

**SQL**

**Activities**

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# Objective

The goal of this project is to analyse Monday Coffee's sales data, a company that has been selling its products online since January 2023, and to recommend the top three major cities in India for opening new coffee shop locations based on consumer demand and sales performance.

# SQL Project: Monday Coffee Data Analysis

## Activity 1: Data Loading

**Key Question:**

● How do you create the tables for customers, products, and sales in the database?

Ans:

First I created the database using “ **create schema mydatabase;** ”

Then I right clicked on the database and then I selected table data import wizard to import the data downloaded from the future connect. Then the tables of city, customers, products, sales are imported. Then I use select \* queries to see what is in the datasets

use mydatabase;

select \* from city;

select \* from customers;

select \* from products;

select \* from sales;

## Activity 2: Data Cleaning & Preprocessing

**Key Questions:**

* How can you identify null values in your dataset?

Ans:

select \* from city where city\_id is null or city\_name is null or population is null or estimated\_rent is null or city\_rank is null;

select \* from customers where customer\_id is null or customer\_name is null or city\_id is null;

select \* from products where product\_id is null or product\_name is null or price is null;

select \* from sales where sale\_id is null or sale\_date is null or quantity is null or product\_id is null or customer\_id is null or total\_amount is null or rating is null;

* How can you check for duplicate entries in the customers table?

Ans:

select city\_name, count(\* ) from city group by city\_name having count(\*)>1;

select customer\_id,count(\*) from customers group by customer\_id having count(\*)>1;

select product\_id, count(\*) from products group by product\_id having count(\*)>1;

select sale\_id, count(\*) from sales group by sale\_id having count(\*)>1;

* How do you check for mismatches between total\_amount and the calculated value of price × quantity?

Ans:

select sale\_id

from sales

join products on products.product\_id = sales.product\_id

where sales.total\_amount!=products.price\*sales.quantity;

**And I also changed the columns using update and used the formula to correct them:**

update sales

join products on products.product\_id=sales.product\_id

set SALES.total\_amount=products.price\*sales.quantity

where sales.total\_amount!=products.price\*sales.quantity;

## Activity 3: Data Transformation & Integration

Once the data was clean, we proceeded to join the tables to create a comprehensive view for analysis.

**Key Question:**

● How do you create a comprehensive sales report with customer and product details?

Ans:

Select customers.customer\_id,products.product\_name,sales.sale\_id,sales.total\_amount,sales.sale\_date

from sales join customers on customers.customer\_id=sales.customer\_id

join products on products.product\_id = sales.product\_id

where city\_id =1

order by sale\_date;

## Activity 4: Data Analysis & Aggregation

1. **Total Sales per City** 
   * What are the total sales per city?

Ans:

select city.city\_id, city.city\_name, sum(sales.total\_amount) as totsales

from sales

JOIN customers ON sales.customer\_id = customers.customer\_id

join city on customers.city\_id =city.city\_id

group by city.city\_id,city.city\_name;

1. **Total Transactions per City** 
   * How many total transactions occurred per city?

Ans:

select city.city\_name,city.city\_id,count(sales.sale\_id) as no\_of\_trans

from sales join customers on customers.customer\_id=sales.customer\_id

join city on customers.city\_id=city.city\_id

group by city.city\_id,city.city\_name;

1. **Unique Customers per City** 
   * How many unique customers are there in each city?

Ans:

select city.city\_id,city.city\_name, count(sales.customer\_id) as no\_of\_customers

from sales

join customers on customers.customer\_id=sales.customer\_id

join city on customers.city\_id=city.city\_id

group by city.city\_id,city.city\_name;

1. **Average Order Value per City** 
   * What is the average order value per city?

Ans:

select city.city\_id,city.city\_name, avg(sales.total\_amount) as tot\_avg\_order\_val

from sales

join customers on customers.customer\_id=sales.customer\_id

join city on city.city\_id=customers.city\_id

group by city.city\_id,city.city\_name;

1. **Product Demand per City** 
   * What is the demand for each product in different cities?

Ans:

select city.city\_id,city.city\_name, count(sales.product\_id) as product\_tot ,

case when count(sales.product\_id) >1500 then 'high'

when count(sales.product\_id)>500 then 'normal' else 'low'

end as demand\_category

from sales

join customers on customers.customer\_id=sales.customer\_id

join city on city.city\_id=customers.city\_id

group by city.city\_id,city.city\_name

order by product\_tot desc ;

1. **Monthly Sales Trend** 
   * What is the monthly sales trend?

Ans: WITH monthly\_sales AS (

SELECT

DATE\_FORMAT(STR\_TO\_DATE(sale\_date, '%m/%d/%Y'), '%Y-%m') AS sale\_month,

SUM(total\_amount) AS total\_sales

FROM sales

GROUP BY sale\_month

)

SELECT

sale\_month,

total\_sales,

LAG(total\_sales) OVER (ORDER BY sale\_month) AS prev\_month\_sales,

total\_sales - LAG(total\_sales) OVER (ORDER BY sale\_month) AS change\_in\_sales,

CASE

WHEN total\_sales > LAG(total\_sales) OVER (ORDER BY sale\_month) THEN 'Increase'

WHEN total\_sales < LAG(total\_sales) OVER (ORDER BY sale\_month) THEN 'Decrease'

ELSE 'No Change'

END AS trend

FROM monthly\_sales

ORDER BY sale\_month;

1. **Customer Rating Analysis** 
   * What is the average product rating per city based on customer purchases?

Ans:

select city.city\_id,city.city\_name, avg(sales.rating)as avg\_rating

from sales

join customers on customers.customer\_id=sales.customer\_id

join city on city.city\_id = customers.city\_id

group by city.city\_id,city.city\_name;

## Activity 5: Decision-Making & Recommendations

1. **Top Cities Selection** 
   * How do you identify the top 3 cities based on sales, unique customers, and order count?

Ans:

**Based on sales:**

SELECT

city.city\_name,

SUM(sales.total\_amount) AS total\_sales,

COUNT(DISTINCT sales.customer\_id) AS unique\_customers,

COUNT(sales.sale\_id) AS order\_count

FROM sales

JOIN customers ON customers.customer\_id = sales.customer\_id

JOIN city ON city.city\_id = customers.city\_id

GROUP BY city.city\_id, city.city\_name

ORDER BY total\_sales DESC

LIMIT 3;

**Based on unique customers:**

SELECT

city.city\_name,

SUM(sales.total\_amount) AS total\_sales,

COUNT(DISTINCT sales.customer\_id) AS unique\_customers,

COUNT(sales.sale\_id) AS order\_count

FROM sales

JOIN customers ON customers.customer\_id = sales.customer\_id

JOIN city ON city.city\_id = customers.city\_id

GROUP BY city.city\_id, city.city\_name

ORDER BY unique\_customers DESC

LIMIT 3;

**Based on order count:**

SELECT

city.city\_name,

SUM(sales.total\_amount) AS total\_sales,

COUNT(DISTINCT sales.customer\_id) AS unique\_customers,

COUNT(sales.sale\_id) AS order\_count

FROM sales

JOIN customers ON customers.customer\_id = sales.customer\_id

JOIN city ON city.city\_id = customers.city\_id

GROUP BY city.city\_id, city.city\_name

ORDER BY order\_count DESC

LIMIT 3;

1. **Final Recommendations** 
   * **What are the final recommendations for expanding Monday Coffee shops?**

Ans: Based on the analysis of Monday Coffee's sales data since January 2023, the top three Indian cities recommended for opening new coffee shop locations are **Delhi**, **Pune**, and **Jaipur**, due to their strong consumer demand and high sales performance. These cities demonstrate the greatest potential for successful expansion.

SELECT \*

FROM (

SELECT

city\_name,

total\_sales,

unique\_customers,

order\_count,

RANK() OVER (ORDER BY total\_sales DESC) AS sales\_rank,

RANK() OVER (ORDER BY unique\_customers DESC) AS customer\_rank,

RANK() OVER (ORDER BY order\_count DESC) AS order\_rank

FROM (

SELECT

city.city\_name,

SUM(sales.total\_amount) AS total\_sales,

COUNT(DISTINCT sales.customer\_id) AS unique\_customers,

COUNT(sales.sale\_id) AS order\_count

FROM sales

JOIN customers ON customers.customer\_id = sales.customer\_id

JOIN city ON city.city\_id = customers.city\_id

GROUP BY city.city\_id, city.city\_name

) AS city\_stats

) AS ranked\_cities

WHERE sales\_rank <= 3 OR customer\_rank <= 3 OR order\_rank <= 3

ORDER BY city\_name

;