

TASK 6: Sales Trend Analysis Using Aggregations

a. Extract Month from order_date

SQL Query:

```
SELECT order_id, order_date, EXTRACT(MONTH FROM order_date) AS month FROM orders
LIMIT 5;
```

Sample Output:

order_id	order_date	month
101	2024-01-15	1
102	2024-01-20	1
103	2024-02-05	2
104	2024-02-18	2
105	2024-03-02	3

b. Extract Year and Month

SQL Query:

```
SELECT EXTRACT(YEAR FROM order_date) AS year, EXTRACT(MONTH FROM order_date) AS
month FROM orders LIMIT 5;
```

Sample Output:

year	month
2024	1
2024	1
2024	2
2024	2
2024	3

c. Group by Year and Month

SQL Query:

```
SELECT EXTRACT(YEAR FROM order_date) AS year, EXTRACT(MONTH FROM order_date) AS
month, COUNT(*) AS order_count FROM orders GROUP BY EXTRACT(YEAR FROM order_date),
EXTRACT(MONTH FROM order_date) ORDER BY year, month;
```

Sample Output:

year	month	order_count
2024	1	320
2024	2	340
2024	3	355

d. Use SUM() for Monthly Revenue

SQL Query:

```
SELECT EXTRACT(YEAR FROM order_date) AS year, EXTRACT(MONTH FROM order_date) AS
month, SUM(amount) AS total_revenue FROM orders GROUP BY EXTRACT(YEAR FROM
order_date), EXTRACT(MONTH FROM order_date) ORDER BY year, month;
```

Sample Output:

year	month	total_revenue
2024	1	25300.5
2024	2	28450.0
2024	3	30210.75

e. Use COUNT(DISTINCT order_id) for Monthly Order Volume

SQL Query:

```
SELECT EXTRACT(YEAR FROM order_date) AS year, EXTRACT(MONTH FROM order_date) AS
month, COUNT(DISTINCT order_id) AS total_orders FROM orders GROUP BY EXTRACT(YEAR
FROM order_date), EXTRACT(MONTH FROM order_date) ORDER BY year, month;
```

Sample Output:

year	month	total_orders
2024	1	320
2024	2	340
2024	3	355

f. Full Query with Revenue & Volume + Limit to Time Period

SQL Query:

```
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
orders WHERE EXTRACT(YEAR FROM order_date) = 2024 GROUP BY EXTRACT(YEAR FROM
order_date), EXTRACT(MONTH FROM order_date) ORDER BY month;
```

Sample Output:

year	month	total_revenue	total_orders
2024	1	25300.5	320
2024	2	28450.0	340
2024	3	30210.75	355
2024	4	27980.2	310
2024	5	33500.9	390