has spent the most money.

```
SELECT TOP(1) C.Customer_id, CONCAT(C.Fname, ' ',C.Lname) AS [Best_Customer],
SUM(Total) AS [Total_Spending]

FROM Customer C INNER JOIN Invoice I

ON C.Customer_id = I.Customer_id

GROUP BY C.Customer_id, CONCAT(C.Fname, ' ',C.Lname)

ORDER BY [Total_Spending] DESC
```

Insights: Recognize high-value customers for tailored strategies.



Questions – Intermediate

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.

Query: Retrieve email, first name, last name, & genre of Rock Music listeners.

```
SELECT DISTINCT C.Email, C.Fname, C.Lname, G.Genre_name
FROM Customer C INNER JOIN Invoice I
ON C.Customer_id = I.Customer_id
INNER JOIN Invoice_Line IL
ON I.Invoice_id = IL.Invoice_id
INNER JOIN Track T
ON T.Track_id = IL.Track_id
INNER JOIN Genre G
ON G.Genre_id = T.Genre_id AND G.Genre_name = 'Rock'
ORDER BY C.Email ASC
```

Insights: Understand the Rock Music listener demographics

Questions – Intermediate

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.

Query: Identify the top 10 rock bands with the highest track count.

```
SELECT TOP(10) A.Artist_id, A.Artist_name, COUNT(A.Artist_id) AS Number_of_Tracks
FROM Track T INNER JOIN Album Alb
ON Alb.Album_id = T.Album_id
INNER JOIN Artist A
ON A.Artist_id = Alb.Artist_id
INNER JOIN Genre G
ON G.Genre_id = T.Genre_id AND G.Genre_name = 'Rock'
GROUP BY A.Artist_id, A.Artist_name
ORDER BY Number_of_Tracks DESC
```

Insights: Recognize prolific rock music artists.

Questions – Intermediate

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 length with the longest songs listed first.

Query: Retrieve track names with song length longer than average.

```
SELECT Track_name, MilliSeconds
FROM Track
WHERE MilliSeconds > (SELECT AVG(MilliSeconds) AS Avg_Track_Length FROM Track)
ORDER BY MilliSeconds DESC
```

Insights: Highlight tracks with extended durations.

Questions – Advanced

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

Query: Calculate total amount spent by each customer on artists.

```
SELECT C.Customer_id, C.Fname, A.Artist_name,
SUM(IL.Unit_price*IL.Quantity) AS [Total_Spending]

FROM Customer C INNER JOIN Invoice I

ON C.Customer_id = I.Customer_id

INNER JOIN Invoice_Line IL

ON I.Invoice_id = IL.Invoice_id

INNER JOIN Track T

ON T.Track_id = IL.Track_id

INNER JOIN Album Alb

ON Alb.Album_id = T.Album_id

INNER JOIN Artist A

ON A.Artist_id = ALB.Artist_id

GROUP BY C.Customer_id, C.Fname, A.Artist_name

ORDER BY [Total_Spending] DESC
```

Insights: Analyze customer preferences and spending habits.

Questions – Advanced

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.

Query: Determine the most popular music genre for each country.

```
SELECT *

FROM ( SELECT C.Country, COUNT(IL.Quantity) AS [Total_Sales], G.Genre_id,
G.Genre_name, ROW_NUMBER() OVER(PARTITION BY C.Country ORDER BY
COUNT(IL.Quantity) DESC) AS RN FROM Customer C INNER JOIN Invoice I ON
C.Customer_id = I.Customer_id

INNER JOIN Invoice_Line IL ON I.Invoice_id = IL.Invoice_id

INNER JOIN Track T ON T.Track_id = IL.Track_id

INNER JOIN Genre G ON G.Genre_id = T.Genre_id

GROUP BY C.Country, G.Genre_id, G.Genre_name) AS Temp

WHERE RN = 1
```

Insights: Identify genre preferences across different regions.

Questions – Advanced

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 customers and how much they spend. For countries where the top amount spent is shared, provide all customers who spent this amount.

Query: Identify the top customer spending for each country.

```
SELECT *

FROM ( SELECT C.Customer_id, C.Fname, C.Lname, I.Billing_country, SUM(unknown link) AS [Total_Spending], ROW_NUMBER() OVER(PARTITION BY I.Billing_country ORDER BY SUM(unknown link) DESC) AS RN

FROM Customer C INNER JOIN Invoice I

ON C.Customer_id = I.Customer_id

GROUP BY C.Customer_id,C.Fname, C.Lname, I.Billing_country) AS Temp

WHERE RN = 1
```

Insights: Recognize high-spending customers in different countries.

Data Analysis and Insights

- Senior Most Employee based on Job Title is Mohan Madan and his level is 7.
- Country with the Most Invoices is USA with the number of customers is 131.
- The top 3 customers with their total invoice values are (Wyatt Girard: 23.76), (François Tremblay: 19,89) and (Aaron Mitchell: 19.889).
- City with the Best Customers is Prague with Invoice Total 273,24.
- Best Customer based on Spending František Wichterlová with Total Spending 144,54.
- Top one Rock Bands by Track Count is Led Zeppelin with number of tracks is 114.
- Longest Song in the Dataset is Occupation / Precipice with number of Milliseconds 5286953.
- The highest customer spent on artists Hugh O'Reilly and the name of artist is Queen with Total Spending is 27,72.
- Popular Music Genres by Country is Rock.

Thank You

Thank you for taking the time to view my project.

I hope you learned something new from this.

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