select \* from customerchurn;

alter table customerchurn change column `Tenure in months` Tenureinmonths VARCHAR(100);

# 1 Identify the total number of customers and the churn rate

# count of customers

SELECT count(customerID) as distinct\_customers

FROM customerchurn;

ALTER TABLE customerchurn add churned int;

UPDATE customerchurn SET churned = CASE

when `customerstatus` = 'Churned' then 1

when `customerstatus` = 'Stayed' then 0

when `customerstatus` = 'Joined' then 0

END;

# churned rate

SELECT (sum(churned) / count(\*)) \* 100 AS churnrate

FROM customerchurn;

# 2 average age of churned customers

SELECT (sum(age)/count(\*)) as average\_age

FROM customerchurn;

# 3 Discover the most common contract types among churned customers

SELECT

Contract,

COUNT(\*) AS Number\_of\_Churned\_Customers

FROM

customerchurn

WHERE

Customerstatus = 'Churned'

GROUP BY

Contract

ORDER BY

Number\_of\_Churned\_Customers desc;

# 4 Analyze the distribution of monthly charges among churned customers

SELECT

AVG(monthlycharge) AS average\_monthly\_charges,

MIN(monthlycharge) AS minimum\_monthly\_charges,

MAX(monthlycharge) AS maximum\_monthly\_charges,

SUM(monthlycharge) AS sum\_of\_monthly\_charges,

STDDEV(monthlycharge) AS stddev\_monthly\_charges

FROM

customerchurn

WHERE

churned = 1;

# 5 Query to identify the contract types that are most prone to churn

SELECT

Contract,

COUNT(\*) AS Total\_Customers,

SUM(CASE WHEN Customerstatus = 'Churned' THEN 1 ELSE 0 END) AS Churned\_Customers,

(SUM(CASE WHEN Customerstatus = 'Churned' THEN 1 ELSE 0 END)/ COUNT(\*)) \* 100 AS Churn\_Rate\_Percent

FROM

customerchurn

GROUP BY

Contract

ORDER BY

Churn\_Rate\_Percent desc;

# 6 Identify customers with high total charges who have churned

SELECT

CustomerID,

TotalCharges,

Customerstatus

FROM

Customerchurn

WHERE

Customerstatus = 'Churned'

ORDER BY

Totalcharges desc;

# 7 The total charges distribution for churned and non-churned customers

SELECT

Customerstatus,

COUNT(\*) AS CustomerCount,

AVG(Totalcharges) AS Avg\_Total\_Charges,

MIN(Totalcharges) AS Min\_Total\_Charges,

MAX(Totalcharges) AS Max\_Total\_Charges,

SUM(Totalcharges) AS Total\_Sum\_Charges

FROM

customerchurn

GROUP BY

Customerstatus

ORDER BY

Customercount desc;

# 8 The average monthly charges for different contract types among churned customers

SELECT

Contract AS Contract\_type\_churned,

AVG(Monthlycharge) AS Avg\_Monthly\_Charges

FROM

customerchurn

WHERE

Customerstatus = 'Churned'

GROUP BY

Contract

ORDER BY

Avg\_Monthly\_Charges desc;

# 9 Identify customers who have both online security and online backup services and have not churned

SELECT

CustomerID,

Onlinesecurity,

Onlinebackup,

Customerstatus

FROM

customerchurn

WHERE

Onlinesecurity = 'Yes'

AND Onlinebackup = 'Yes'

AND Churned = 0

ORDER BY

customerstatus;

# 10 Determine the most common combinations of services among churned customers

SELECT

PhoneService,

InternetService,

OnlineSecurity,

OnlineBackup,

DeviceProtectionPlan,

PremiumTechSupport,

StreamingTV,

StreamingMovies,

StreamingMusic,

UnlimitedData,

COUNT(\*) AS count

FROM

customerchurn

WHERE

churned = 1

GROUP BY

PhoneService,

InternetService,

OnlineSecurity,

OnlineBackup,

DeviceProtectionPlan,

PremiumTechSupport,

StreamingTV,

StreamingMovies,

StreamingMusic,

UnlimitedData

ORDER BY

count desc;

# 11 Average total charges for customers grouped by gender and marital status

SELECT

gender,

married,

AVG(totalcharges) AS average\_total\_charges

FROM

customerchurn

GROUP BY

gender,

married;

# 12 The average monthly charges for different age groups among churned customers

SELECT

CASE

WHEN age < 20 THEN 'Under 20'

WHEN age BETWEEN 20 AND 29 THEN '20-29'

WHEN age BETWEEN 30 AND 39 THEN '30-39'

WHEN age BETWEEN 40 AND 49 THEN '40-49'

WHEN age BETWEEN 50 AND 59 THEN '50-59'

ELSE '60 and above'

END AS age\_group,

AVG(monthlycharge) AS average\_monthly\_charges

FROM

customerchurn

WHERE

churned = 1

GROUP BY

age\_group

ORDER BY

age\_group;

# 13 The average age and total charges for customers with multiple lines and online backup

SELECT

AVG(age) AS average\_age,

SUM(totalcharges) AS total\_charges

FROM

customerchurn

WHERE

multiplelines = 'yes' AND

onlinebackup = 'yes';

# 14 Identify the contract types with the highest churn rate among senior citizens (age 65 and over)

SELECT

Contract,

(sum(churned) / count(\*)) \* 100 AS churnrate

FROM

customerchurn

WHERE

age >= 65

GROUP BY

Contract

ORDER BY

churnrate desc;

# 15 The average monthly charges for customers who have multiple lines and streaming TV

SELECT

AVG(monthlycharge) AS average\_monthly\_charges

FROM

customerchurn

WHERE

multiplelines = 'yes' AND

streamingtv = 'yes';

# 16 The customers who have churned and used the most online services

SELECT

customerid,

(CASE WHEN OnlineSecurity = 'yes' THEN 1 ELSE 0 END +

CASE WHEN OnlineBackup = 'yes' THEN 1 ELSE 0 END +

CASE WHEN StreamingTV = 'yes' THEN 1 ELSE 0 END +

CASE WHEN StreamingMovies = 'yes' THEN 1 ELSE 0 END +

CASE WHEN StreamingMusic = 'yes' THEN 1 ELSE 0 END ) AS total\_online\_services

FROM

customerchurn

WHERE

churned = 1

ORDER BY

total\_online\_services desc;

# 17 The average age and total charges for customers with different combinations of streaming services

SELECT

streamingtv,

streamingmovies,

streamingmusic,

AVG(age) AS average\_age,

SUM(totalcharges) AS total\_charges

FROM

customerchurn

GROUP BY

streamingtv,

streamingmovies,

streamingmusic

ORDER BY

total\_charges desc;

# 18 The gender distribution among customers who have churned and are on yearly contracts

SELECT

gender,

COUNT(\*) AS number\_of\_customers

FROM

customerchurn

WHERE

churned = 1 and

contract = 'One year'

GROUP BY

gender;

# 19 The average monthly charges and total charges for customers who have churned, grouped by contract type and internet service type

SELECT

contract,

internettype,

AVG(monthlycharge) AS average\_monthly\_charges,

SUM(totalcharges) AS total\_charges

FROM

customerchurn

WHERE

churned = 1

GROUP BY

contract,

internettype

ORDER BY

contract,

internettype;

# 20 The customers who have churned and are not using online services, and their average total charges

SELECT

AVG(totalcharges) AS average\_total\_charges

FROM

customerchurn

WHERE

churned = 1

and onlinebackup = 'no'

or onlinebackup = 'null'

and onlinesecurity = 'no'

or onlinesecurity = 'null';

# 21 The average monthly charges and total charges for customers who have churned, grouped by the number of dependents

alter table customerchurn change column `Number of Dependents` NumberofDependents VARCHAR(100);

SELECT

NumberofDependents,

AVG(monthlycharge) AS average\_monthly\_charges,

SUM(totalcharges) AS total\_charges

FROM

customerchurn

WHERE

churned = 1

GROUP BY

NumberofDependents;

# 22 The customers who have churned, and their contract duration in months (for monthly contracts)

SELECT

CustomerID,

TenureinMonths as tenure\_in\_months

FROM

customerchurn

WHERE

Churned = 1 AND

Contract = 'Month-to-Month'

ORDER BY

tenure\_in\_months desc;

# 23 The average age and total charges for customers who have churned, grouped by internet service and phone service

SELECT

internetservice,

phoneservice,

AVG(age) AS average\_age,

SUM(totalcharges) AS total\_charges

FROM

customerchurn

WHERE

churned = 1

GROUP BY

internetservice,

phoneservice;