**Data Exploration – Check Distinct Values**

create database db\_churn;

use db\_churn;

select \* from stg\_churn;

select Gender , COUNT(Gender) as TotalCount,

count(Gender) \* 100.0 / (select count(\*) from stg\_churn) as Percentage

from stg\_churn

group by Gender;

select Contract , count(Contract) as TotalCount ,

count(Contract) \* 100.0 / (select count(\*) from stg\_churn) as Percentage

from stg\_churn

group by Contract;

select Customer\_Status , count(Customer\_Status) as TotalCount ,

sum(Total\_Revenue) as TotalRev ,

sum(Total\_Revenue) / (select sum(Total\_Revenue) from stg\_churn) \* 100 as RevPercentage

from stg\_churn

group by Customer\_Status;

select State , count(State) as TotalCount,

count(State) \* 100.0 / (select count(\*) from stg\_churn) as Percentage

from stg\_churn

group by State

order by Percentage desc;

select distinct Internet\_Type

from stg\_churn;

**Data Exploration – Check Nulls**

SELECT

SUM(CASE WHEN Customer\_ID IS NULL or Customer\_ID = '' THEN 1 ELSE 0 END) AS Customer\_ID\_Null\_Count,

SUM(CASE WHEN Gender IS NULL or Gender = '' THEN 1 ELSE 0 END) AS Gender\_Null\_Count,

SUM(CASE WHEN Age IS NULL or Age = '' THEN 1 ELSE 0 END) AS Age\_Null\_Count,

SUM(CASE WHEN Married IS NULL or Married = '' THEN 1 ELSE 0 END) AS Married\_Null\_Count,

SUM(CASE WHEN State IS NULL or State = '' THEN 1 ELSE 0 END) AS State\_Null\_Count,

SUM(CASE WHEN Number\_of\_Referrals IS NULL or Number\_of\_Referrals = '' THEN 1 ELSE 0 END) AS Number\_of\_Referrals\_Null\_Count,

SUM(CASE WHEN Tenure\_in\_Months IS NULL or Tenure\_in\_Months = '' THEN 1 ELSE 0 END) AS Tenure\_in\_Months\_Null\_Count,

SUM(CASE WHEN Value\_Deal IS NULL or Value\_Deal = '' THEN 1 ELSE 0 END) AS Value\_Deal\_Null\_Count,

SUM(CASE WHEN Phone\_Service IS NULL or Phone\_Service = '' THEN 1 ELSE 0 END) AS Phone\_Service\_Null\_Count,

SUM(CASE WHEN Multiple\_Lines IS NULL or Multiple\_Lines = '' THEN 1 ELSE 0 END) AS Multiple\_Lines\_Null\_Count,

SUM(CASE WHEN Internet\_Service IS NULL or Internet\_Service = '' THEN 1 ELSE 0 END) AS Internet\_Service\_Null\_Count,

SUM(CASE WHEN Internet\_Type IS NULL or Internet\_Type = '' THEN 1 ELSE 0 END) AS Internet\_Type\_Null\_Count,

SUM(CASE WHEN Online\_Security IS NULL or Online\_Security = '' THEN 1 ELSE 0 END) AS Online\_Security\_Null\_Count,

SUM(CASE WHEN Online\_Backup IS NULL or Online\_Backup = '' THEN 1 ELSE 0 END) AS Online\_Backup\_Null\_Count,

SUM(CASE WHEN Device\_Protection\_Plan IS NULL or Device\_Protection\_Plan = '' THEN 1 ELSE 0 END) AS Device\_Protection\_Plan\_Null\_Count,

SUM(CASE WHEN Premium\_Support IS NULL or Premium\_Support = '' THEN 1 ELSE 0 END) AS Premium\_Support\_Null\_Count,

SUM(CASE WHEN Streaming\_TV IS NULL or Streaming\_TV = '' THEN 1 ELSE 0 END) AS Streaming\_TV\_Null\_Count,

SUM(CASE WHEN Streaming\_Movies IS NULL or Streaming\_Movies = '' THEN 1 ELSE 0 END) AS Streaming\_Movies\_Null\_Count,

SUM(CASE WHEN Streaming\_Music IS NULL or Streaming\_Music = '' THEN 1 ELSE 0 END) AS Streaming\_Music\_Null\_Count,

SUM(CASE WHEN Unlimited\_Data IS NULL or Unlimited\_Data = '' THEN 1 ELSE 0 END) AS Unlimited\_Data\_Null\_Count,

SUM(CASE WHEN Contract IS NULL or Contract = '' THEN 1 ELSE 0 END) AS Contract\_Null\_Count,

SUM(CASE WHEN Paperless\_Billing IS NULL or Paperless\_Billing = '' THEN 1 ELSE 0 END) AS Paperless\_Billing\_Null\_Count,

SUM(CASE WHEN Payment\_Method IS NULL or Payment\_Method = '' THEN 1 ELSE 0 END) AS Payment\_Method\_Null\_Count,

SUM(CASE WHEN Monthly\_Charge IS NULL or Monthly\_Charge = '' THEN 1 ELSE 0 END) AS Monthly\_Charge\_Null\_Count,

SUM(CASE WHEN Total\_Charges IS NULL or Total\_Charges = '' THEN 1 ELSE 0 END) AS Total\_Charges\_Null\_Count,

SUM(CASE WHEN Total\_Refunds IS NULL or Total\_Refunds = '' THEN 1 ELSE 0 END) AS Total\_Refunds\_Null\_Count,

SUM(CASE WHEN Total\_Extra\_Data\_Charges IS NULL or Total\_Extra\_Data\_Charges = '' THEN 1 ELSE 0 END) AS Total\_Extra\_Data\_Charges\_Null\_Count,

SUM(CASE WHEN Total\_Long\_Distance\_Charges IS NULL or Total\_Long\_Distance\_Charges = '' THEN 1 ELSE 0 END) AS Total\_Long\_Distance\_Charges\_Null\_Count,

SUM(CASE WHEN Total\_Revenue IS NULL or Total\_Revenue = '' THEN 1 ELSE 0 END) AS Total\_Revenue\_Null\_Count,

SUM(CASE WHEN Customer\_Status IS NULL or Customer\_Status = '' THEN 1 ELSE 0 END) AS Customer\_Status\_Null\_Count,

SUM(CASE WHEN Churn\_Category IS NULL or Churn\_Category = '' THEN 1 ELSE 0 END) AS Churn\_Category\_Null\_Count,

SUM(CASE WHEN Churn\_Reason IS NULL or Churn\_Reason = '' THEN 1 ELSE 0 END) AS Churn\_Reason\_Null\_Count

FROM stg\_Churn;

**Remove null and insert the new data into Prod table**

CREATE TABLE cleaned\_Churn AS

SELECT

Customer\_ID,

Gender,

Age,

Married,

State,

Number\_of\_Referrals,

Tenure\_in\_Months,

IFNULL(NULLIF(TRIM(Value\_Deal), ''), 'None') AS Value\_Deal,

Phone\_Service,

IFNULL(NULLIF(TRIM(Multiple\_Lines), ''), 'No') AS Multiple\_Lines,

Internet\_Service,

IFNULL(NULLIF(TRIM(Internet\_Type), ''), 'None') AS Internet\_Type,

IFNULL(NULLIF(TRIM(Online\_Security), ''), 'No') AS Online\_Security,

IFNULL(NULLIF(TRIM(Online\_Backup), ''), 'No') AS Online\_Backup,

IFNULL(NULLIF(TRIM(Device\_Protection\_Plan), ''), 'No') AS Device\_Protection\_Plan,

IFNULL(NULLIF(TRIM(Premium\_Support), ''), 'No') AS Premium\_Support,

IFNULL(NULLIF(TRIM(Streaming\_TV), ''), 'No') AS Streaming\_TV,

IFNULL(NULLIF(TRIM(Streaming\_Movies), ''), 'No') AS Streaming\_Movies,

IFNULL(NULLIF(TRIM(Streaming\_Music), ''), 'No') AS Streaming\_Music,

IFNULL(NULLIF(TRIM(Unlimited\_Data), ''), 'No') AS Unlimited\_Data,

Contract,

Paperless\_Billing,

Payment\_Method,

Monthly\_Charge,

Total\_Charges,

Total\_Refunds,

Total\_Extra\_Data\_Charges,

Total\_Long\_Distance\_Charges,

Total\_Revenue,

Customer\_Status,

IFNULL(NULLIF(TRIM(Churn\_Category), ''), 'Others') AS Churn\_Category,

IFNULL(NULLIF(TRIM(Churn\_Reason), ''), 'Others') AS Churn\_Reason

FROM stg\_Churn;

select \* from cleaned\_churn;

**Create View for Power BI**

create view vw\_churnData as

select \* from cleaned\_churn where Customer\_Status in ('Churned' , 'Stayed');

create view vw\_joinData as

select \* from cleaned\_churn where Customer\_Status = 'Joined'