PROJECT REPORT

Digital Music Store Analysis & Visualization

1. Project Overview

This Project performs a comprehensive analysis of a digital music store's database. By applying **SQL** for complex data extraction and **Power BI** for Interactive visualization, I transformed raw data into actionable business insights. The goal was to identify top-performing regions, loyal customers, organizational hierarchy, and genre-specific trends to drive marketing and operational strategies.

2. Technology Used

- **Languages**: SQL (PostgreSQL)

- **Database Tool**: pgAdmin4 (To "talk" to the database and get specific answers)

- **Visualization Tool**: Power BI (To create the interactive dashboard)

3. Business Questions & SQL Methodology

I wrote optimized SQL Queries to solve specific business problems:

- **Organizational Analysis**: Identified the senior-most employee based on job levels and reporting structure.
- **Geographic Performance**: Determined which countries have the most invoices to pinpoint high-volume markets.
- **Revenue by Location**: Identified the city with the "Best Customers" by calculating the highest sum of total invoice values.
- **Marketing Outreach**: Extracted a list of **Rock Music** listeners (Name and Email) so we can send them special offers.
- **Artist Influence:** identified the top 10 Rock bands based on how many songs they have in our store?

4. Power BI Dashboard Features

The extracted data was imported into Power BI to create a multi-page interactive dashboard. I utilized the following visual elements to tell a complete data-driven story of the business:

- **Summary Cards**: Instant visibility into "Total Revenue", "Average Transaction Value", "Total Global Markets".
- **Geographic Bar and Column Charts**: Visualization of invoice distribution across countries and cities.
- **Genre Analysis (Donut and Pie Charts):** A breakdown of music sales by genre, highlighting the dominance of Rock music.
- **Trend Analysis (Area Chart):** To visually track how the gross revenue for each top artist changed over time.
- **Decomposition Tree**: An interactive visual used to drill down from total revenue into specific genres and individual artists.
- **Table:** To clearly list the most popular music genre for every country and identify the top-spending customer in each nation.
- **Interactive Slicer:** Integrated filters, enabling users to filter the data by specific quarters or top genre.

5. Key Insights

- **Market Leadership**: Identified which countries have the most customers, helping the store decide where to grow their business next.
- **Customer Behavior**: Found that a small percentage of "Best Customers" contribute to a significant portion of revenue. This proves that a rewards program would be a great idea.
- **Content Strategy**: The analysis of the top 10 rock bands gives the store a clear plan for which artists to promote next.

6. Conclusion

This project demonstrates how to turn raw data into smart business decisions. By using **SQL** and **Power BI** together, I created an interactive dashboard that lets anyone explore sales trends and customer habits to see what is really driving the business forward.