

Project : Apple iTunes Music Store Analytics

A detailed data analytics project focused on a digital music store, utilizing SQL and Power BI to uncover valuable insights into customer behavior, identify music preferences, evaluate overall Sales performance and Sales trend.

Project Overview

Apple iTunes maintains a large digital music store with millions of tracks, thousands of customers worldwide, and a network of employees managing sales operations. As the business expands, the leadership team is looking to gain deeper insights into customer behavior, music preferences, and overall sales performance.

As a Data Analyst, I have analyzed the iTunes relational database (data in CSV format) to generate actionable insights that can help improve product offerings, customer targeting and operational efficiency.

My role is to build a complete SQL-based analytical pipeline using the available datasets, which include details about customers, employees, invoices, tracks, albums, artists, genres, playlists and media types.

Business Goals

1. Understand customer behavior and purchasing trends.
 2. Identify the most and least popular music genres, tracks, and artists.
 3. Evaluate sales performance by employees and customer regions.
 4. Analyze revenue trends across time.
 5. Uncover growth opportunities by identifying underutilized content or inactive customers.
-

Key Deliverables

1. **Database Setup**
 - Design a relational schema using the provided CSVs.
 - Create SQL tables and import data.
 - Establish relationships using primary and foreign keys.

2. Exploratory Analysis

- Write SQL queries to summarize and visualize customer, music, and sales data.
- Track revenue trends, customer engagement, and playlist popularity.

3. Advanced Analytics

- Use window functions, subqueries, and CTEs to generate deeper insights.
- Segment users and rank products by popularity and sales performance.

4. Business Dashboards (Optional)

- Create visual dashboards using Power BI.
- Track key performance indicators (KPIs) such as monthly revenue, top customers, and most purchased genres.

5. Final Report

- Summarize insights in a structured format.
- Provide recommendations to marketing, product, and operations teams.

Tools & Technologies

- SQL
- CSV files for dataset import
- Power BI for visualization

Dataset Information

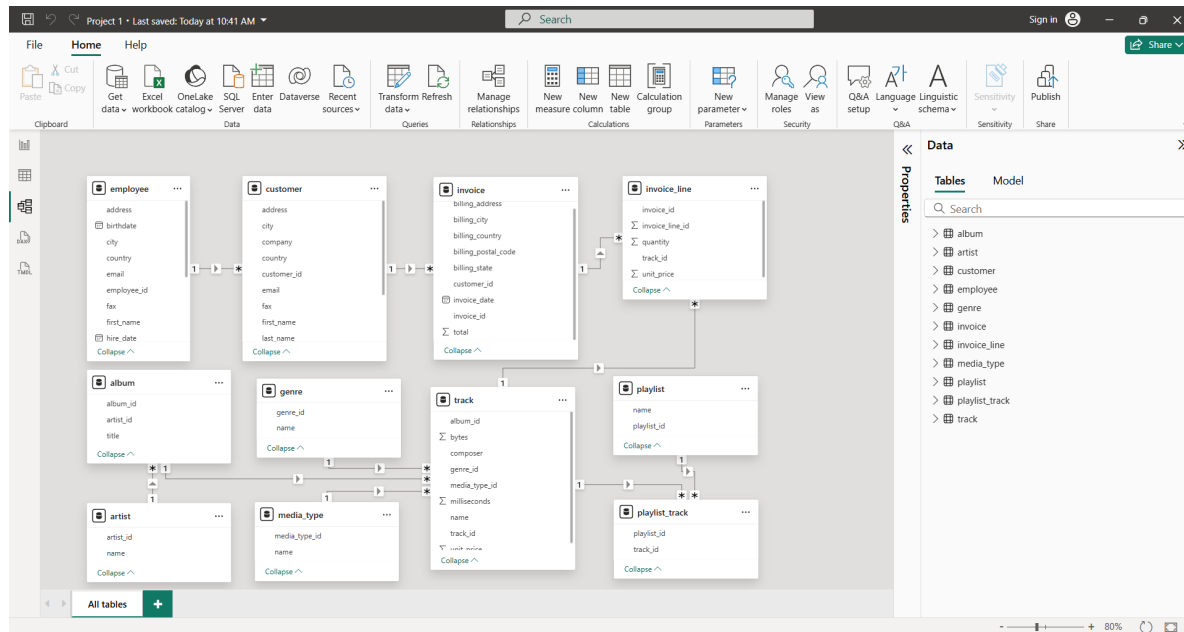
The dataset has the following 11 tables

1. album: Album details
2. artist: Artist information
3. customer: Customer information with assigned support representatives
4. employee: Store employees, including sales support agents
5. genre: Music genres
6. invoice: Sales transactions
7. invoice_line: Individual items within each invoice
8. media_type: Format types (MP3, AAC, etc.)
9. playlist: Curated playlists

10. playlist_track: Tracks within each playlist

11. track: Song information

Relational Database Schema : Based on Primary Key And Foreign Key



SQL Queries to Realistic Business Questions

This project includes 16 SQL queries

1. Customer Analytics

- Which customers have spent the most money on music?
- Which city has the best customers?
- What are the most popular countries for music purchases?
- How much amount spent by each customer on artists?

2. Sales & Revenue Analysis

- What is the average value of an invoice (purchase)?

- How much revenue does each sales representative contribute?
- What are values of Top 3 invoices?

3. Product & Content Analysis

- Which tracks generated the most revenue?
- Which songs are longer than the average length?
- Which albums or playlists are most frequently included in purchases?
- What is the average price per track across different genres?

4. Artist & Genre Performance

- Who are the top 5 highest-grossing artists?
- Which music genres are most popular in terms of Total revenue
- Who are Top 10 Rock band in terms of total number of tracks

5. Employee & Operational Efficiency

- What is the average number of customers per employee in descending order?
- Which employee regions bring in the most revenue?

6. Geographic Trends

- Which countries have the most Invoices?
- Which city has the best customer?

Power Bi Visualization

- Year wise Sales in a line chart
- Top 10 Countries by Spend
- A treemap to visualize Popular Genre by No of tracks
-

Key Insights

- Genre Analysis: We identified Rock as the dominant genre in the top 5 Countries where purchase is highest.

- Employee Performance: We evaluated sales representatives, discovering that Jane Peacock leads in average revenue per customer
- Sales Analysis over the year: The sale was highest in 2019 however it dipped significantly in 2018 and 2020.
- 4. Best Customer: The best customer is from the city of Bordeaux of France.
- 5. Best Artist: The highest-grossing artist is Jimi Hendrix

Next Step

- Sales Trend Analysis: Analyze more on sales trends over time so that we can identify seasonal patterns, if any.
- Customer Segmentation: Create customer segments based on purchase behavior, age, demography and country.
- Product Recommendations: Identify the tracks that are purchased together so that it can be incentivized to generate more sales.
- Growth opportunities: Identify underutilized content or inactive customers for future marketing.