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| TELECOM INDUSTRY ANALYTICS |
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* Call Trend Analytics
* Customer Churn Analytics
* HR Diversion & Inclusion Analytics

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# INTRODUCTION

This is a Virtual Internship Project from the Company PWC, in this project I will be helping the company to solve an important problem.

Fiddling around in Excel sheets just doesn’t suit a digital jedi. The PwC’s Digital Upskilling Academy helps people move from zero to digital hero. PwC is upskilling 284,000 people because the right digital skills make us agile, adaptable and fit for the future.

We use powerful Data Analytics tools to help solve business problems for our clients. Learning to master Power BI is a good first step. By empowering you to identify patterns, risks and opportunities in data, you will work more efficiently. You will be able to clearly visualise the value of data and turn it into convincing, actionable insights.

# ABSTRACT OF THE PROJECT

Create a Dashboard in Power Bi for Visualizing relevant KPI's and Metrics in the Datasets provided.

Utilize the resources provided, including Podcasts and Articles, to enhance the understanding of Data Visualization and Upskilling.

Respond to the client requests by providing a well-designed Power Bi Dashboard reflecting to the KPI's.

# PROGRAMMING / TOOLS USED

1) SQL - Microsoft SQL Server Management Studio.

2) Data Visualization - Microsoft Power Bi.

All the Queries for SQL and Data Analysis Expression for Power Bi, Related to the Tasks are Attached to Word files in the respective folders.

# EXPLORATORY DATA ANALYSIS

Data analysis is the process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information, informing conclusions, and supporting decision-making.

Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, and is used in different business, science, and social science domains.

In today's business world, data analysis plays a role in making decisions more scientific and helping businesses operate more effectively.

# TASK 1: CALL TREND ANALYTICS

# Dataset Overview:

# The Telecom Industry fights hard for their customers. Our client needs help.

# The Call Center Manager can’t see what the trends are. Our Dashboard should make everything clear.

# The Abstract of the project is to create a Interactive Dashboard in Power Bi for the Call Center Manager to understand the Trends of the Dataset.

# Key Perfromace Indicator Metrics:

1. Total Calls Received:

Count of Total Call\_Id.

1. Total Calls Answered:

Count the values of Call\_Id for Answered is Yes.

1. Total Calls Resolved:

Count the values of Call\_Id for Resolved is Yes.

1. Average Speed of Answer:

Calculate the Average for the Speed of Answered in Seconds Column.

1. Average Satisfaction Rating:

Calculate the Average for Satistication Rating.

1. Calls Answered & Abandoned:

Calculate the Percentage of Calls Answered and Calls Abandoned by the Total Count of Call\_Id.

1. Calls Resolved & Un-resolved:

Calculate the Percentage of Calls Resolved and Un-Resolved by the Total Count of Call\_Id.

1. Total Calls Received by Month (Answered Yes / No):

Calculate the Total Calls Resolved or Unresolved on Average Talk Duration by Calls received.

1. Average Talk Duration by Calls Answered (Resolved Yes / No):
2. Filter by Topic:

Filter the whole Analysis by Topic.

1. Filter by Agent:

Filter the whole Analysis through Agent name.

1. Filter by Time Hours:

Filter the Whole Analysis through Time Hour.

# Exploratory Data Analysis:

SQL Queries:

-- READ DATA

SELECT \*

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

---------------------------------------------------------------------------

-- 1) Total Calls Recieved :

-- 1.1) Overall Calls Received :

SELECT COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 1.2) Total Calls by Topic :

SELECT Topic, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 1.3) Total Calls by Agent :

SELECT Agent, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 1.4) Total Calls by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Call\_Id) AS Total\_Calls\_Received

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 2) Total Calls Answered :

-- 2.1) Overall Calls Answered

SELECT COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

-- 2.2) Total Calls Answered by Topic :

SELECT Topic, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY Topic

-- 2.3) Total Calls Answered by Agent :

SELECT Agent, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY Agent

-- 2.4) Total Calls Answered by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Answered\_Y\_N) AS Total\_Calls\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Answered\_Y\_N = 1

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 3) Total Calls Resolved :

-- 3.1) Overall Calls Resolved :

SELECT COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

-- 3.2) Total Calls Resolved by Topic :

SELECT Topic, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY Topic

-- 3.3) Total Calls Resolved by Agent :

SELECT Agent, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY Agent

-- 3.4) Total Calls Resolved by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, COUNT(Resolved) AS Total\_Calls\_Resolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE Resolved = 1

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 4) Speed of Answer :

-- 4.1) Average Speed of Answer :

SELECT AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 4.2) Average Speed of Answer by Topic :

SELECT Topic, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 4.3) Average Speed of Answer by Agent :

SELECT Agent, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 4.4) Average Speed of Answer by Hour :

SELECT DATEPART(HOUR, Time) AS DataHour, AVG(ISNULL(Speed\_of\_answer\_in\_seconds, 0)) AS Average\_Speed\_Of\_Call\_Answered

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 5) Satisfactory Rating :

-- 5.1) Average Satisfactory Rating :

SELECT AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

-- 5.2) Average Satisfactory Rating by Topic:

SELECT Topic, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Topic

-- 5.3) Average Satisfactory Rating by Agent:

SELECT Agent, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Agent

-- 5.4) Average Satisfactory Rating by Hour:

SELECT DATEPART(HOUR, Time) AS DataHour, AVG(ISNULL(Satisfaction\_rating, 0)) AS Average\_Satisfactory\_Rating

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY DATEPART(HOUR, Time)

---------------------------------------------------------------------------

-- 6.A) Ratio Calls Answered and Abandoned :

SELECT COUNT(Call\_Id) AS Calls\_Received,

CASE WHEN Answered\_Y\_N = 1 THEN 'Yes' ELSE 'No' END AS Calls\_Answered\_and\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Answered\_Y\_N

-- 6.B) Percentage of Calls Answered and Abandoned :

SELECT

CEILING(SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Answered,

CEILING(SUM(CASE WHEN Answered\_Y\_N = 0 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

---------------------------------------------------------------------------

-- 7.A) Ratio of Calls Resolved and Unresolved :

SELECT COUNT(Call\_Id) AS Calls\_Received,

CASE WHEN Resolved = 1 THEN 'Yes' ELSE 'No' END AS Calls\_Resolved\_and\_Unresolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY Resolved

-- 7.B) Percentage of Calls Resolved and Unresolved :

SELECT

CEILING(SUM(CASE WHEN Resolved = 1 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Answered,

CEILING(SUM(CASE WHEN Resolved = 0 THEN 1 ELSE 0 END) \* 100 / COUNT(Call\_Id)) AS Percentage\_Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

---------------------------------------------------------------------------

-- Total Calls Received by Months vs Answered and Abandoned :

SELECT

(CASE WHEN MONTH(Date) = 1 THEN 'Jan'

WHEN MONTH(Date) = 2 THEN 'Feb'

WHEN MONTH(Date) = 3 THEN 'Mar'

ELSE NULL

END) AS Months,

COUNT(Call\_ID) AS Total\_Calls\_Received,

SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) AS Calls\_Answered,

SUM(CASE WHEN Answered\_Y\_N = 0 THEN 1 ELSE 0 END) AS Calls\_Abandoned

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

GROUP BY MONTH(Date)

---------------------------------------------------------------------------

-- Average Talk Duration in Minutes by Calls Answered vs Resolved and Unresolved :

SELECT DATEPART(MINUTE, AvgTalkDuration) AS Avg\_Mins,

SUM(CASE WHEN Answered\_Y\_N = 1 THEN 1 ELSE 0 END) AS Calls\_Answered,

SUM(CASE WHEN Resolved = 1 THEN 1 ELSE 0 END) AS Resolved,

SUM(CASE WHEN Resolved = 0 THEN 1 ELSE 0 END) AS Unresolved

FROM PWC\_DataAnalytics.dbo.CallCenterDataset

WHERE AvgTalkDuration IS NOT NULL

GROUP BY DATEPART(MINUTE, AvgTalkDuration)

# Conclusions: Final Dashboard

# 

# TASK 2: CHURN ANALYTICS

# Dataset Overview:

# To build a Dashboard that provides recommendations regarding customer retention. In addition, to better understand the data, the telecom Retention

# Manager has scheduled a meeting with the engagement partner at PwC to cover these points:

# Customers in the telecom industry are hard-earned: we don’t want to lose them

# The retention department is here to get customers back in case of termination

# Currently, we get in touch after they have terminated the contract, but this is reactionary: it would be better to know in advance who is at risk

# We have done customer analysis with Excel: it has always ended in a dead-end

# We would like to know more about our customers: visualised clearly so that it’s self-explanatory for our management

# The Retentions Manager has provided some information in the resources.

# Define proper KPIs

# Create a dashboard for the retention manager reflecting the KPIs

# Write a short email to him (the engagement partner) explaining your findings, and include suggestions as to what needs to be changed.

# Key Performace Indicator Metrics:

# Total Customers

# Churn Rate

# Total Admin Tickets

# Total Tech Tickets

# Average Monthly Charges

# Total Revenue

# Customers by Gender (female/male)

# Revenue by Gender (female/male)

# Male Count

# Male Revenue Rate

# Female Count

# Female Revenue Rate

# Customers by Senior Citizen (yes/no)

# Revenue by Senior Citizen (yes/no)

# Senior Citizen Count

# Senior Citizen Revenue Rate

# Customers by Partners (yes/no)

# Revenue by Partners (yes/no)

# Partner Count

# Partner Revenue Rate

# Customers by Dependents (yes/no)

# Revenue by Dependents (yes/no)

# Dependent Count

# Dependent Revenue Rate

# Customer by Phone Service

# Phone Service Customer Rate

# Revenue by Phone Service

# Phone Service Revenue Rate

# Customer by Internet Service

# Fiber Optic Customer Rate

# DSL Customer Rate

# Revenue by Internet Service

# Fiber Optic Revenue Rate

# DSL Revenue Rate

# Customer by Multiple Lines

# Revenue by Multiple Lines

# Multiple lines Customer Rate

# Multiple Lines Revenue Rate

# Customer by Streaming TVs

# Revenue by Streaming TVs

# Streaming TVs Customer Rate

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# Customer by Streaming Movies

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# Customer by Online Security

# Revenue by Online Security

# Online Security Customer Rate

# Online Security Revenue Rate

# Customer by Online Backup

# Revenue by Online Backup

# Online Backup Customer Rate

# Online Backup Revenue Rate

# Customer by Device Protection

# Revenue by Device Protection

# Device Protection Customer Rate

# Device Protection Revenue Rate

# Customers by tech Support

# Revenue by Tech Support

# Tech Support Customer Rate

# Tech Support Revenue Rate

# Customers by Paperless Billing

# Customers by Contract Type

# Customers by Payment Method

# Revenue by Payment Method

# Total Revenue by Contract Type

# Customer List

# Filters of Tenure Year

# Filters of Churn (Yes/No)

# Exploratory Data Analysis:

# SQL Queries:

-- RETRIEVE DATA :

SELECT \*

FROM PWC\_DataAnalytics.dbo.ChurnDataset

------------------------------------------------------------------------------------------------------------------------------------------------------

-- DATA TRANSFORMATION or DATA CLEANING :

-- 1) COLUMN TENURE FROM VARCHAR TO INT :

ALTER TABLE ChurnDataset

ALTER COLUMN tenure INT;

-- 2) COLUMN SENIOR CITIZEN FROM VARCHAR TO INT :

ALTER TABLE ChurnDataset

ALTER COLUMN SeniorCitizen INT;

-- 3) COLUMN NUM ADMIN TICKETS FROM VARCHAR TO INT :

ALTER TABLE ChurnDataset

ALTER COLUMN numAdminTickets INT;

-- 4) COLUMN NUM TECH TICKETS FROM VARCHAR TO INT :

ALTER TABLE ChurnDataset

ALTER COLUMN numTEchTickets INT;

-- 5) COLUMN MONTHLY CHARGES FROM VARCHAR TO FLOAT :

ALTER TABLE ChurnDataset

ALTER COLUMN MonthlyCharges FLOAT;

-- 6) COLUMN TOTAL CHARGES FROM VARCHAR TO FLOAT :

ALTER TABLE ChurnDataset

ALTER COLUMN TotalCharges FLOAT;

-- B) TRANSFORMING TENURE MONTH TO YEARS IN NEW COLUMN :

ALTER TABLE PWC\_DataAnalytics.dbo.ChurnDataset

ADD tenure\_years VARCHAR(50);

UPDATE PWC\_DataAnalytics.dbo.ChurnDataset

SET tenure\_years = tenure

UPDATE PWC\_DataAnalytics.dbo.ChurnDataset

SET tenure\_years =

CASE WHEN tenure\_years <= 1 THEN 'Within 1 Month'

WHEN tenure\_years > 1 AND tenure\_years <= 12 THEN '0-1 Year'

WHEN tenure\_years > 12 AND tenure\_years <= 24 THEN '1-2 Year'

WHEN tenure\_years > 24 AND tenure\_years <= 36 THEN '2-3 Year'

WHEN tenure\_years > 36 AND tenure\_years <= 48 THEN '3-4 Year'

WHEN tenure\_years > 48 AND tenure\_years <= 60 THEN '4-5 Year'

WHEN tenure\_years > 60 AND tenure\_years <= 72 THEN '5-6 Year'

ELSE 'Greater than 6 Year'

END

SELECT \*

FROM PWC\_DataAnalytics.dbo.ChurnDataset

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-- ANALYSIS :

SELECT \*

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1) SUMMARY ANALYSIS :

-- 1.1) TOTAL CUSTOMER COUNT :

SELECT COUNT(customerID) AS Total\_Customer\_Count

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1.1.1) CUSTOMER COUNT BY CHURN :

SELECT COUNT(customerID) AS Churn\_Customer\_Count

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes';

-- 1.1.2) CUSTOMER COUNT BY TENURE :

SELECT tenure\_years, COUNT(customerID) AS Churn\_Customer\_Count

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY tenure\_years;

---------------------------------------------------------------------------

-- 1.2) CHURN RATE :

SELECT

(COUNT(CASE WHEN Churn = 'Yes' THEN customerID ELSE NULL END) \* 100) / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset) AS Churn\_Rate

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes';

-- 1.2.1) CHURN RATE BY TENURE :

SELECT

tenure\_years,

(SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END)) \* 100 / COUNT(DISTINCT customerID) AS Churn\_Rate

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY tenure\_years;

---------------------------------------------------------------------------

-- 1.3) TOTAL ADMIN TICKETS :

SELECT

SUM(numAdminTickets) AS Total\_Admin\_Tickets

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1.3.1) TOTAL ADMIN TICKETS BY CHURN :

SELECT

Churn,

SUM(CASE WHEN Churn = 'Yes' THEN numAdminTickets

WHEN Churn = 'No' THEN numAdminTickets ELSE NULL END) AS Total\_Admin\_Tickets\_by\_Churn

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes' OR Churn = 'No'

GROUP BY Churn;

-- 1.3.2) TOTAL ADMIN TICKETS BY TENURE :

SELECT

tenure\_years,

SUM(numAdminTickets) AS Total\_Admin\_Tickets\_by\_Tenure

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY tenure\_years;

---------------------------------------------------------------------------

-- 1.4) TOTAL TECH TICKETS :

SELECT

SUM(numTechTickets) AS Total\_Tech\_Tickets

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1.4.1) TOTAL TECH TICKETS BY CHURN :

SELECT

Churn,

SUM(CASE WHEN Churn = 'Yes' THEN numTechTickets

WHEN Churn = 'No' THEN numTechTickets

ELSE NULL END) AS Total\_Tech\_Tickets\_by\_Churn

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes' OR Churn = 'No'

GROUP BY Churn;

-- 1.4.2) TOTAL TECH TICKETS BY TENURE :

SELECT

tenure\_years,

SUM(numTechTickets) AS Total\_Tech\_Tickets\_by\_Tenure

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY tenure\_years;

---------------------------------------------------------------------------

-- 1.5) AVERAGE MONTHLY CHARGE :

SELECT ROUND(AVG(MonthlyCharges), 1) AS Average\_Monthly\_Charges

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1.5.1) AVERAGE MONTHLY CHARGE BY CHURN :

SELECT

Churn,

ROUND(AVG(CASE WHEN Churn = 'Yes' THEN MonthlyCharges

WHEN Churn = 'No' THEN MonthlyCharges

ELSE NULL END), 1) AS Average\_Monthly\_Charges\_by\_Churn

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes' OR Churn = 'No'

GROUP BY Churn;

-- 1.5.2) AVERAGE MONTHLY CHARGE BY TENURE :

SELECT

tenure\_years,

ROUND(AVG(MonthlyCharges), 1) AS Average\_Monthly\_Charges\_by\_Tenure

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY tenure\_years;

---------------------------------------------------------------------------

-- 1.6) TOTAL REVENUE :

SELECT

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset;

-- 1.6.1) TOTAL REVENUE BY CHURN :

SELECT

Churn,

SUM(CASE WHEN Churn = 'Yes' THEN TotalCharges

WHEN Churn = 'No' THEN TotalCharges

ELSE NULL END) AS Total\_Revenue\_by\_Churn

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes' OR Churn = 'No'

GROUP BY Churn;

-- 1.6.2) TOTAL REVENUE BY TENURE :

SELECT

tenure\_years,

SUM(TotalCharges) AS Total\_Revenue\_by\_Tenure

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY tenure\_years;

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-- 2) CUSTOMER DEMOGRAPHIC SEGMENT :

-- CUSTOMER BY GENDER :

SELECT

gender,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY gender;

-- PERCENT :

SELECT

gender,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY gender;

-- CHURN BY CUSTOMER vs GENDER :

SELECT

gender,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY gender;

-- CHURN RATE BY CUSTOMER vs GENDER :

SELECT

gender,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY gender;

-- REVENUE BY GENDER :

SELECT

gender,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY gender;

--PERCENTAGE :

SELECT

gender,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY gender;

-- CHURN BY REVENUE vs GENDER :

SELECT

gender,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY gender;

-- CHURN RATE BY REVENUE vs GENDER :

SELECT

gender,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY gender;

---------------------------------------------------------------------------

-- CUSTOMER BY SENIOR CITIZEN :

SELECT

SeniorCitizen,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY SeniorCitizen;

-- PERCENT :

SELECT

SeniorCitizen,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY SeniorCitizen;

-- CHURN BY CUSTOMER vs SENIOR CITIZEN :

SELECT

SeniorCitizen,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY SeniorCitizen;

-- CHURN RATE BY CUSTOMER vs SENIOR CITIZEN :

SELECT

SeniorCitizen,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY SeniorCitizen;

-- REVENUE BY SENIOR CITIZEN :

SELECT

SeniorCitizen,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY SeniorCitizen;

--PERCENTAGE :

SELECT

SeniorCitizen,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY SeniorCitizen;

-- CHURN BY REVENUE vs SENIOR CITIZEN :

SELECT

SeniorCitizen,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY SeniorCitizen;

-- CHURN RATE BY REVENUE vs SENIOR CITIZEN :

SELECT

SeniorCitizen,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY SeniorCitizen;

---------------------------------------------------------------------------

-- CUSTOMER BY DEPENDENTS :

SELECT

Dependents,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Dependents;

-- PERCENT :

SELECT

Dependents,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Dependents;

-- CHURN BY CUSTOMER vs DEPENDENTS :

SELECT

Dependents,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Dependents;

-- CHURN RATE BY CUSTOMER vs DEPENDENTS :

SELECT

Dependents,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Dependents;

-- REVENUE BY DEPENDENTS :

SELECT

Dependents,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Dependents;

--PERCENTAGE :

SELECT

Dependents,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Dependents;

-- CHURN BY REVENUE vs DEPENDENTS :

SELECT

Dependents,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Dependents;

-- CHURN RATE BY REVENUE vs DEPENDENTS :

SELECT

Dependents,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Dependents;

---------------------------------------------------------------------------

-- CUSTOMER BY PARTNER :

SELECT

Partner,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Partner;

-- PERCENT :

SELECT

Partner,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Partner;

-- CHURN BY CUSTOMER vs PARTNER :

SELECT

Partner,

COUNT(DISTINCT customerID) AS Total\_Customer\_Id

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Partner;

-- CHURN RATE BY CUSTOMER vs PARTNERS :

SELECT

Partner,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Partner;

-- REVENUE BY PARTNER :

SELECT

Partner,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Partner;

--PERCENTAGE :

SELECT

Partner,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Partner;

-- CHURN BY REVENUE vs PARTNER :

SELECT

Partner,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Partner;

-- CHURN RATE BY REVENUE vs PARTNERS

SELECT

Partner,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Partner;

------------------------------------------------------------------------------------------------------------------------------------------------------

-- 3) SERVICE SEGMENT ANALYSIS :

-- CUSTOMER BY PHONE SERVICE :

SELECT

PhoneService,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PhoneService;

-- PERCENT :

SELECT

PhoneService,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PhoneService;

-- CHURN BY CUSTOMER vs PHONE SERVICE :

SELECT

PhoneService,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PhoneService;

-- CHURN RATE BY CUSTOMER vs PHONE SERVICE :

SELECT

PhoneService,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PhoneService;

-- REVENUE BY PHONE SERVICE :

SELECT

PhoneService,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PhoneService;

--PERCENTAGE :

SELECT

PhoneService,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PhoneService;

-- CHURN BY REVENUE vs PHONE SERVICE :

SELECT

PhoneService,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PhoneService;

-- CHURN RATE BY REVENUE vs PHONE SERVICE :

SELECT

PhoneService,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PhoneService;

---------------------------------------------------------------------------

-- CUSTOMER BY INTERNET SERVICE :

SELECT

InternetService,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY InternetService;

-- PERCENT :

SELECT

InternetService,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY InternetService;

-- CHURN BY CUSTOMER vs INTERNET SERVICE :

SELECT

InternetService,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY InternetService;

-- CHURN RATE BY CUSTOMER vs INTERNET SERVICE :

SELECT

InternetService,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY InternetService;

-- REVENUE BY INTERNET SERVICE :

SELECT

InternetService,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY InternetService;

--PERCENTAGE :

SELECT

InternetService,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY InternetService;

-- CHURN BY REVENUE vs INTERNET SERVICE :

SELECT

InternetService,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY InternetService;

-- CHURN RATE BY REVENUE vs INTERNET SERVICE :

SELECT

InternetService,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY InternetService;

---------------------------------------------------------------------------

-- CUSTOMER BY MULTIPLE LINES :

SELECT

MultipleLines,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY MultipleLines;

-- PERCENT :

SELECT

MultipleLines,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY MultipleLines;

-- CHURN BY CUSTOMER vs MULTIPLE LINES :

SELECT

MultipleLines,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY MultipleLines;

-- CHURN RATE BY CUSTOMERS vs MULTIPLE LINES :

SELECT

MultipleLines,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY MultipleLines;

-- REVENUE BY MULTIPLE LINES :

SELECT

MultipleLines,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY MultipleLines;

--PERCENTAGE :

SELECT

MultipleLines,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY MultipleLines;

-- CHURN BY REVENUE vs MULTIPLE LINES :

SELECT

MultipleLines,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY MultipleLines;

-- CHURN RATE BY REVENUE vs MULTIPLE LINES :

SELECT

MultipleLines,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY MultipleLines;

---------------------------------------------------------------------------

-- CUSTOMER BY STREAMING TVs :

SELECT

StreamingTV,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingTV;

-- PERCENT :

SELECT

StreamingTV,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingTV;

-- CHURN BY CUSTOMER vs STREAMING TVs :

SELECT

StreamingTV,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingTV;

-- CHURN RATE BY CUSTOMERS vs STREAMING TVs :

SELECT

StreamingTV,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingTV;

-- REVENUE BY STREAMING TVs :

SELECT

StreamingTV,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingTV;

--PERCENTAGE :

SELECT

StreamingTV,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingTV;

-- CHURN BY REVENUE vs STREAMING TVs :

SELECT

StreamingTV,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingTV;

-- CHURN RATE BY REVENUE vs STREAMING TVs :

SELECT

StreamingTV,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingTV;

---------------------------------------------------------------------------

-- CUSTOMER BY STREAMING MOVIES :

SELECT

StreamingMovies,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingMovies;

-- PERCENT :

SELECT

StreamingMovies,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingMovies;

-- CHURN BY CUSTOMER vs STREAMING MOVIES :

SELECT

StreamingMovies,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingMovies;

-- CHURN RATE BY CUSTOMERS vs STREAMING MOVIES :

SELECT

StreamingMovies,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingMovies;

-- REVENUE BY STREAMING MOVIES :

SELECT

StreamingMovies,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingMovies;

--PERCENTAGE :

SELECT

StreamingMovies,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY StreamingMovies;

-- CHURN BY REVENUE vs STREAMING MOVIES :

SELECT

StreamingMovies,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingMovies;

-- CHURN RATE BY REVENUE vs STREAMING MOVIES :

SELECT

StreamingMovies,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY StreamingMovies;

---------------------------------------------------------------------------

-- CUSTOMER BY ONLINE SECURITY :

SELECT

OnlineSecurity,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineSecurity;

-- PERCENT :

SELECT

OnlineSecurity,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineSecurity;

-- CHURN BY CUSTOMER vs ONLINE SECURITY :

SELECT

OnlineSecurity,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineSecurity;

-- CHURN RATE BY CUSTOMERS vs ONLINE SECURITY :

SELECT

OnlineSecurity,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineSecurity;

-- REVENUE BY ONLINE SECURITY :

SELECT

OnlineSecurity,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineSecurity;

--PERCENTAGE :

SELECT

OnlineSecurity,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineSecurity;

-- CHURN BY REVENUE vs ONLINE SECURITY :

SELECT

OnlineSecurity,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineSecurity;

-- CHURN RATE BY REVENUE vs ONLINE SECURITY :

SELECT

OnlineSecurity,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineSecurity;

---------------------------------------------------------------------------

-- CUSTOMER BY ONLINE BACKUP :

SELECT

OnlineBackup,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineBackup;

-- PERCENT :

SELECT

OnlineBackup,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineBackup;

-- CHURN BY CUSTOMER vs ONLINE BACKUP :

SELECT

OnlineBackup,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineBackup;

-- CHURN RATE BY CUSTOMERS vs ONLINE BACKUP :

SELECT

OnlineBackup,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineBackup;

-- REVENUE BY ONLINE SECURITY :

SELECT

OnlineBackup,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineBackup;

--PERCENTAGE :

SELECT

OnlineBackup,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY OnlineBackup;

-- CHURN BY REVENUE vs ONLINE BACKUP :

SELECT

OnlineBackup,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineBackup;

-- CHURN RATE BY REVENUE vs ONLINE BACKUP :

SELECT

OnlineBackup,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY OnlineBackup;

---------------------------------------------------------------------------

-- CUSTOMER BY DEVICE PROTECTION :

SELECT

DeviceProtection,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY DeviceProtection;

-- PERCENT :

SELECT

DeviceProtection,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY DeviceProtection;

-- CHURN BY CUSTOMER vs DEVICE PROTECTION :

SELECT

DeviceProtection,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY DeviceProtection;

-- CHURN RATE BY CUSTOMERS vs DEVICE PROTECTION :

SELECT

DeviceProtection,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY DeviceProtection;

-- REVENUE BY DEVICE PROTECTION :

SELECT

DeviceProtection,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY DeviceProtection;

--PERCENTAGE :

SELECT

DeviceProtection,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY DeviceProtection;

-- CHURN BY REVENUE vs DEVICE PROTECTION :

SELECT

DeviceProtection,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY DeviceProtection;

-- CHURN RATE BY REVENUE vs DEVICE PROTECTION :

SELECT

DeviceProtection,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY DeviceProtection;

---------------------------------------------------------------------------

-- CUSTOMER BY TECH SUPPORT :

SELECT

TechSupport,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY TechSupport;

-- PERCENT :

SELECT

TechSupport,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY TechSupport;

-- CHURN BY CUSTOMER vs TECH SUPPORT :

SELECT

TechSupport,

COUNT(customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY TechSupport;

-- CHURN RATE BY CUSTOMERS vs TECH SUPPORT :

SELECT

TechSupport,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY TechSupport;

-- REVENUE BY TECH SUPPORT :

SELECT

TechSupport,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY TechSupport;

--PERCENTAGE :

SELECT

TechSupport,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY TechSupport;

-- CHURN BY REVENUE vs TECH SUPPORT :

SELECT

TechSupport,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY TechSupport;

-- CHURN RATE BY REVENUE vs TECH SUPPORT :

SELECT

TechSupport,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY TechSupport;

------------------------------------------------------------------------------------------------------------------------------------------------------

-- 4) ACCOUNT TYPE SEGMENT :

-- CUSTOMER BY PAPERLESS BILLING

SELECT

PaperlessBilling,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaperlessBilling;

-- PERCENT :

SELECT

PaperlessBilling,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaperlessBilling;

-- CUSTOMER BY PAPERLESS BILLING vs CHURN

SELECT

PaperlessBilling,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaperlessBilling;

-- CHURN RATE BY CUSTOMERS vs PAPERLESS BILLING :

SELECT

PaperlessBilling,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaperlessBilling;

-- REVENUE BY PAPERLESS BILLING :

SELECT

PaperlessBilling,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaperlessBilling;

--PERCENTAGE :

SELECT

PaperlessBilling,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaperlessBilling;

-- REVENUE BY PAPERLESS BILLING vs CHURN:

SELECT

PaperlessBilling,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaperlessBilling;

-- CHURN RATE BY REVENUE vs PAPERLESS BILLING :

SELECT

PaperlessBilling,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaperlessBilling;

---------------------------------------------------------------------------

-- CUSTOMER BY CONTRACT

SELECT

Contract,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Contract;

-- PERCENT :

SELECT

Contract,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Contract;

-- CUSTOMER BY CONTRACT vs CHURN

SELECT

Contract,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Contract;

-- CHURN RATE BY CUSTOMERS vs CONTRACT :

SELECT

Contract,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Contract;

-- REVENUE BY CONTRACT :

SELECT

Contract,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Contract;

--PERCENTAGE :

SELECT

Contract,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY Contract;

-- REVENUE BY CONTRACT vs CHURN:

SELECT

Contract,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Contract;

-- CHURN RATE BY REVENUE vs CONTRACT :

SELECT

Contract,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY Contract;

---------------------------------------------------------------------------

-- CUSTOMER BY PAYMENT METHOD :

SELECT

PaymentMethod,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaymentMethod;

-- PERCENT :

SELECT

PaymentMethod,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaymentMethod;

-- CUSTOMER BY PAYMENT METHOD vs CHURN

SELECT

PaymentMethod,

COUNT(DISTINCT customerID) AS Total\_Customers

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaymentMethod;

-- CHURN RATE BY CUSTOMERS vs PAYMENT METHOD :

SELECT

PaymentMethod,

CEILING(COUNT(DISTINCT customerID) \* 100 / (SELECT COUNT(DISTINCT customerID) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Customer

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaymentMethod;

-- REVENUE BY PAYMENT METHOD :

SELECT

PaymentMethod,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaymentMethod;

--PERCENTAGE :

SELECT

PaymentMethod,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset)) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

GROUP BY PaymentMethod;

-- REVENUE BY PAYMENT METHOD vs CHURN:

SELECT

PaymentMethod,

SUM(TotalCharges) AS Total\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

GROUP BY PaymentMethod;

-- CHURN RATE BY REVENUE vs PAYMENT METHOD :

SELECT

PaymentMethod,

CEILING(SUM(TotalCharges) \* 100 / (SELECT SUM(TotalCharges) FROM PWC\_DataAnalytics.dbo.ChurnDataset WHERE Churn = 'Yes')) AS Rate\_by\_Revenue

FROM PWC\_DataAnalytics.dbo.ChurnDataset

WHERE Churn = 'Yes'

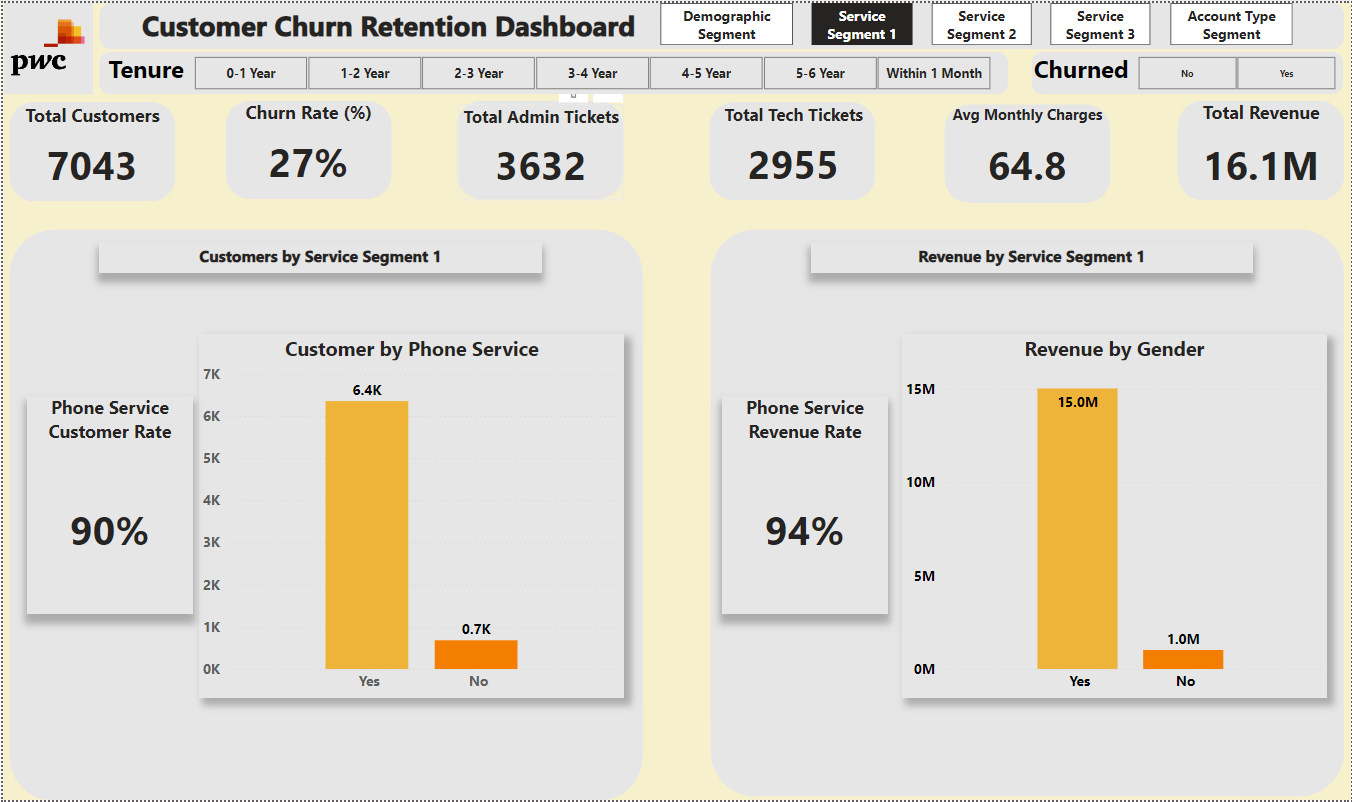
GROUP BY PaymentMethod;

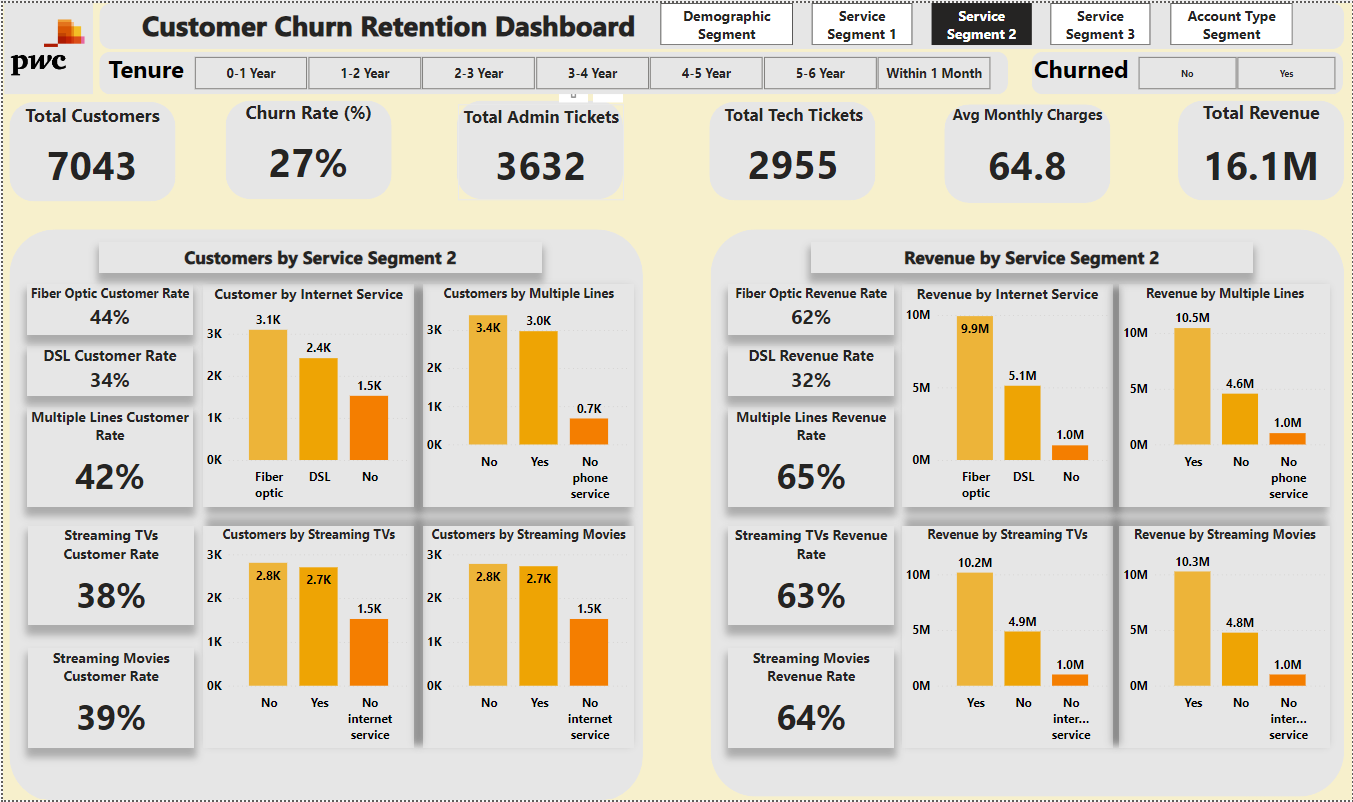
---------------------------------------------------------------------------

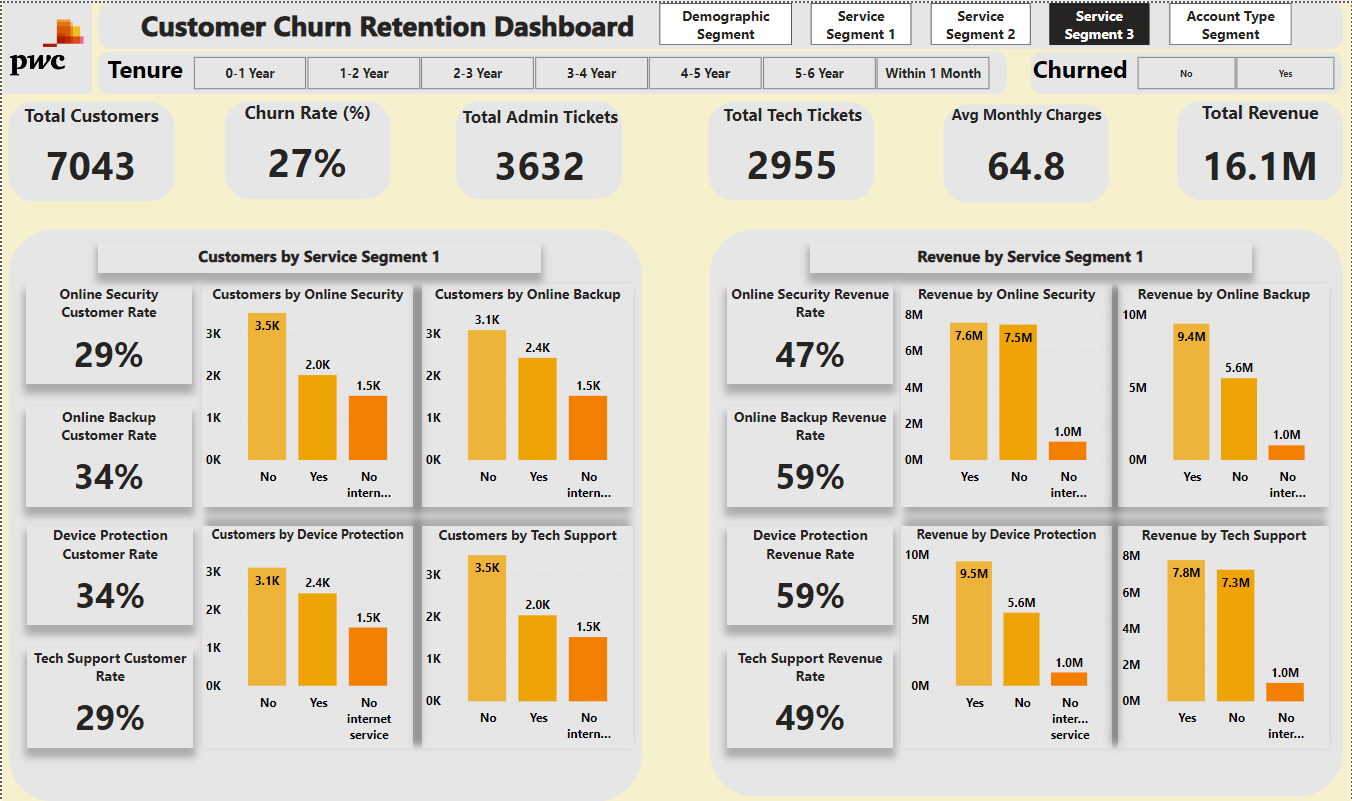
SELECT \* FROM PWC\_DataAnalytics.dbo.ChurnDataset

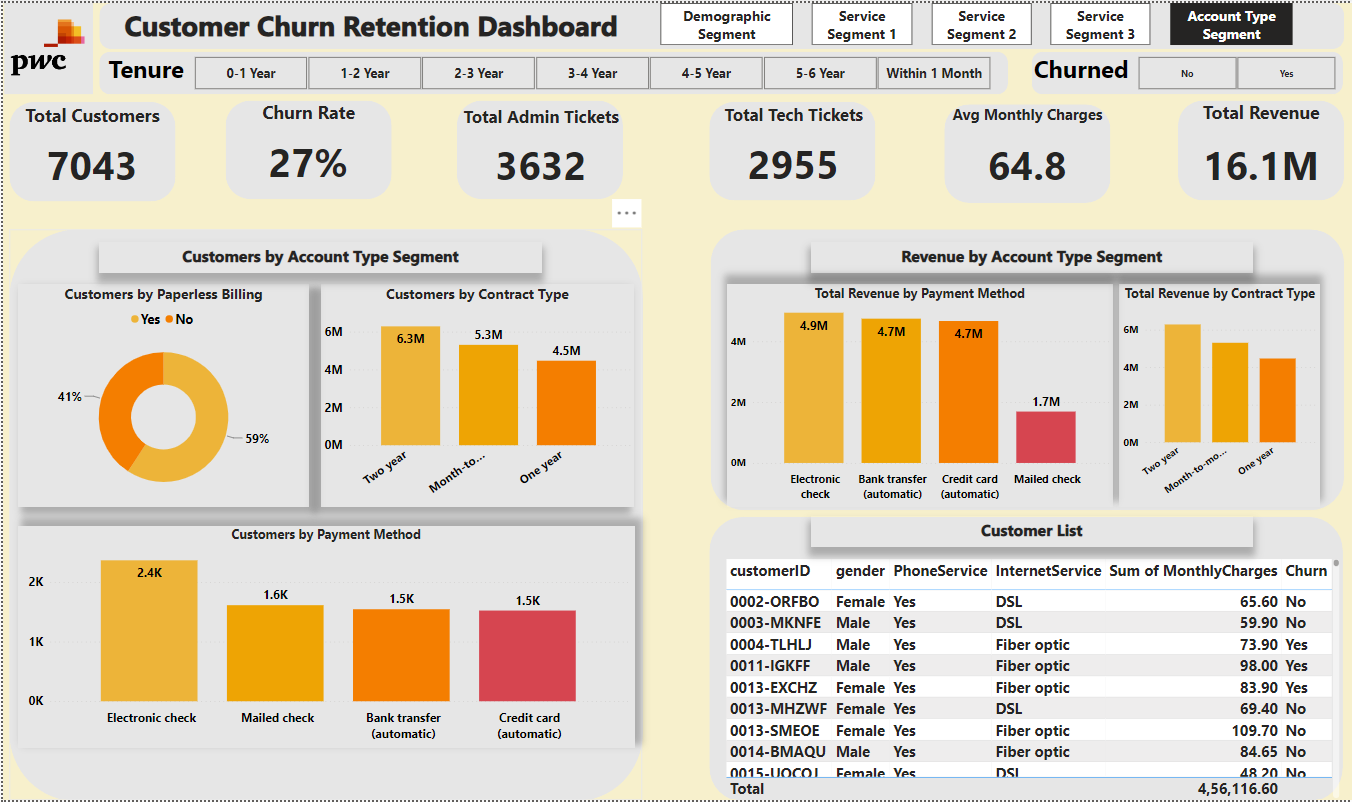
# Conclusions: Final Dashbaord

# 









# TASK 3: DIVERSITY ANALYTICS

# Dataset Overview:

# Human Resources is looking for Insights into improving gender abalance at executive level. Define Relevant KPIs in hiring, promotion, performance and turnover. Create a Dashbaord Visualsation.

# Human Resources at our telecom client is highly into diversity and inclusion. They’ve been working hard to improve gender balance at the executive management level, but they’re not seeing any progress. They’re reaching out to us for help.

# At PwC Switzerland we are often approached by clients seeking support with diversity and inclusion. Companies need a workforce of diverse talents and backgrounds to succeed in an increasingly complex and heterogeneous world. To us, diversity and inclusion are business imperatives, not just nice-to-haves. We aim for all of our teams to feel welcome and appreciated. But actually achieving this and unlocking its potential involves a whole set of practical challenges.

# Here is a hint: Calculating the following measures could help to define proper KPIs:

# # of men

# # of women

# # of leavers

# % employees promoted (FY21)

# % of women promoted

# % of hires men

# % of hires women

# % turnover

# Average performance rating: men

# Average Performance rating: women

# Key Performance Indicator Metrics:

1. Employee in FY20
2. Employee in FY21
3. Hiring Rate FY20
4. Exit Rate FY20
5. Employee in FY20 by Gender
6. Employee in FY21 by Gender
7. Promotion in FY20 by Gender
8. Promotion in FY21 by Gender
9. Promotion Rate FY20 (Male & Female)
10. Promotion by Job Level After FY20 Promotion by Gender
11. Promotion Rate FY21 (Male & Female)
12. Promotion by Job Level After FY21 Promotion by Gender
13. Average Rating FY19 (Male & Female)
14. Performance Rating in FY19 on Job Level by Gender
15. Average Rating of FY20 (Male & Female)
16. Performance Rating in FY20 on Job Level by Gender
17. Age Group by Gender
18. Age Group on Executive Level by Gender
19. Region by Gender
20. Region on Executive Level by Gender
21. Job Type by Gender
22. Job type on Executive Level by Gender

# Exploratory Data Analysis:

# SQL Queries:

-- DIVERSITY & INCLUSION ANALYSIS :

---------------------------------------------------------------------------

SELECT \* FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- TRANSFORMATION : Last\_hrie\_date from varchar to date

SELECT \*

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

ALTER TABLE PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

ALTER COLUMN Last\_hire\_date DATE;

UPDATE PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

SET Last\_hire\_date = CAST(Last\_hire\_date AS DATE)

ALTER TABLE PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

ALTER COLUMN FY19\_Performance\_Rating INT;

ALTER TABLE PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

ALTER COLUMN FY20\_Performance\_Rating INT;

------------------------------------------------------------------------------------------------------------------------------------------------------

-- ANALYSIS:

SELECT \*

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

-- TOTAL EMPLOYEE FY20 :

SELECT

COUNT(Employee\_ID) AS Total\_Employee\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- TOTAL EMPLOYEE FY21 :

SELECT

SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) AS Total\_Employee\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- EMPLOYEE FY20 BY GENDER :

SELECT

Gender,

COUNT(Employee\_ID) AS Total\_Employee\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender;

---------------------------------------------------------------------------

-- TOTAL EMPLOYEE FY21 BY GENDER :

SELECT

Gender,

SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) AS Total\_Employee\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender;

---------------------------------------------------------------------------

-- EMPLOYEE FY20 PERCENTAGE BY GENDER :

SELECT

Gender,

CEILING(SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset))

AS Employee\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender;

---------------------------------------------------------------------------

-- EMPLOYEE FY21 PERCENTAGE BY GENDER :

SELECT

Gender,

CEILING(COUNT(DISTINCT Employee\_ID) \* 100 / (SELECT COUNT(DISTINCT Employee\_ID) FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset)) AS Employee\_Count\_Rate

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender;

---------------------------------------------------------------------------

-- PROMOTION BY GENDER FY20 :

SELECT

Promotion\_in\_FY20,

Gender,

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS Promotion\_For\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, Promotion\_in\_FY20;

---------------------------------------------------------------------------

-- EMPLOYEE COUNT BY GENDER AFTER FY20 PROMOTION :

SELECT

Job\_Level\_after\_FY20\_promotions,

Gender,

COUNT(Employee\_ID) AS Employee\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, Job\_Level\_after\_FY20\_promotions;

---------------------------------------------------------------------------

-- EMPLOYEE COUNT BY GENDER AFTER FY21 PROMOTION :

SELECT

Job\_Level\_after\_FY21\_promotions,

Gender,

SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) AS Employee\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, Job\_Level\_after\_FY21\_promotions

HAVING SUM(CASE WHEN FY20\_leaver = 'No' THEN 1 ELSE 0 END) > 0;

---------------------------------------------------------------------------

-- PROMOTION BY GENDER IN FY20 :

SELECT

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS EmployeE\_Promotion\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Promotion\_in\_FY20, Gender;

---------------------------------------------------------------------------

-- PROMOTION BY GENDER FY21 :

SELECT

COUNT(DISTINCT Employee\_ID) AS Employee\_Promotion\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Promotion\_in\_FY21, Gender;

---------------------------------------------------------------------------

-- PROMOTION RATE IN FY20 :

SELECT

SUM(CASE WHEN New\_hire\_FY20 = 'N' AND Promotion\_in\_FY20 = 'Y' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END)) AS Promotion\_Rate\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- PROMOTION RATE IN FY20 BY GENDER :

-- MALE

SELECT

SUM(CASE WHEN New\_hire\_FY20 = 'N' AND Promotion\_in\_FY20 = 'Y' AND Gender = 'Male' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN New\_hire\_FY20 = 'N' AND Promotion\_in\_FY20 = 'Y' THEN 1 ELSE 0 END)) AS Promotion\_Rate\_FY20\_Male

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

-- FEMALE :

SELECT

SUM(CASE WHEN New\_hire\_FY20 = 'N' AND Promotion\_in\_FY20 = 'Y' AND Gender = 'Female' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN New\_hire\_FY20 = 'N' AND Promotion\_in\_FY20 = 'Y' THEN 1 ELSE 0 END)) AS Promotion\_Rate\_FY20\_Female

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- PROMOTION RATE IN FY21 :

SELECT

SUM(CASE WHEN Promotion\_in\_FY21 = 'Yes' THEN 1 ELSE 0 END) \* 100 / (

SELECT

SUM(CASE WHEN In\_base\_group\_for\_Promotion\_FY21 = 'Yes' THEN 1 ELSE 0 END)

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset) AS Promotion\_Rate\_FY21

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

SELECT \* FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- PROMOTION RATE IN FY21 BY GENDER :

-- MALE

SELECT

SUM(CASE WHEN Promotion\_in\_FY21 = 'Yes' AND Gender = 'Male' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN Promotion\_in\_FY21 = 'Yes' THEN 1 ELSE 0 END)) AS Promotion\_Rate\_FY21\_Male

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

-- FEMALE :

SELECT

SUM(CASE WHEN Promotion\_in\_FY21 = 'Yes' AND Gender = 'Female' THEN 1 ELSE 0 END) \* 100 / (

SELECT SUM(CASE WHEN Promotion\_in\_FY21 = 'Yes' THEN 1 ELSE 0 END)) AS Promotion\_Rate\_FY21\_Female

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- HIRING RATE FY20 :

WITH HiringRate AS(

SELECT

COUNT(DISTINCT Employee\_ID) AS Total\_Employee,

SUM(CASE WHEN New\_hire\_FY20 = 'Y' THEN 1 ELSE 0 END) AS New\_Hire\_Count,

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS Old\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

)

SELECT

(New\_Hire\_Count \* 100) / ((Total\_Employee + Old\_Count)/2) AS Hiring\_Rate\_FY20

FROM HiringRate;

---------------------------------------------------------------------------

-- HIRING RATE FY20 BY GENDER :

WITH HiringRateGedner AS(

SELECT

Gender,

COUNT(DISTINCT Employee\_ID) AS Total\_Employee,

SUM(CASE WHEN New\_hire\_FY20 = 'Y' THEN 1 ELSE 0 END) AS New\_Hire\_Count,

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS Old\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender

)

SELECT

Gender,

CEILING((New\_Hire\_Count \* 100) / ((Total\_Employee + Old\_Count)/2)) AS Hiring\_Rate\_FY20

FROM HiringRateGedner;

---------------------------------------------------------------------------

-- EMPLOYEE EXIT RATE:

WITH ExitRate AS(

SELECT

COUNT(DISTINCT Employee\_ID) AS Total\_Employee,

SUM(CASE WHEN FY20\_leaver = 'Yes' THEN 1 ELSE 0 END) AS New\_Hire\_Count,

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS Old\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

)

SELECT

(New\_Hire\_Count \* 100) / ((Total\_Employee + Old\_Count)/2) AS Hiring\_Rate\_FY20

FROM ExitRate;

---------------------------------------------------------------------------

-- EMPLOYEE EXIT RATE BY GENDER:

WITH ExitRateGender AS (

SELECT

Gender,

COUNT(DISTINCT Employee\_ID) AS Total\_Employee,

SUM(CASE WHEN FY20\_leaver = 'Yes' THEN 1 ELSE 0 END) AS Leaver\_Count,

SUM(CASE WHEN New\_hire\_FY20 = 'N' THEN 1 ELSE 0 END) AS Old\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender

)

SELECT

Gender,

CEILING((Leaver\_Count \* 100.0) / ((Total\_Employee + Old\_Count)/2)) AS Exit\_Rate\_FY20

FROM ExitRateGender;

---------------------------------------------------------------------------

-- PERFORMANCE RATING IN FY19 BY GENDER AND JOB LEVEL:

SELECT

Job\_Level\_before\_FY20\_promotions, Gender,

AVG(CASE WHEN New\_hire\_FY20 = 'N' THEN FY19\_Performance\_Rating ELSE 0 END) AS Performance\_Rating\_FY19

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Job\_Level\_before\_FY20\_promotions, Gender

HAVING AVG(CASE WHEN New\_hire\_FY20 = 'N' THEN FY19\_Performance\_Rating ELSE 0 END) > 0;

---------------------------------------------------------------------------

-- AVERAGE OF PERFORMANCE RATING IN FY19 :

SELECT

AVG(FY19\_Performance\_Rating) AS Performance\_Rating\_FY19

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

WHERE New\_hire\_FY20 = 'N';

---------------------------------------------------------------------------

-- AVERAGE PERFORMANCE RATING BY GENDER IN FY19 :

SELECT

Gender,

AVG(FY19\_Performance\_Rating) AS Performance\_Rating\_FY19

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

WHERE New\_hire\_FY20 = 'N'

GROUP BY Gender;

---------------------------------------------------------------------------

-- PERFORMANCE RATING IN FY20 BY GENDER AND JOB LEVEL :

SELECT

Job\_Level\_after\_FY20\_promotions,

Gender,

AVG(FY20\_Performance\_Rating) AS Performance\_Rating\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Job\_Level\_after\_FY20\_promotions, Gender;

---------------------------------------------------------------------------

-- AVERAGE PERFORMANCE RATING IN FY20 :

SELECT

AVG(FY20\_Performance\_Rating) AS Performance\_Rating\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

---------------------------------------------------------------------------

-- AVERAGE PERFORMANCE RATING BY GENDER IN FY20 :

SELECT

Gender,

AVG(FY20\_Performance\_Rating) AS Performance\_Rating\_FY20

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender;

---------------------------------------------------------------------------

-- AGE GROUP BY GENDER :

SELECT

Gender,

Age\_group,

COUNT(DISTINCT Employee\_ID) AS Employee\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, Age\_group;

---------------------------------------------------------------------------

-- AGE GROUP BY EXECUTIVE LEVEL BY GENDER :

SELECT

Gender,

Age\_group,

COUNT(DISTINCT Employee\_ID) AS Employee\_Count\_at\_Executive\_Level

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

WHERE Job\_Level\_after\_FY20\_promotions = '1 - Executive'

GROUP BY Gender, Age\_group;

---------------------------------------------------------------------------

-- REGION BY GENDER :

SELECT

Gender,

[Region group nationality 1],

COUNT(DISTINCT Employee\_ID) AS Employee\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, [Region group nationality 1];

---------------------------------------------------------------------------

-- REGION BY EXECUTIVE LEVEL BY GENDER :

SELECT

[Region group nationality 1],

Age\_group,

COUNT(DISTINCT Employee\_ID) AS Employee\_Count\_at\_Executive\_Level

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

WHERE Job\_Level\_after\_FY20\_promotions = '1 - Executive'

GROUP BY [Region group nationality 1], Age\_group;

---------------------------------------------------------------------------

-- JOB TYPE BY GENDER :

SELECT

Gender,

Time\_type,

COUNT(DISTINCT Employee\_ID) AS Employee\_Count

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

GROUP BY Gender, Time\_type;

---------------------------------------------------------------------------

-- JOB TYPE BY EXECUTIVE LEVEL BY GENDER :

SELECT

Time\_type,

Gender,

COUNT(DISTINCT Employee\_ID) AS Employee\_Count\_at\_Executive\_Level

FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset

WHERE Job\_Level\_after\_FY20\_promotions = '1 - Executive'

GROUP BY Time\_type, Gender;

---------------------------------------------------------------------------

SELECT \* FROM PWC\_DataAnalytics.dbo.DiversityInclusion\_Dataset;

# Conclusion: Final Dashboard:

# 

# 

# END CREDITS

# THANK YOU:

# SRIKRISHNAN SHANKAR

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