-- 1. Monthly Revenue and Order Volume

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

SUM(amount) AS total\_revenue,

COUNT(DISTINCT order\_id) AS total\_orders

FROM online\_sales.orders

GROUP BY year, month

ORDER BY year, month;

-- 2. Top 3 Months by Sales (Revenue)

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

SUM(amount) AS total\_revenue

FROM online\_sales.orders

GROUP BY year, month

ORDER BY total\_revenue DESC

LIMIT 3;

-- 3. Top 3 Months by Order Volume

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

COUNT(DISTINCT order\_id) AS total\_orders

FROM online\_sales.orders

GROUP BY year, month

ORDER BY total\_orders DESC

LIMIT 3;

**📝 Objective**

Analyze **monthly revenue** and **order volume** using SQL aggregate functions.

**📂 Dataset**

* **Table:** online\_sales.orders
* **Columns Used:**
  + order\_date → Date of order
  + amount → Order revenue
  + order\_id → Order identifier
  + product\_id → Product purchased

**🛠 Tools & Queries**

**1. Monthly Revenue & Order Volume**

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

SUM(amount) AS total\_revenue,

COUNT(DISTINCT order\_id) AS total\_orders

FROM online\_sales.orders

GROUP BY year, month

ORDER BY year, month;

**2. Top 3 Months by Revenue**

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

SUM(amount) AS total\_revenue

FROM online\_sales.orders

GROUP BY year, month

ORDER BY total\_revenue DESC

LIMIT 3;

**3. Top 3 Months by Order Volume**

SELECT

EXTRACT(YEAR FROM order\_date) AS year,

EXTRACT(MONTH FROM order\_date) AS month,

COUNT(DISTINCT order\_id) AS total\_orders

FROM online\_sales.orders

GROUP BY year, month

ORDER BY total\_orders DESC

LIMIT 3;

**📑 Example Output**

| **Year** | **Month** | **Total Revenue** | **Total Orders** |
| --- | --- | --- | --- |
| 2023 | 01 | 120,000 | 450 |
| 2023 | 02 | 98,500 | 390 |
| 2023 | 03 | 150,200 | 520 |

*(Values are sample only – actual results depend on dataset.)*

**🎯 Key Learnings**

* Grouping data using **GROUP BY** with year & month.
* Using aggregate functions: **SUM()**, **COUNT()**.
* Difference between **COUNT(\*) vs COUNT(DISTINCT col)**.
* Sorting results with **ORDER BY**.
* Extracting top results using **LIMIT**.
* Handling NULLs in aggregates (ignored by default).