**iTunes SQL Data Analytics Report**

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**Objective:** To derive business insights from the iTunes dataset using SQL queries across Customer Analytics, Sales Trends, Product Performance, Geographic Behavior, and Operational Efficiency.

### 1. Executive Summary

This report outlines analytical findings from the iTunes database. By using structured SQL queries, we examined customer purchase behaviors, revenue trends, sales rep performance, and regional differences in sales performance. The report is divided into sections by business domain, with each section providing insights followed by the SQL code that powered the analysis.

### 2. Customer Insights

* Identified top-spending customers by total purchase.
* All customers made repeat purchases, indicating high engagement.
* Czech Republic leads in average revenue per customer.
* Highlighted inactive customers who haven’t purchased in the last 6 months.

**SQL:**

SELECT c.full\_name, c.customer\_id, SUM(i.total) AS total\_spent  
FROM customer c  
LEFT JOIN invoice i ON c.customer\_id = i.customer\_id  
GROUP BY c.customer\_id, c.full\_name  
ORDER BY total\_spent DESC;

SELECT  
 AVG(customer\_lifetime\_value) AS avg\_clv  
FROM (  
 SELECT  
 c.customer\_id,  
 SUM(i.total) AS customer\_lifetime\_value  
 FROM customer c  
 LEFT JOIN invoice i ON c.customer\_id = i.customer\_id  
 GROUP BY c.customer\_id  
) AS customer\_totals;

### 3. Sales & Revenue Trends

* Revenue peaked in October 2020.
* Average invoice value is approximately $5.65.
* Jane was the top-performing sales representative.

**SQL:**

SELECT  
 DATE\_FORMAT(invoice\_date, '%Y-%m') AS month,  
 SUM(total) AS monthly\_revenue  
FROM invoice  
WHERE invoice\_date >= '2018-12-31 00:00:00'  
GROUP BY DATE\_FORMAT(invoice\_date, '%Y-%m')  
ORDER BY month;

SELECT AVG(total) AS avg\_purchase FROM invoice;

### 4. Product & Content Performance

* Identified the highest grossing music tracks.
* Found peak quarters/months for sales volume.

**SQL:**

SELECT track\_id, SUM(unit\_price \* quantity) AS total\_revenue  
FROM invoice\_line  
GROUP BY track\_id  
ORDER BY total\_revenue DESC;

SELECT  
 DATE\_FORMAT(i.invoice\_date, '%Y-%m') AS month,  
 SUM(il.unit\_price \* il.quantity) AS music\_sales  
FROM invoice\_line il  
JOIN invoice i ON il.invoice\_id = i.invoice\_id  
GROUP BY DATE\_FORMAT(i.invoice\_date, '%Y-%m')  
ORDER BY music\_sales DESC  
LIMIT 5;

### 5. Geographic Trends

* USA has the most customers.
* Czech Republic brings the highest revenue per customer.
* Certain regions show high customer count but low revenue.

**SQL:**

SELECT country, COUNT(customer\_id) AS total\_customer  
FROM customer  
GROUP BY country  
ORDER BY total\_customer DESC;

SELECT  
 c.country AS region,  
 COUNT(DISTINCT c.customer\_id) AS total\_customers,  
 SUM(i.total) AS total\_revenue,  
 ROUND(SUM(i.total) / COUNT(DISTINCT c.customer\_id), 2) AS avg\_revenue\_per\_customer  
FROM customer c  
JOIN invoice i ON c.customer\_id = i.customer\_id  
GROUP BY c.country  
ORDER BY avg\_revenue\_per\_customer ASC;

### 6. Operational Efficiency

* Calculated average customers per sales rep.
* Identified most productive employee regions.

**SQL:**

SELECT  
 e.first\_name, e.last\_name,  
 SUM(i.total) AS total\_revenue  
FROM employee e  
JOIN customer c ON e.employee\_id = c.support\_rep\_id  
JOIN invoice i ON c.customer\_id = i.customer\_id  
GROUP BY e.employee\_id  
ORDER BY total\_revenue DESC;

SELECT  
 AVG(customer\_count) AS avg\_customers\_per\_employee  
FROM (  
 SELECT support\_rep\_id, COUNT(customer\_id) AS customer\_count  
 FROM customer  
 GROUP BY support\_rep\_id  
) AS rep\_customer\_counts;

**Technologies Used:**

* SQL (MySQL)
* Joins, aggregations, subqueries, filters
* Data cleaning, trend analysis

This analysis provides me a foundation for creating visual dashboards and deeper predictive modeling in tools like Power BI or Python.