SQL Analysis Tasks Based on Provided Datasets

-- 1. Total Number of Transactions

SELECT COUNT(\*) AS total\_transactions

FROM cc\_data;

-- 2. Top 10 Most Frequent Merchants

SELECT merchant, COUNT(\*) AS transaction\_count

FROM cc\_data

GROUP BY merchant

ORDER BY transaction\_count DESC

LIMIT 10;

-- 3. Average Transaction Amount for Each Category

SELECT category, AVG(amt) AS average\_amount

FROM cc\_data

GROUP BY category;

-- 4. Number and Percentage of Fraudulent Transactions

SELECT COUNT(\*) AS fraud\_count

FROM cc\_data

WHERE is\_fraud = 1;

SELECT

100.0 \* SUM(CASE WHEN is\_fraud = 1 THEN 1 ELSE 0 END) / COUNT(\*) AS fraud\_percentage

FROM cc\_data;

-- 5. Join cc\_data and location\_data to Get Latitude and Longitude

SELECT c.\*, l.lat, l.long

FROM cc\_data c

JOIN location\_data l ON c.cc\_num = l.cc\_num;

-- 6. City with the Highest Population

SELECT city, MAX(city\_pop) AS max\_population

FROM cc\_data

GROUP BY city

ORDER BY max\_population DESC

LIMIT 1;

-- 7. Earliest and Latest Transaction Dates

SELECT

MIN(trans\_date\_trans\_time) AS earliest\_transaction,

MAX(trans\_date\_trans\_time) AS latest\_transaction

FROM cc\_data;

-- 8. Total Amount Spent Across All Transactions

SELECT SUM(amt) AS total\_spent

FROM cc\_data;

-- 9. Number of Transactions per Category

SELECT category, COUNT(\*) AS transaction\_count

FROM cc\_data

GROUP BY category

ORDER BY transaction\_count DESC;

-- 10. Average Transaction Amount by Gender

SELECT gender, AVG(amt) AS average\_transaction\_amount

FROM cc\_data

GROUP BY gender;

-- 11. Day of the Week with Highest Average Transaction Amount

SELECT DAYNAME(STR\_TO\_DATE(trans\_date\_trans\_time, '%d-%m-%Y %H:%i')) AS "Day", AVG(amt) "Highest\_Average"

FROM cc\_data

GROUP BY DAYNAME(STR\_TO\_DATE(trans\_date\_trans\_time, '%d-%m-%Y %H:%i'))

ORDER BY Highest\_Average DESC

LIMIT 1;