**PROJECT- CUSTOMER CREDIT CARD SPEND ANALYSIS**

**Customer Data**

* **Columns**: num, customer\_id, age, city, card\_type, credit\_limit, company, job\_segment
* Represents customer demographic and card information.

**Repayment Data**

* **Columns**: sl\_no, customer\_id, date, amount
* Contains repayment transactions by customers.

**Spend Data**

* **Columns**: sl\_no, customer\_id, date, product\_type, amount
* Tracks spending transactions across various categories.

**1. Database Creation**

First, we need to create a database to store the tables.

**SQL Command**:

CREATE DATABASE credit\_card\_analysis;

**2. Table Creation**

Define the schema for the Customer, Repayment, and Spending tables based on the CSV files.

**Table 1: Customer**

CREATE TABLE Customer (

num SERIAL PRIMARY KEY,

customer\_id VARCHAR(10) UNIQUE NOT NULL,

age INT NOT NULL,

city VARCHAR(50) NOT NULL,

card\_type VARCHAR(20) NOT NULL,

credit\_limit NUMERIC(15, 2) NOT NULL,

company VARCHAR(50),

job\_segment VARCHAR(50)

);

**Table 2: Repayment**

CREATE TABLE Repayment (

sl\_no SERIAL PRIMARY KEY,

customer\_id VARCHAR(10) REFERENCES Customer(customer\_id) ON DELETE CASCADE,

date DATE NOT NULL,

amount NUMERIC(15, 2) NOT NULL

);

**Table 3: Spend**

CREATE TABLE Spend (

sl\_no SERIAL PRIMARY KEY,

customer\_id VARCHAR(10) REFERENCES Customer(customer\_id) ON DELETE CASCADE,

date DATE NOT NULL,

product\_type VARCHAR(50) NOT NULL,

amount NUMERIC(15, 2) NOT NULL

);

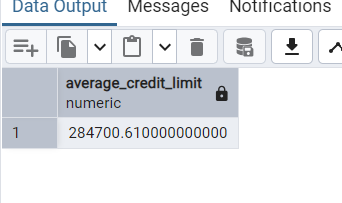
3. **Data Import:** right click on customer table select option import/export then select the file/path then click ok

**QUESTIONS – SQL**

* 1. **What is the average credit limit?**

SELECT AVG(credit\_limit) AS average\_credit\_limit FROM Customer;

**Output:**

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* 1. **Which type of credit card is most commonly held by customers?**

SELECT card\_type, COUNT(\*) AS count

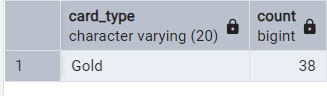
FROM Customer

GROUP BY card\_type

ORDER BY count DESC

LIMIT 1;

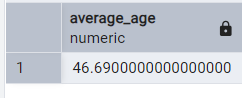
**Output:**

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* 1. **What is the average age of credit card holders?**

SELECT AVG(age) AS average\_age FROM Customer;

**Output:**

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* 1. **What is the most common spending category?**

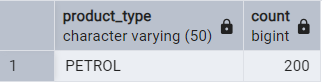
SELECT product\_type, COUNT(\*) AS count

FROM Spend

GROUP BY product\_type

ORDER BY count DESC

LIMIT 1;

**Output:**

* 1. **Show the month-wise spend across the years in descending order.**

SELECT

DATE\_TRUNC('month', date) AS year\_month,

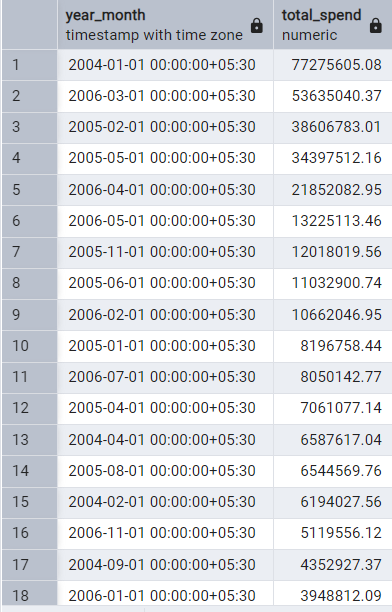
SUM(amount) AS total\_spend

FROM Spend

GROUP BY DATE\_TRUNC('month', date)

ORDER BY total\_spend DESC;

**Output:**

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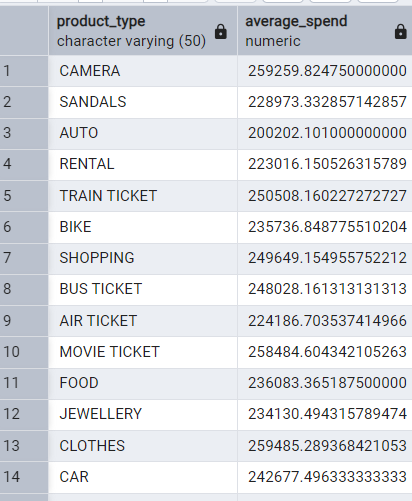
* 1. **What is the average spend per category?**

SELECT product\_type, AVG(amount) AS average\_spend

FROM Spend

GROUP BY product\_type;

**Output**:



* 1. **What is the average no. of transactions per month?**

SELECT AVG(transaction\_count) AS average\_transactions\_per\_month

FROM (

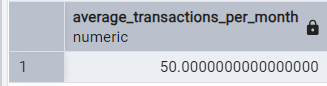
SELECT COUNT(\*) AS transaction\_count, DATE\_TRUNC('month', date) AS month

FROM Spend

GROUP BY month

) AS monthly\_transactions;

**Output:**

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* 1. **List the top 5 cities with the highest amount spent along with their no. of transactions.**

SELECT c.city, SUM(s.amount) AS total\_spend, COUNT(s.sl\_no) AS transaction\_count

FROM Spend s

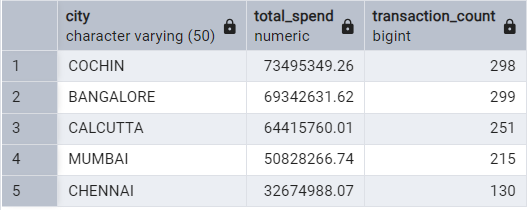
JOIN Customer c ON s.customer\_id = c.customer\_id

GROUP BY c.city

ORDER BY total\_spend DESC

LIMIT 5;

**Output:**

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* 1. **List the card types and the amount spent with them over the years.**

SELECT c.card\_type, DATE\_PART('year', s.date) AS year, SUM(s.amount) AS total\_spend

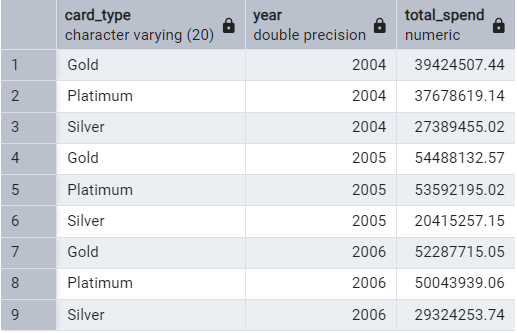
FROM Spend s

JOIN Customer c ON s.customer\_id = c.customer\_id

GROUP BY c.card\_type, year

ORDER BY year, total\_spend DESC;

**Output:**

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* 1. **Which is the most commonly used credit card type?**

SELECT card\_type, COUNT(\*) AS usage\_count

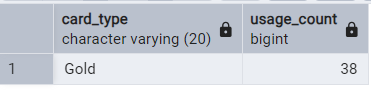
FROM Customer

GROUP BY card\_type

ORDER BY usage\_count DESC

LIMIT 1;

**Output:**

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* 1. **What is the average no. of days a customer pays off their credit card bill?**
  2. **What is the rate of late-paying customers, assume the no. of days to pay off the bill is 30 days.**

SELECT

(COUNT(\*) / (SELECT COUNT(\*) FROM Customer)) \* 100 AS LatePaymentRate

FROM (

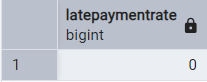
SELECT DISTINCT customer\_id

FROM repayment

WHERE (date - INTERVAL '30 days') > (SELECT MIN(date) FROM repayment WHERE customer\_id = repayment.customer\_id)

) AS LatePayers;

**Output:**

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**13. Show the customer base city-wise in descending order.**

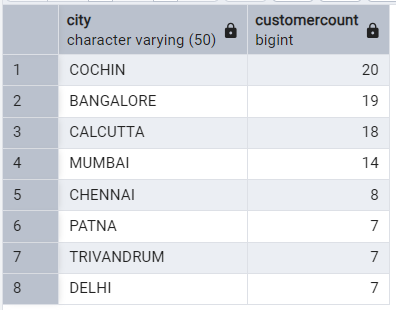
SELECT City, COUNT(\*) AS CustomerCount

FROM Customer

GROUP BY City

ORDER BY CustomerCount DESC;

**Output:**

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* 1. **What is the spending range of each customer?**

SELECT

customer\_id,

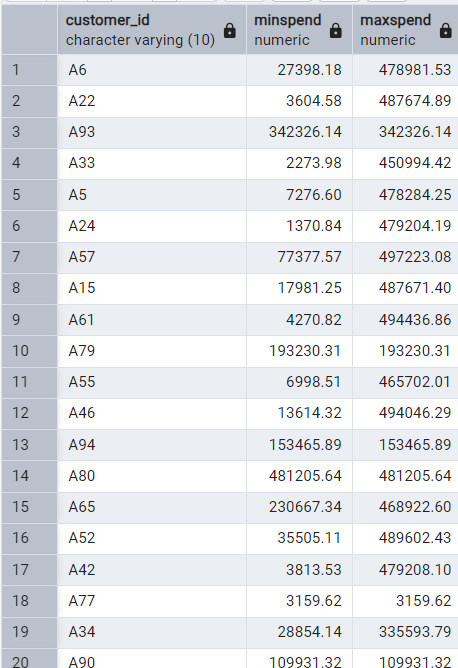
MIN(amount) AS MinSpend,

MAX(amount) AS MaxSpend

FROM repayment

GROUP BY customer\_id;

**Output:**

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