**SQL Queries**

**Active Company Query**

SELECT

DATE\_FORMAT(Transaction\_Date, '%Y-%m') AS active\_month,

COUNT(DISTINCT Company\_Name) AS active\_count

FROM Transactions

GROUP BY active\_month

ORDER BY active\_month;

**Churn Company Query**

WITH active\_previous\_month AS (

-- Companies that had transactions in the previous month

SELECT DISTINCT company\_name

FROM transactions

WHERE transaction\_date >= '2024-11-01' -- First day of the previous month

AND transaction\_date < '2024-12-01' -- First day of the current month

),

active\_current\_month AS (

-- Companies that had transactions in the current month

SELECT DISTINCT company\_name

FROM transactions

WHERE transaction\_date >= '2024-12-01' -- First day of the current month

AND transaction\_date < '2024-12-31' -- First day of the next month

),

churned\_companies AS (

-- Companies that were active in the previous month but have no transactions in the current month

SELECT a.company\_name

FROM active\_previous\_month a

LEFT JOIN active\_current\_month c ON a.company\_name = c.company\_name

WHERE c.company\_name IS NULL -- If no match in current month, then the company churned

)

SELECT

Count(\*) AS churned\_companies\_count

FROM churned\_companies;

**PART 2**

**Identify the top and bottom industries based on transaction volume and success rate.**

WITH Transaction\_volume AS (

SELECT

Company\_name,

SUM(Transaction\_Initiated) AS Total\_Transactions,

SUM(Transaction\_Success) AS Successful\_Transactions,

ROUND((SUM(Transaction\_Success) \* 100.0) / NULLIF(SUM(Transaction\_Initiated), 0), 2) AS Success\_Rate

FROM Transactions

GROUP BY Company\_name

)

(

-- Top 5 Industries (Highest Transaction Volume)

SELECT 'Top 5 Volume' AS RankType, Company\_name, Total\_Transactions, Success\_Rate

FROM Transaction\_volume

ORDER BY Total\_Transactions DESC

LIMIT 5

)

UNION ALL

(

-- Bottom 5 Industries (Lowest Transaction Volume)

SELECT 'Bottom 5 Volume' AS RankType, Company\_name, Total\_Transactions, Success\_Rate

FROM Transaction\_volume

ORDER BY Total\_Transactions ASC

LIMIT 5

)

UNION ALL

(

-- Top 5 Industries (Highest Success Rate)

SELECT 'Top 5 Success Rate' AS RankType, Company\_name, Total\_Transactions, Success\_Rate

FROM Transaction\_volume

ORDER BY Success\_Rate DESC

LIMIT 5

)

UNION ALL

(

-- Bottom 5 Industries (Lowest Success Rate)

SELECT 'Bottom 5 Success Rate' AS RankType, Company\_name, Total\_Transactions, Success\_Rate

FROM Transaction\_volume

ORDER BY Success\_Rate ASC

LIMIT 5

);

**Identify industries with higher churn rates**

WITH MonthlyActive AS (

SELECT

DATE\_FORMAT(Transaction\_Date, '%Y-%m') AS Month,

Industry,

Company\_Name

FROM Transactions

WHERE Transaction\_Initiated > 0

GROUP BY Month, Industry, Company\_Name

),

IndustryActive AS (

SELECT

Month,

Industry,

COUNT(DISTINCT Company\_Name) AS Active\_Companies

FROM MonthlyActive

GROUP BY Month, Industry

),

PreviousMonth AS (

SELECT

IA.Month,

IA.Industry,

IA.Active\_Companies,

LAG(IA.Active\_Companies) OVER (PARTITION BY IA.Industry ORDER BY IA.Month) AS Prev\_Active\_Companies

FROM IndustryActive IA

)

SELECT

PM.Month,

PM.Industry,

PM.Prev\_Active\_Companies,

PM.Active\_Companies,

(PM.Prev\_Active\_Companies - PM.Active\_Companies) AS Churned\_Companies,

ROUND(((PM.Prev\_Active\_Companies - PM.Active\_Companies) \* 100.0) / NULLIF(PM.Prev\_Active\_Companies, 0), 2) AS Churn\_Rate

FROM PreviousMonth PM

WHERE PM.Prev\_Active\_Companies IS NOT NULL

ORDER BY PM.Month DESC;