Task 5: SQL-Based Product Sales Analysis

# Executive Summary

The analysis focused on product sales data to identify key trends and top performers. Key findings include:

* **TV soundtrack tracks** are the top-selling products by revenue.
* **The United States and Canada** are the leading revenue contributors, followed by several European countries.
* Monthly revenue for the demo dataset is **steady across 2009**, indicating consistent sales without major spikes.
* A bonus analysis using a window function ranked the top three tracks per country, revealing numerous ties due to a small sample size.

# Methodology

The analysis used standard

**SQL** for SQLite to query key tables including **Invoice**, **InvoiceLine**, **Track**, **Album**, and **Artist**. The methodology involved:

* Using **JOINs** to combine product and sales information.
* Performing aggregations with **SUM** to calculate total revenue.
* Bucketing dates by month using strftime('%Y-%m').
* Utilizing a **window function** (RANK OVER PARTITION) to create country-specific leaderboards.

# Key Findings

## Top-Selling Products

TV soundtrack tracks from shows like *The Office*, *Heroes*, and *Lost* generated the highest revenue. The top individual tracks each earned

**$3.98**, while a secondary tier of top-selling tracks each earned **$1.99**.

## Revenue by Region

The **United States** is the top revenue-generating country with **$523.06**, followed by **Canada** with **$303.96**. European countries like France, Germany, and the UK are also significant contributors.

## Monthly Performance

The monthly revenue trend for 2009 is quite consistent. While some months in other years show slight variations, there are no significant sales spikes or dips in 2009.

## Top Tracks per Country

A bonus analysis revealed that many countries have multiple tracks tied for the top ranks due to sales of a single-track unit (e.g., $0.99 revenue). For example, in Argentina, numerous tracks are tied for rank 1 with a revenue of

**$0.99**.

# Insights & Recommendations

* **Product Focus:** Given that TV soundtrack tracks are top sellers, consider creating curated bundles or running special promotions around these series to capitalize on their popularity.
* **Regional Strategy:** Marketing efforts and targeted campaigns should prioritize the **United States** and **Canada** to maintain and grow revenue from these key markets. Additionally, explore growth opportunities in countries like France, Brazil, and Germany.
* **Seasonality:** The stable monthly revenue suggests that A/B tests could be conducted to explore price elasticity or cross-selling strategies without seasonal fluctuations influencing the results.
* **Next Steps:** Future analysis should include building interactive dashboards and extending the analysis to include top genres and artists to gain a more comprehensive view of product performance.