Task – 6: Sales Trend Analysis Aggregation

Objective: - Analyze monthly revenue and order volume.

Tools: - PostgreSQL

Deliverables: - SQL Scripts + results

1. Extract Months form the date column and give the name of months.

   Query: -

```
SELECT DISTINCT
   EXTRACT(MONTH FROM date) AS month_number,
   TO_CHAR(date, 'Month') AS month_name
FROM public.sales_data
ORDER BY month_number;
```

   Output: -

	month_number numeric	month_name text
1	1	January
2	2	February
3	3	March
4	4	April
5	5	May
6	6	June
7	7	July
8	8	August

2. Find Total Sales by Month on every year using Group by year/month.

Query: -

```
-- finding Total sales in every months by year.
SELECT
   EXTRACT(YEAR FROM date) AS year,
   EXTRACT(MONTH FROM date) AS month,
   SUM(units_sold) AS total_units,
   SUM(total_revenue) AS total_revenue
FROM public.sales_data
GROUP BY year, month
ORDER BY year, month;
```

Output: -

	year numeric	month numeric	total_units bigint	total_revenue numeric
1	2024	1	68	14548.32
2	2024	2	77	10803.37
3	2024	3	82	12849.24
4	2024	4	65	12451.69
5	2024	5	60	8455.49
6	2024	6	61	7384.55
7	2024	7	53	6797.08
8	2024	8	52	7278.11

3. Find Total Revenue using sum().

   Query: -

```
SELECT
   EXTRACT(YEAR FROM date) AS sales_year,
   SUM(total_revenue) AS total_revenue
FROM public.sales_data
GROUP BY sales_year
ORDER BY sales_year;
```

   Output: -

	sales_year numeric	total_revenue numeric
1	2024	80567.85

4. Find the Total Orders For volume using Distinct.

   Query: -

```
SELECT
   COUNT(DISTINCT transaction_id) AS total_orders
FROM public.sales_data;
```

   Output: -

	total_orders bigint
1	240

5. Total Order sorted by Months.

Query: -

```
SELECT
   TO_CHAR(date, 'YYYY-MM') AS year_month,
   COUNT(DISTINCT transaction_id) AS total_orders
FROM public.sales_data
GROUP BY year_month
ORDER BY year_month ASC;
```

Output: -

	year_month text	total_orders bigint
1	2024-01	31
2	2024-02	29
3	2024-03	31
4	2024-04	30
5	2024-05	31
6	2024-06	30
7	2024-07	31
8	2024-08	27

6. Limit results for specific time periods for first quarter.

Query: -

```
SELECT
   EXTRACT(YEAR FROM date) AS sales_year,
   EXTRACT(MONTH FROM date) AS sales_month,
   COUNT(DISTINCT transaction_id) AS total_orders,
   SUM(total_revenue) AS total_revenue
FROM public.sales_data
WHERE EXTRACT(MONTH FROM date) BETWEEN 1 AND 3   -- Q1 (Jan, Feb, Mar)
GROUP BY sales_year, sales_month
ORDER BY sales_year, sales_month;
```

Output: -

	sales_year numeric	sales_month numeric	total_orders bigint	total_revenue numeric
1	2024	1	31	14548.32
2	2024	2	29	10803.37
3	2024	3	31	12849.24