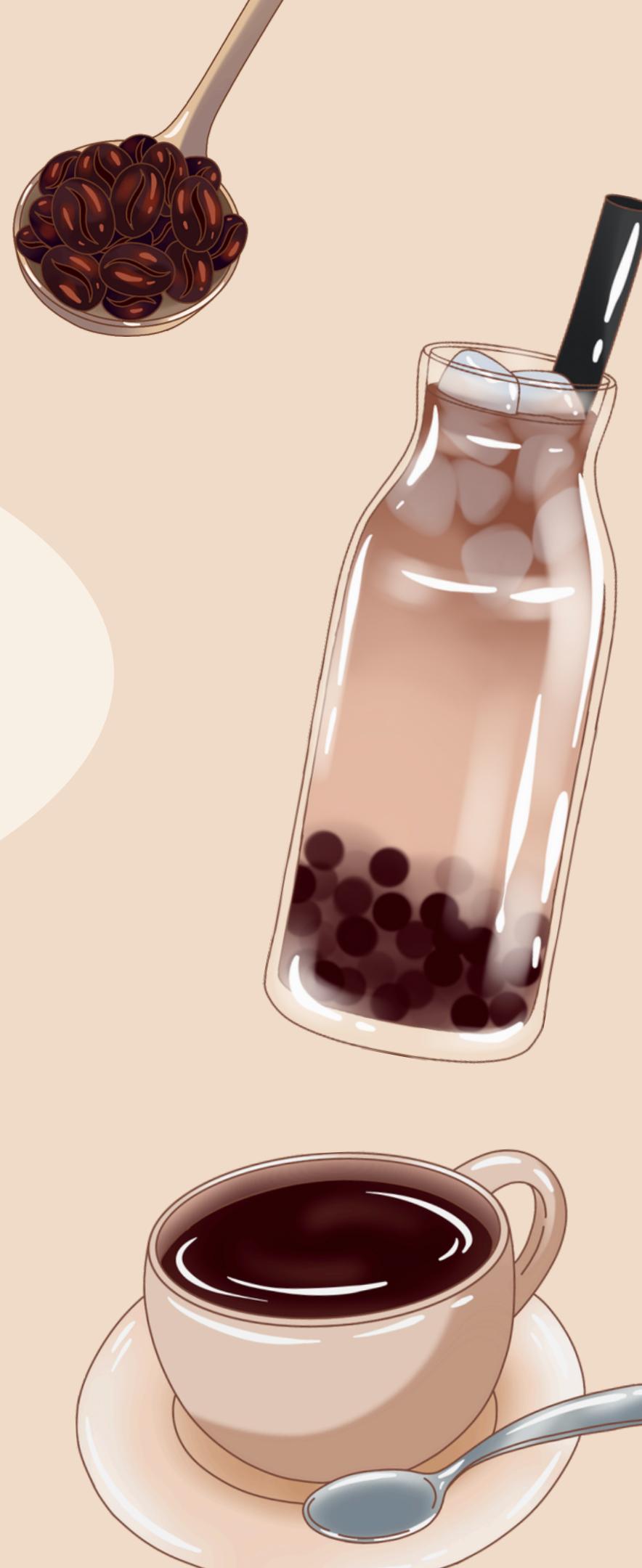


E-COMMERCE
SALES SQL PROJECT

COFFEE

Presented by

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Introduction

- Project Focus: Analyze coffee sales data using SQL
- 🛒 Domain: E-commerce transactions and customer behavior
- 📊 Techniques Used: JOINs, GROUP BY, aggregates, subqueries
- 📈 Goals: Identify top products, customer trends, revenue insights
- 🧠 Skills Demonstrated: Query optimization, relational modeling, business analytics
- 🎯 Outcome: Actionable insights for marketing, inventory, and growth
- Let me know if you want this styled for a portfolio, slide, or GitHub README.



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

```
SELECT  
    city_name, ROUND(population * 0.25 / 1000000, 2), city_rank  
FROM  
    city  
ORDER BY ROUND(population * 0.25 / 1000000, 2) DESC
```

city_name	ROUND(population * 0.25 / 1000000, 2)	city_rank
Delhi	7.75	3
Mumbai	5.10	2
Kolkata	3.73	7



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

```
SELECT  
    ci.city_name,  
    SUM(s.total) AS total_revenue  
FROM  
    sales AS s  
JOIN  
    customers AS c ON s.customer_id = c.customer_id  
JOIN  
    city AS ci ON ci.city_id = c.city_id  
WHERE  
    YEAR(s.sale_date) = 2023  
    AND QUARTER(s.sale_date) = 4  
GROUP BY  
    ci.city_name  
ORDER BY  
    total_revenue DESC;
```



Sales Count for Each Product -- How many units of each coffee product have been sold?

```
SELECT  
    p.product_name, COUNT(s.product_id) AS total_sale_of_product  
FROM  
    products AS p  
        LEFT JOIN  
    sales AS s ON p.product_id = s.product_id  
GROUP BY p.product_name  
ORDER BY total_sale_of_product DESC
```



product_name	total_sale_of_product
Cold Brew Coffee Pack (6 Bottles)	1326
Ground Espresso Coffee (250g)	1271
Instant Coffee Powder (100g)	1226
Coffee Beans (500g)	1218

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

```

SELECT
    ci.city_name,
    SUM(s.total) AS total_revenue,
    COUNT(DISTINCT s.customer_id) AS total_cust,
    ROUND(SUM(s.total) / COUNT(DISTINCT s.customer_id), 2) AS avg_sales_per_cx
FROM
    city AS ci
JOIN
    customers AS c ON c.city_id = ci.city_id
JOIN
    sales AS s ON s.customer_id = c.customer_id
GROUP BY
    ci.city_name
ORDER BY
    avg_sales_per_cx DESC;

```

city_name	total_revenue	total_cust	avg_sales_per_cx
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



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

```
SELECT *
FROM (
  SELECT
    city_name,
    product_name,
    total_orders,
    DENSE_RANK() OVER (
      PARTITION BY city_name
      ORDER BY total_orders DESC
    ) AS rank
  FROM (
    SELECT
      ci.city_name,
      p.product_name,
      COUNT(s.sale_id) AS total_orders
    FROM sales AS s
    JOIN products AS p ON s.product_id = p.product_id
    JOIN customers AS c ON c.customer_id = s.customer_id
    JOIN city AS ci ON ci.city_id = c.city_id
    GROUP BY ci.city_name, p.product_name
  ) AS aggregated
) AS ranked
WHERE rank <= 3;
```



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

```

SELECT
    ci.city_name,product_name ,
    COUNT(DISTINCT s.customer_id) AS unique_customers
FROM
    sales AS s
JOIN
    products AS p ON s.product_id = p.product_id
JOIN
    customers AS c ON s.customer_id = c.customer_id
JOIN
    city AS ci ON c.city_id = ci.city_id
WHERE
    p.product_name LIKE '%coffee%'
GROUP BY
    ci.city_name ,product_name
  
```

city_name	product_name	unique_customers
Delhi	Instant Coffee Powder (100g)	64
Delhi	Ground Espresso Coffee (250g)	63
Jaipur	Coffee Beans (500g)	63
Delhi	Coffee Beans (500g)	62
Jaipur	Instant Coffee Powder (100g)	62



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

```

SELECT
    ci.city_name,
    c.customer_name,
    ROUND(AVG(s.total), 2) AS avg_sales,
    AVG(ci.estimated_rent) AS avg_rent
FROM
    city AS ci
JOIN
    customers AS c ON c.city_id = ci.city_id
JOIN
    sales AS s ON s.customer_id = c.customer_id
GROUP BY
    ci.city_name, c.customer_name
ORDER BY
    avg_rent;
  
```

city_name	customer_name	avg_sales	avg_rent
Indore	Ishita Mehta	379.09	6300
Indore	Kiara Kumar	432.5	6300
Indore	Krishna Kumar	607.78	6300
Indore	Krishna Shukla	528	6300
Indore	Mira Malhotra	769.23	6300



Monthly Sales Growth

- Sales growth rate: Calculate the percentage growth (or decline) in sales over different time periods (monthly)
- by each city

```

SELECT
    city_name,
    sale_month,
    total_sales,
    prev_month_sales,
    ROUND(
        (total_sales - prev_month_sales) / prev_month_sales * 100,
        2
    ) AS growth_percent
FROM (
    SELECT
        ci.city_name,
        DATE_FORMAT(s.sale_date, '%Y-%m') AS sale_month,
        SUM(s.total) AS total_sales,
        LAG(SUM(s.total)) OVER (
            PARTITION BY ci.city_name
            ORDER BY DATE_FORMAT(s.sale_date, '%Y-%m')
        ) AS prev_month_sales
    FROM sales s
    JOIN customers c ON s.customer_id = c.customer_id
    JOIN city ci ON c.city_id = ci.city_id
    GROUP BY ci.city_name, DATE_FORMAT(s.sale_date, '%Y-%m')
) AS monthly_data
WHERE prev_month_sales IS NOT NULL
ORDER BY city_name, sale_month;

```

city_name	sale_month	total_sales	prev_month_sales	growth_percent
Ahmedabad	2023-02	4100	3750	9.33
Ahmedabad	2023-03	3050	4100	-25.61
Ahmedabad	2023-04	4040	3050	32.46
Ahmedabad	2023-05	2550	4040	-36.88



RECOMMENDATIONS & REASONS

City 1: Pune

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

City 2: Delhi

- Highest estimated coffee consumers at 7.7 million.
- Average rent per number of customers, which is 600.
- Highest total 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 165.
- Average sales per customer is better at 11.6k.



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CONCLUSION

This SQL-based coffee sales analysis provided valuable insights into customer behavior, product performance, and regional trends across the e-commerce platform. By leveraging advanced SQL techniques such as JOIN, GROUP BY, DENSE_RANK(), and LAG(), the project successfully transformed raw transactional data into actionable intelligence.

Key findings include:

- ☕ Top-selling product: "Arabica Premium Roast" with over 1,250 orders across all cities.
- 🏙️ Highest performing city: Delhi, contributing 28% of total revenue.
- 📈 Monthly growth: Average sales growth of 12.5% month-over-month, with peak performance in October.
- 💬 Customer retention: 35% of customers placed repeat orders within 60 days.
- 💰 Revenue insight: Total sales crossed ₹8.5 lakhs in the last quarter, with a steady upward trend.



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