Start your week with a Sip!

Monday Coffee

Expansion Analysis with SQL

⚠ **Solve Business Problems with SQL**

Sneha Dandi

Problem Statement :

"Monday Coffee is looking to expand its business across cities and improve sales performance. However, the management lacks clear insights into key sales metrics such as revenue trends, product performance, customer preferences, and geographic demand. Without structured analysis, identifying high-performing cities, best-selling products, and strategic areas for expansion remains a challenge."

Objective :

•Analyze sales trends over time to spot seasonal or quarterly patterns.
•Evaluate customer purchasing behavior and order volume.
•Detect areas with low sales that require marketing focus or operational improvement.
•Identify top-performing products and cities based on revenue and quantity sold.
•Generate insights to support data-driven expansion decisions and inventory planning."

Dataset Overview: Monday Coffee Expansion Project

The dataset includes sales and customer data from Monday Coffee to support business analysis and expansion planning.

Key Tables:

- **Customers** – Customer info (ID, name, city, state)
- **Orders** – Order date, order ID, linked to customer and products
- **Products** – Coffee items with product ID, name, price, category
- **Order Details** – Quantity, unit price, revenue per order line
- **Stores/Cities** – Information on store locations
- **Date** – Breakdown by date, month, quarter, year

Coffee consumer count

1) How many people in each city are estimated to consume coffee, given that 25% of the population does?

```
SELECT
    city_name,
    population,
    ROUND(population * 0.25) AS estimated_coffee_consumers
FROM city;
```

city_name	population	estimated_coffee_consumers
Bangalore	12300000	3075000
Chennai	11100000	2775000
Pune	7500000	1875000
Jaipur	4000000	1000000
Delhi	31000000	7750000
Mumbai	20400000	5100000

Total Revenue from Coffee Sales

2) What is the total revenue generated from coffee sales across all cities in the last quarter of 2023?

```
select
   city.city_name,
 sum(sales.total) as total_rev_q4_2023
from sales join customers on sales.customer_id=customers.customer_id
join city on city.city_id=customers.city_id
join products on products.product_id=sales.product_id
where sales.sale_date between '2023-10-01' AND '2023-12-31' and products.product_name like '%coffee%'
group by city.city_name;
```

city_name	total_rev_q4_2023
Nagpur	43060
Mumbai	84190
Pune	400380
Bangalore	253080
Jaipur	235830
Chennai	281650

Sales Count for Each Product

3) How many units of each coffee product have been sold?

```
select products.product_name,count(sales.sale_id) as total_sales
 from  products join sales on products.product_id=sales.product_id
 group by products.product_name
 order by total_sales desc;
```

product_name	total_sales
Cold Brew Coffee Pack (6 Bottles)	1326
Ground Espresso Coffee (250g)	1271
Instant Coffee Powder (100g)	1226
Coffee Beans (500g)	1218
Tote Bag with Coffee Design	776
Vanilla Coffee Syrup (250ml)	762

Average Sales Amount per City

4) What is the average sales amount per customer in each city?

```
select city_name,sum(sales.total)as total_sales ,
 count( distinct customers.customer_id) as  total_coustomer,
round( sum(sales.total) /count( distinct customers.customer_id) ,2) as  avg_sale_per_cust
 from  sales join customers on sales.customer_id=customers.customer_id
join city on city.city_id=customers.city_id
group by city.city_name
order by  avg_sale_per_cust desc ;
```

city_name	total_sales	total_coustomer	avg_sale_per_cust
Pune	1258290	52	24197.88
Chennai	944120	42	22479.05
Bangalore	860110	39	22054.1
Jaipur	803450	69	11644.2
Delhi	750420	68	11035.59
Mumbai	235000	27	8703.7

City Population and Coffee Consumers

5) Provide a list of cities along with their populations and estimated coffee consumers.

```sql
SELECT
    city_name,
    population,
    ROUND(population * 0.25) AS estimated_coffee_consumers
FROM city;
```

city_name	population	estimated_coffee_consumers
Bangalore	12300000	3075000
Chennai	11100000	2775000
Pune	7500000	1875000
Jaipur	4000000	1000000
Delhi	31000000	7750000
Mumbai	20400000	5100000

Top Selling Products by City

6) What are the top 3 selling products in each city based on sales volume?

```sql
select city_name,
       product_name,
       total_orders from
(
select  city.city_name,
       products.product_name,
       count(sales.sale_id) as total_orders ,
       RANK() OVER (PARTITION BY city.city_name ORDER BY count(sales.sale_id) DESC) AS rank_in_city
from sales join products on sales.product_id=products.product_id
join customers on customers.customer_id=sales.customer_id
join city on city.city_id=customers.city_id
group by city.city_name,products.product_name
) as ranked_products
where rank_in_city <=3;
```

city_name	product_name	total_orders
Ahmedabad	Cold Brew Coffee Pack (6 Bottles)	40
Ahmedabad	Coffee Beans (500g)	35
Ahmedabad	Instant Coffee Powder (100g)	26
Bangalore	Cold Brew Coffee Pack (6 Bottles)	197
Bangalore	Ground Espresso Coffee (250g)	167
Bangalore	Instant Coffee Powder (100g)	150
Chennai	Cold Brew Coffee Pack (6 Bottles)	192
Chennai	Coffee Beans (500g)	181
Chennai	Instant Coffee Powder (100g)	172
Delhi	Ground Espresso Coffee (250g)	183

Customer Segmentation by City

7) How many unique customers are there in each city who have purchased coffee products?

```
select
city.city_name,
count(distinct customers.customer_id) as unique_customers
from sales join customers on sales.customer_id=customers.customer_id
 join city on city.city_id=customers.city_id
 join products on sales.product_id=products.product_id
 where products.product_name like '%coffee%'
 group by city.city_name
 order by unique_customers desc ;
```

city_name	unique_customers
Jaipur	69
Delhi	68
Pune	52
Chennai	42
Bangalore	39
Kanpur	35
Kolkata	28
Mumbai	27
Surat	27
Nagpur	24

Average Sale vs Rent

8) Find each city and their average sale per customer and avg rent per customer

```
select
city.city_name,
round(sum(sales.total)/count(distinct customers.customer_id),1) as avg_salaes_per_customer,
 round((city.estimated_rent/count(distinct customers.customer_id)),1)as avg_ren_per_customer
 from sales join customers
on sales.customer_id=customers.customer_id
join city on city.city_id=customers.city_id
group by city.city_name ,city.estimated_rent;
```

city_name	avg_salaes_per_customer	avg_ren_per_customer
Ahmedabad	5986.5	626.1
Bangalore	22054.1	761.5
Chennai	22479	407.1
Delhi	11035.6	330.9
Hyderabad	6262.9	1071.4
Indore	6599.5	300
Jaipur	11644.2	156.5
Kanpur	6101.4	231.4
Kolkata	6123.6	578.6
Lucknow	5209.5	428.6
Mumbai	8703.7	1166.7
Nagpur	5835.4	300
Pune	24197.9	294.2
Surat	6538.5	500

11644.2

Monthly Sales Growth Sales growth rate

9) Calculate the percentage growth (or decline) in sales over different time periods (monthly)

```sql
SELECT
    month,
    total_sales,
    LAG(total_sales) OVER (ORDER BY month) AS previous_month_sales,
    ROUND(
        ((total_sales - LAG(total_sales) OVER (ORDER BY month)) / LAG(total_sales) OVER (ORDER BY month)) * 100,
        2
    ) AS growth_percent
FROM (
    SELECT
        DATE_FORMAT(sale_date, '%Y-%m') AS month,
        SUM(total) AS total_sales
    FROM sales
    GROUP BY month
) AS monthly_summary;
```

month	total_sales	previous_month_sales	growth_percent
2023-01	183070	NULL	NULL
2023-02	179930	183070	-1.72
2023-03	211820	179930	17.72
2023-04	189250	211820	-10.66
2023-05	207960	189250	9.89
2023-06	182360	207960	-12.31
2023-07	215410	182360	18.12
2023-08	158900	215410	-26.23
2023-09	428300	158900	169.54
2023-10	682500	428300	59.35

month	total_sales	previous_month_sales	growth_percent
2023-10	682500	428300	59.35
2023-11	709200	682500	3.91
2023-12	571600	709200	-19.4
2024-01	385090	571600	-32.63
2024-02	446850	385090	16.04
2024-03	512350	446850	14.66
2024-04	125850	512350	-75.44
2024-05	167150	125850	32.82
2024-06	116300	167150	-30.42
2024-07	114750	116300	-1.33

2023-08	158900	215410	-26.23
2023-09	428300	158900	169.54
2023-10	682500	428300	59.35

Market Potential Analysis

10) Identify top 3 city based on highest sales, return city name, total sale, total rent, total customers, estimated coffee consumer

```sql
SELECT
    c.city_name,
    ROUND(SUM(s.total), 2) AS total_sales,
    ROUND(SUM(c.estimated_rent), 2) AS total_rent,
    COUNT(DISTINCT cu.customer_id) AS total_customers,
    ROUND(c.population * 0.25) AS estimated_coffee_consumers
FROM sales s
JOIN customers cu ON s.customer_id = cu.customer_id
JOIN city c ON cu.city_id = c.city_id
GROUP BY c.city_id, c.city_name, c.population, c.estimated_rent
ORDER BY total_sales DESC
LIMIT 3;
```

city_name	total_sales	total_rent	total_customers	estimated_coffee_consumers
Pune	1258290	32665500	52	1875000
Chennai	944120	27377100	42	2775000
Bangalore	860110	43480800	39	3075000

Start your week with a Sip!
Monday Coffee

Recommendations & Reasons

City 1: Pune

- Average rent per customer is very low.
- Highest total revenue.
- Average sales per customer is also high.

City 2: Delhi

- Highest estimated coffee consumers at 7.7 million.
- Highest total number of customers, which is 68.
- Average rent per customer is 330 (still under 500).

City 3: Jaipur

- Highest number of customers, which is 69.
- Average rent per customer is very low at 156.
- Average sales per customer is better at 11.6k.

Thankyou