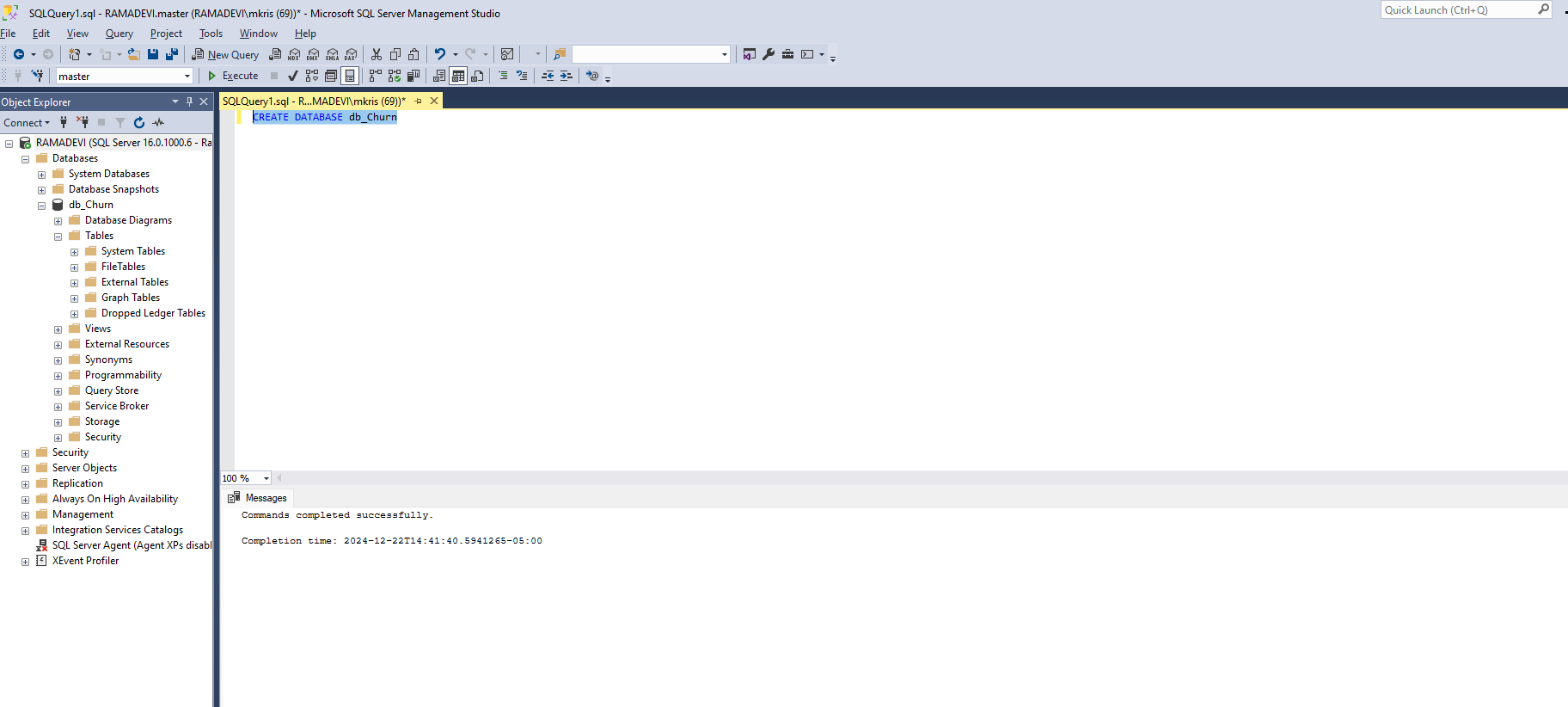
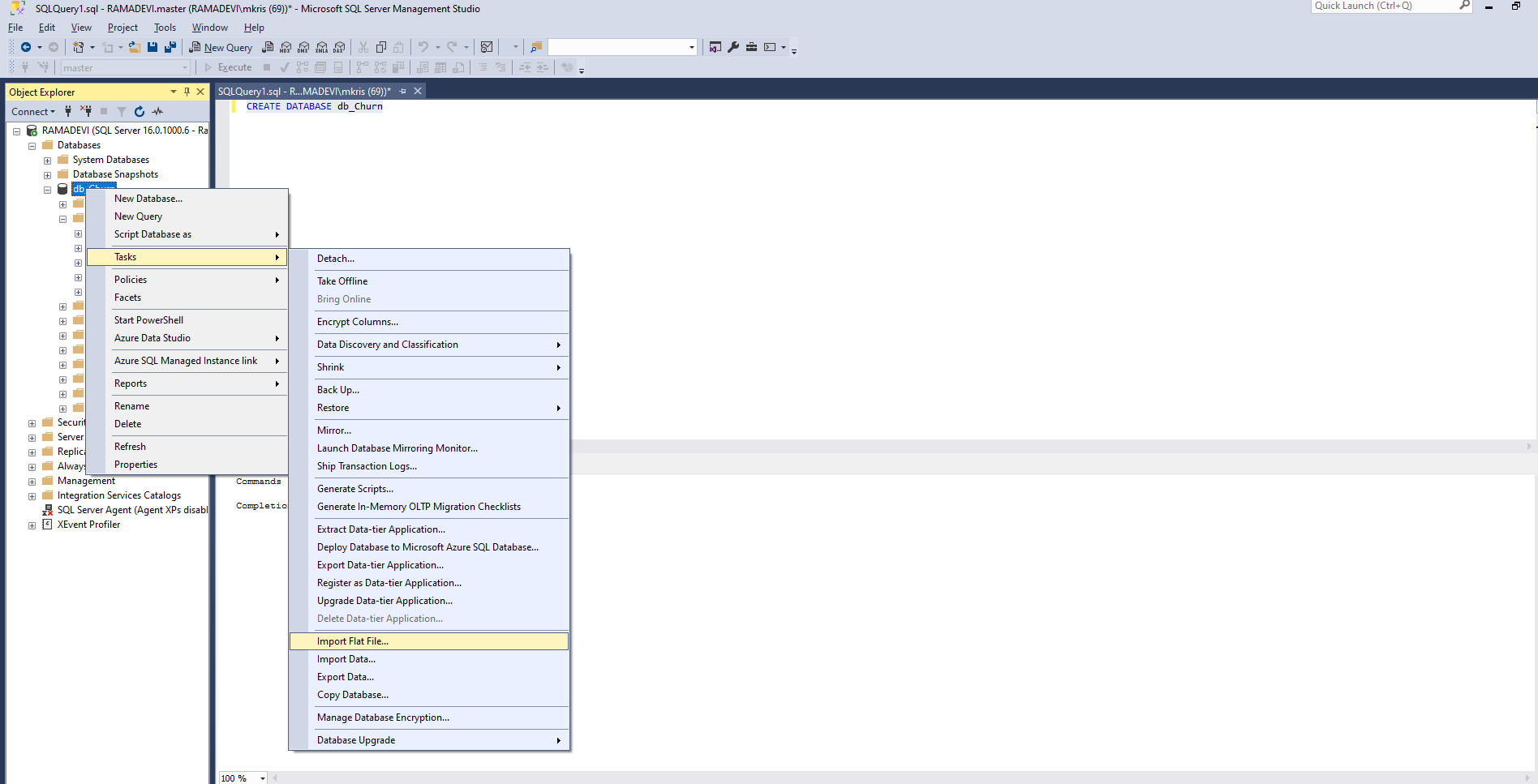
SQL Server Studio Name :

Open MySQL Microsoft server studion and create database:

CREATE DATABASE db\_Churn



Db\_Churn->Tasks->Import Flat File

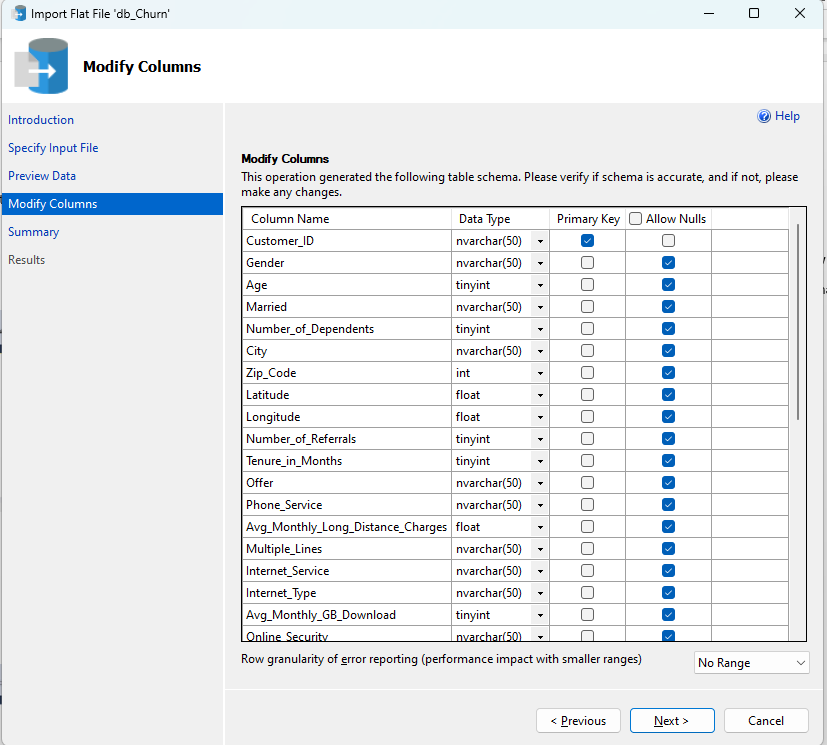


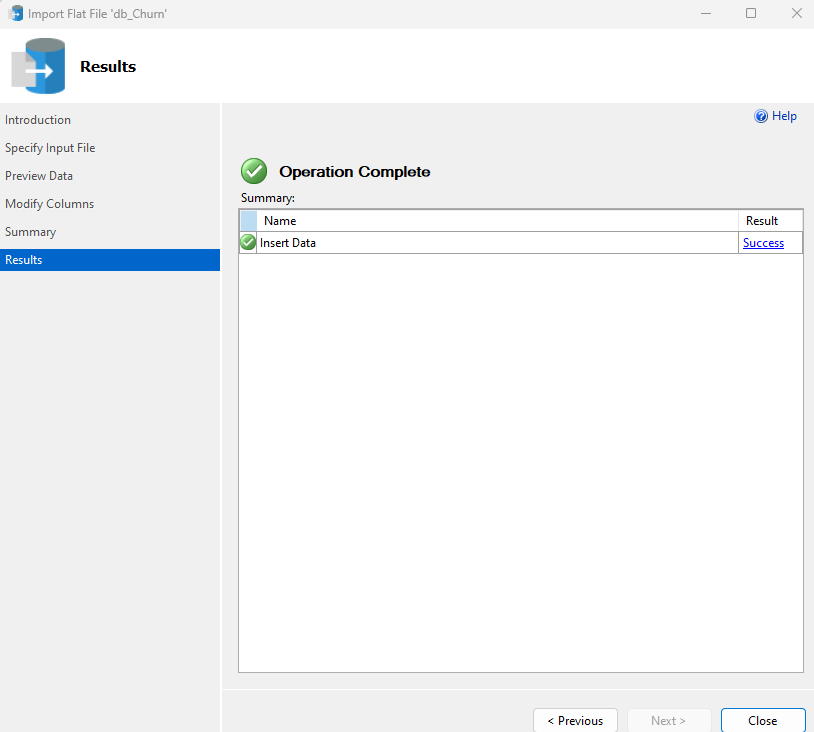
In ETL Steps,

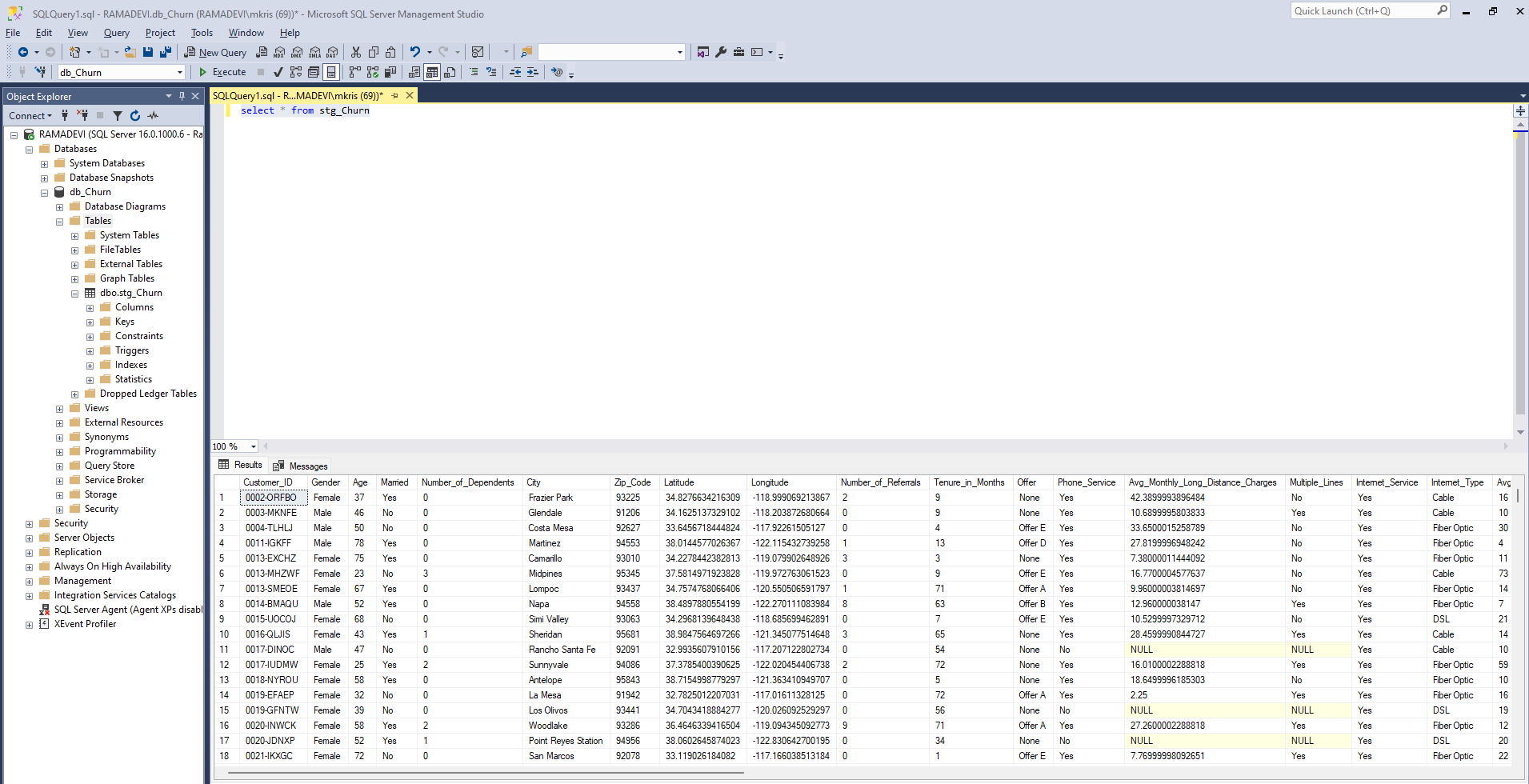
Mark Allow Nulls,

Keep Customer Id as primary key and remove allow nulls

Change the columns with data type as bit to nvarchar(50)







Data Exploration:

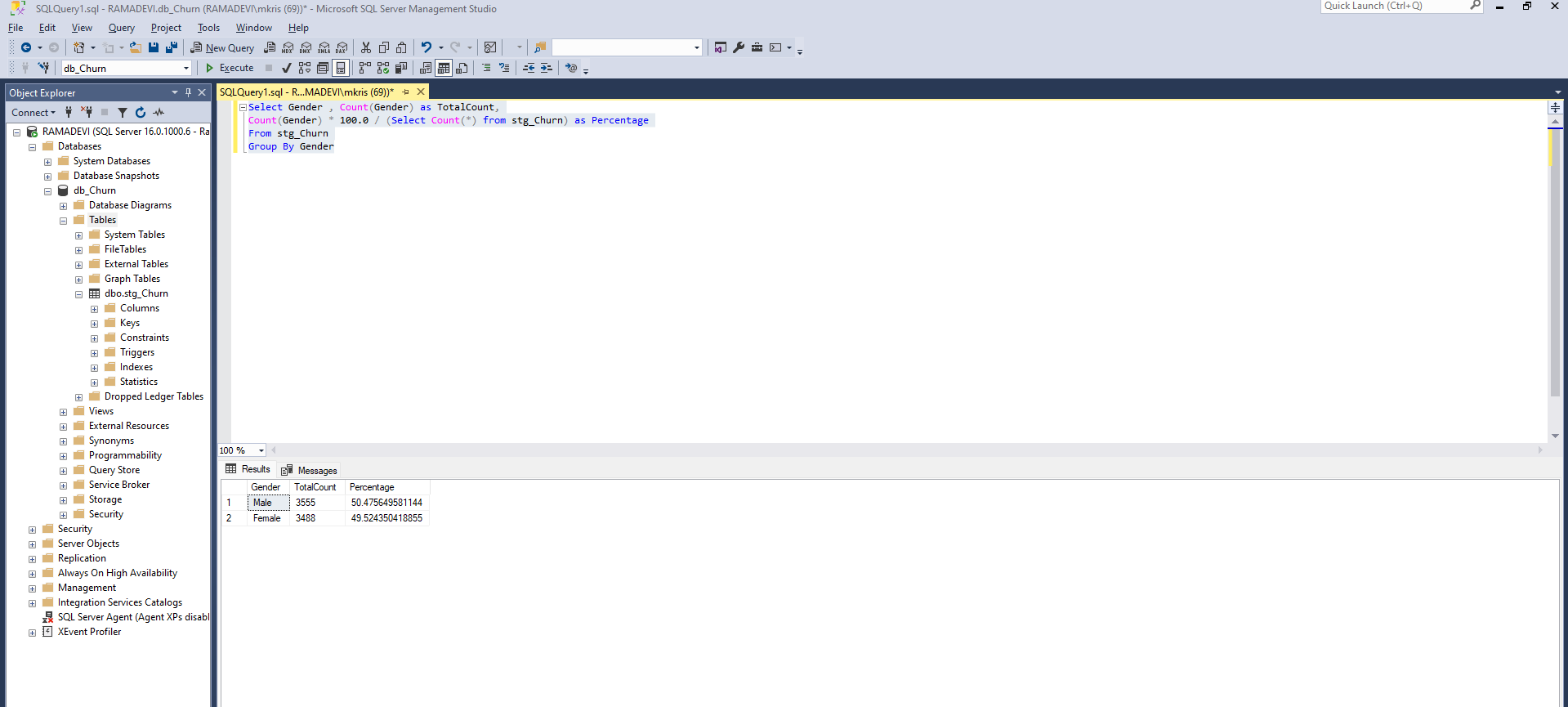
Gender column:

Select Gender , Count(Gender) as TotalCount,

Count(Gender) \* 100.0 / (Select Count(\*) from stg\_Churn) as Percentage

From stg\_Churn

Group By Gender



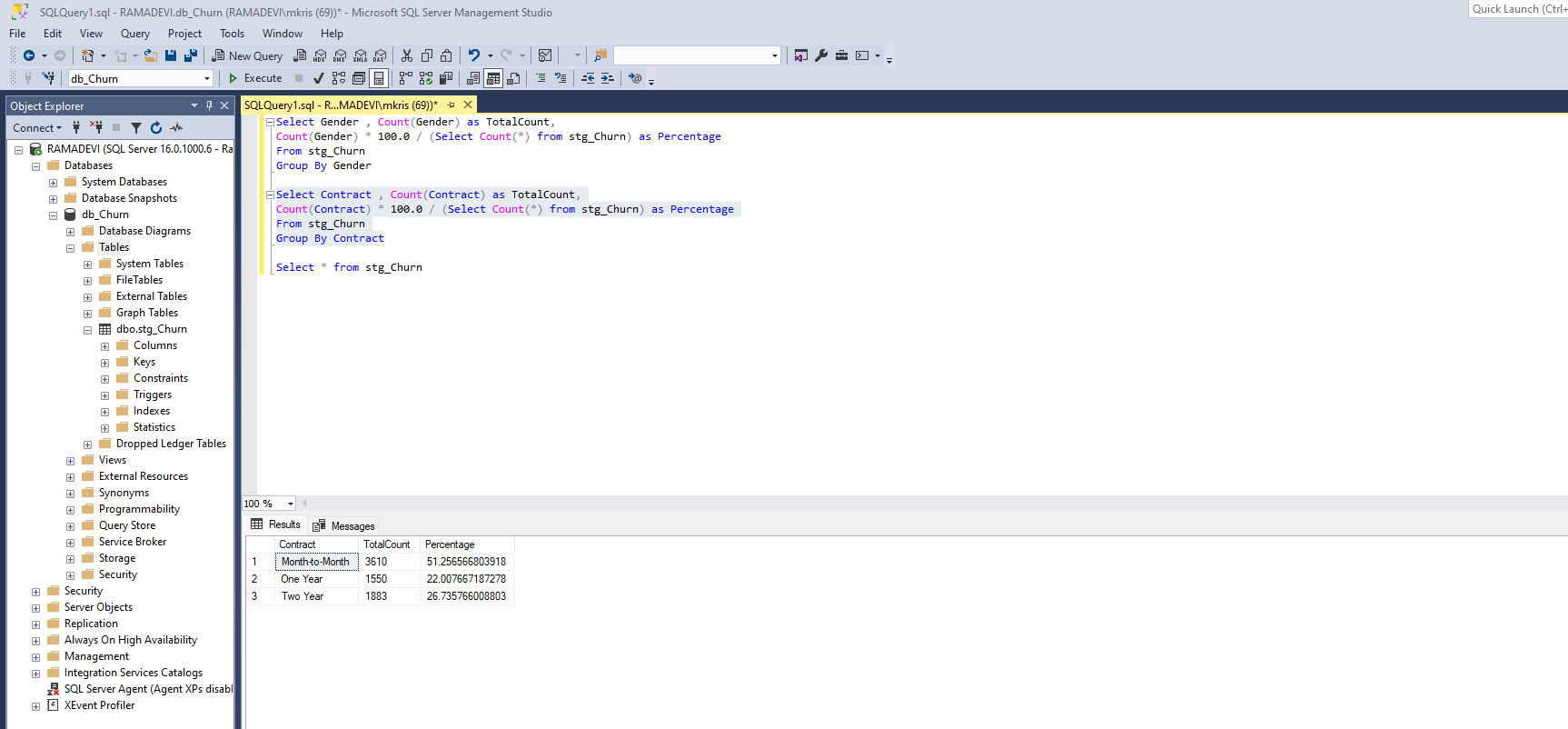
Contract Column:

Select Contract , Count(Contract) as TotalCount,

Count(Contract) \* 100.0 / (Select Count(\*) from stg\_Churn) as Percentage

From stg\_Churn

Group By Contract



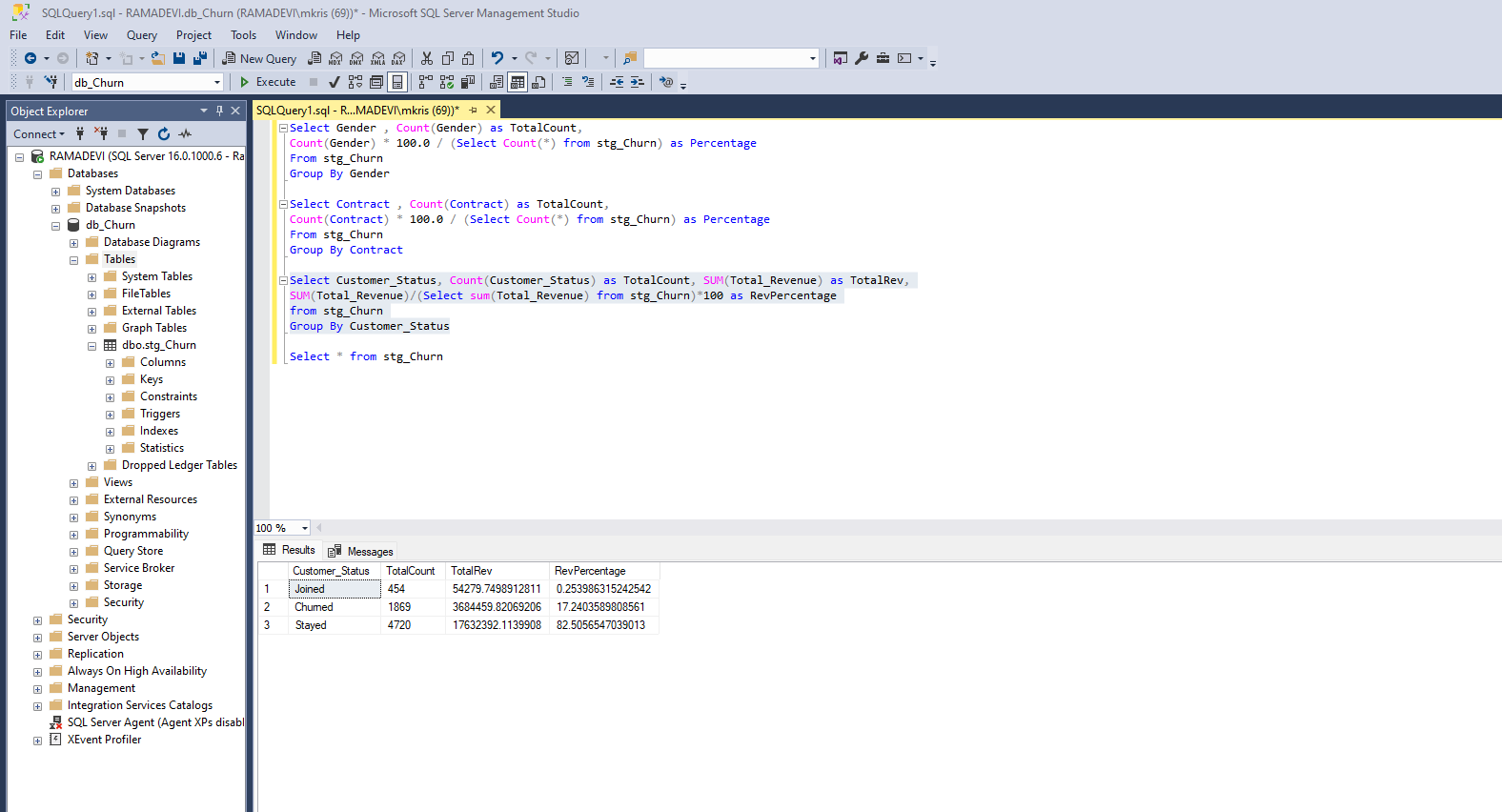
Customer\_Status:

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



City:

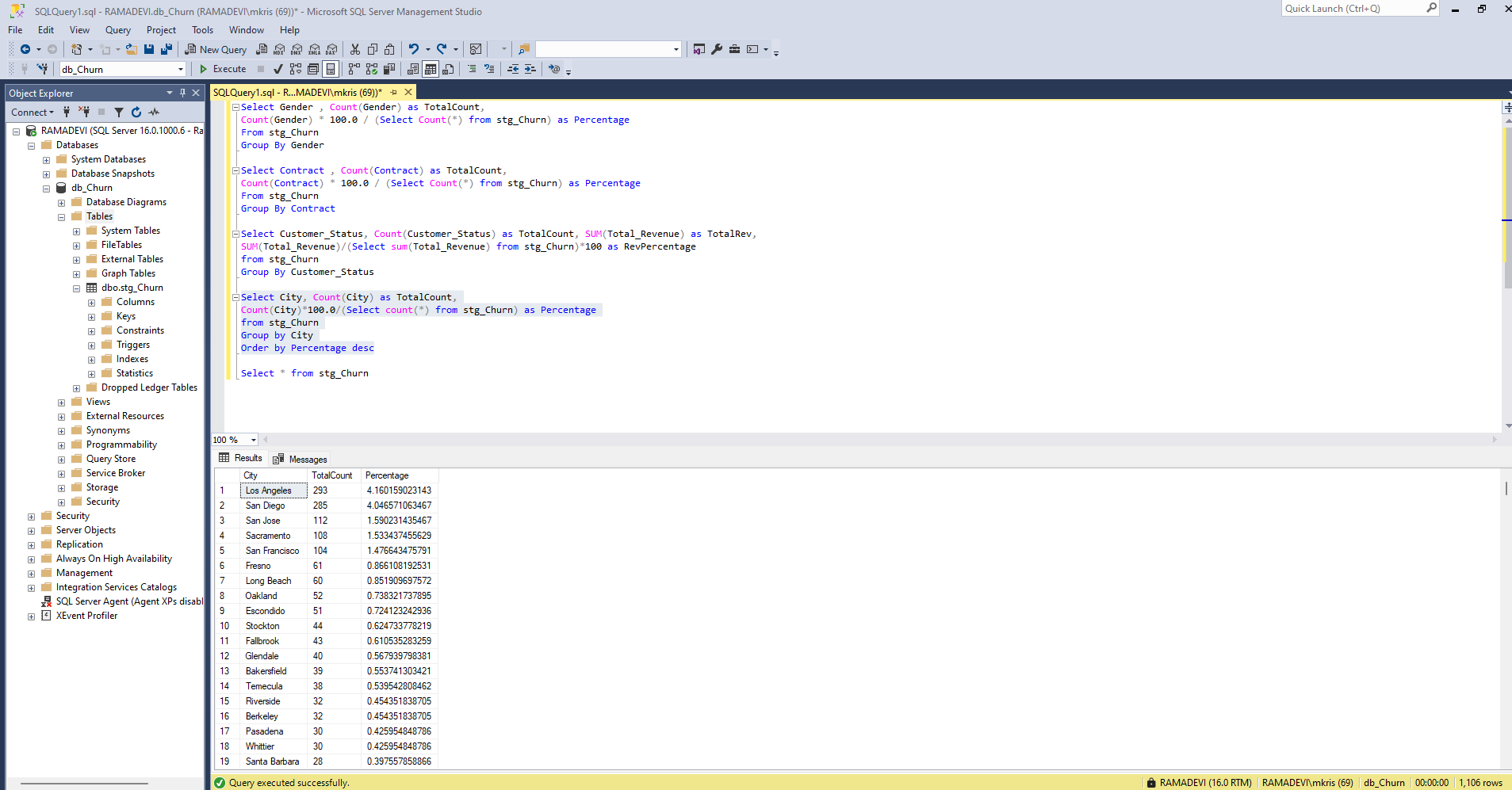
Select City, Count(City) as TotalCount,

Count(City)\*100.0/(Select count(\*) from stg\_Churn) as Percentage

from stg\_Churn

Group by City

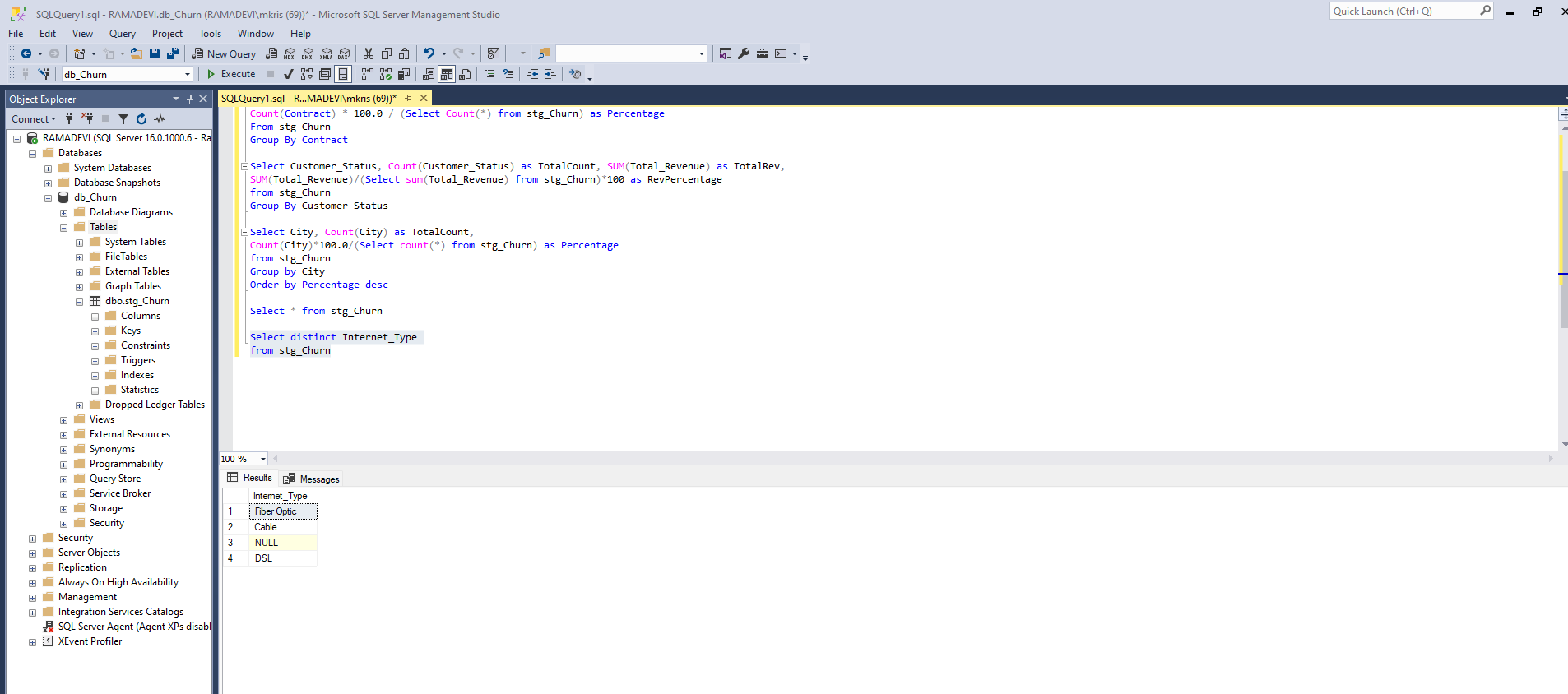
Order by Percentage desc



Distinct Internet Types:

Select distinct Internet\_Type

from stg\_Churn



Data Exploration – Check Nulls:

SELECT

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

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

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

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

SUM(CASE WHEN Number\_of\_Dependents IS NULL THEN 1 ELSE 0 END) AS Number\_of\_Dependents\_Null\_Count,

SUM(CASE WHEN City IS NULL THEN 1 ELSE 0 END) AS City\_Null\_Count,

SUM(CASE WHEN Zip\_Code IS NULL THEN 1 ELSE 0 END) AS Zip\_Code\_Null\_Count,

SUM(CASE WHEN Latitude IS NULL THEN 1 ELSE 0 END) AS Latitude\_Null\_Count,

SUM(CASE WHEN Longitude IS NULL THEN 1 ELSE 0 END) AS Longitude\_Null\_Count,

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

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

SUM(CASE WHEN Offer IS NULL THEN 1 ELSE 0 END) AS Offer\_Null\_Count,

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

SUM(CASE WHEN Avg\_Monthly\_Long\_Distance\_Charges IS NULL THEN 1 ELSE 0 END) AS Avg\_Monthly\_Long\_Distance\_Charges\_Null\_Count,

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

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

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

SUM(CASE WHEN Avg\_Monthly\_GB\_Download IS NULL THEN 1 ELSE 0 END) AS Avg\_Monthly\_GB\_Download\_Null\_Count,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

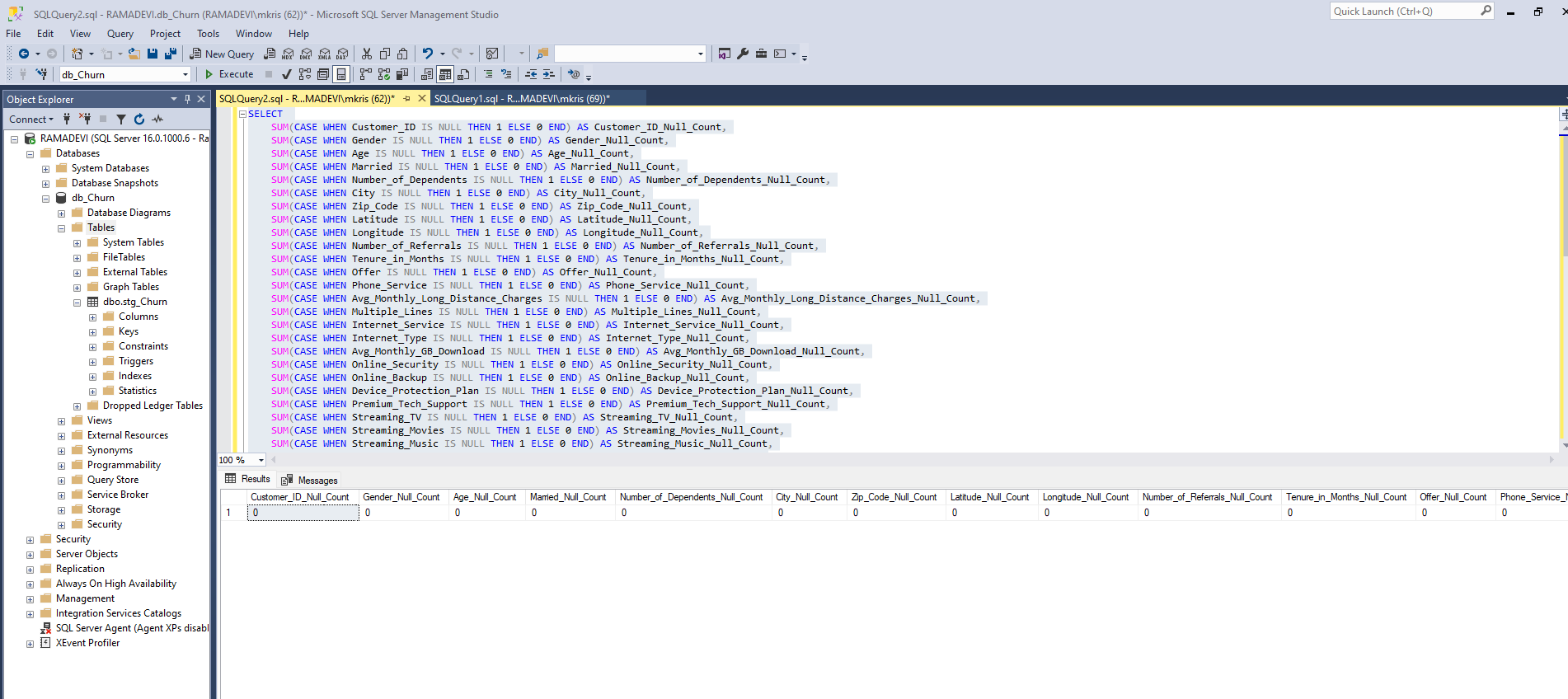
SUM(CASE WHEN Total\_Revenue IS NULL THEN 1 ELSE 0 END) AS Total\_Revenue\_Null\_Count,

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

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

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

FROM stg\_Churn;



Remove null and insert the new data into Prod table:

SELECT

Customer\_ID,

Gender,

Age,

Married,

Number\_of\_Dependents,

City,

Zip\_Code,

Latitude,

Longitude,

Number\_of\_Referrals,

Tenure\_in\_Months,

Offer,

Phone\_Service,

ISNULL(Avg\_Monthly\_Long\_Distance\_Charges,0.00) AS Avg\_Monthly\_Long\_Distance\_Charges,

ISNULL(Multiple\_Lines, 'No') AS Multiple\_Lines,

Internet\_Service,

ISNULL(Internet\_Type, 'None') AS Internet\_Type,

ISNULL(Avg\_Monthly\_GB\_Download,0) AS Avg\_Monthly\_GB\_Download,

ISNULL(Online\_Security, 'No') AS Online\_Security,

ISNULL(Online\_Backup, 'No') AS Online\_Backup,

ISNULL(Device\_Protection\_Plan, 'No') AS Device\_Protection\_Plan,

ISNULL(Premium\_Tech\_Support, 'No') AS Premium\_Tech\_Support,

ISNULL(Streaming\_TV, 'No') AS Streaming\_TV,

ISNULL(Streaming\_Movies, 'No') AS Streaming\_Movies,

ISNULL(Streaming\_Music, 'No') AS Streaming\_Music,

ISNULL(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,

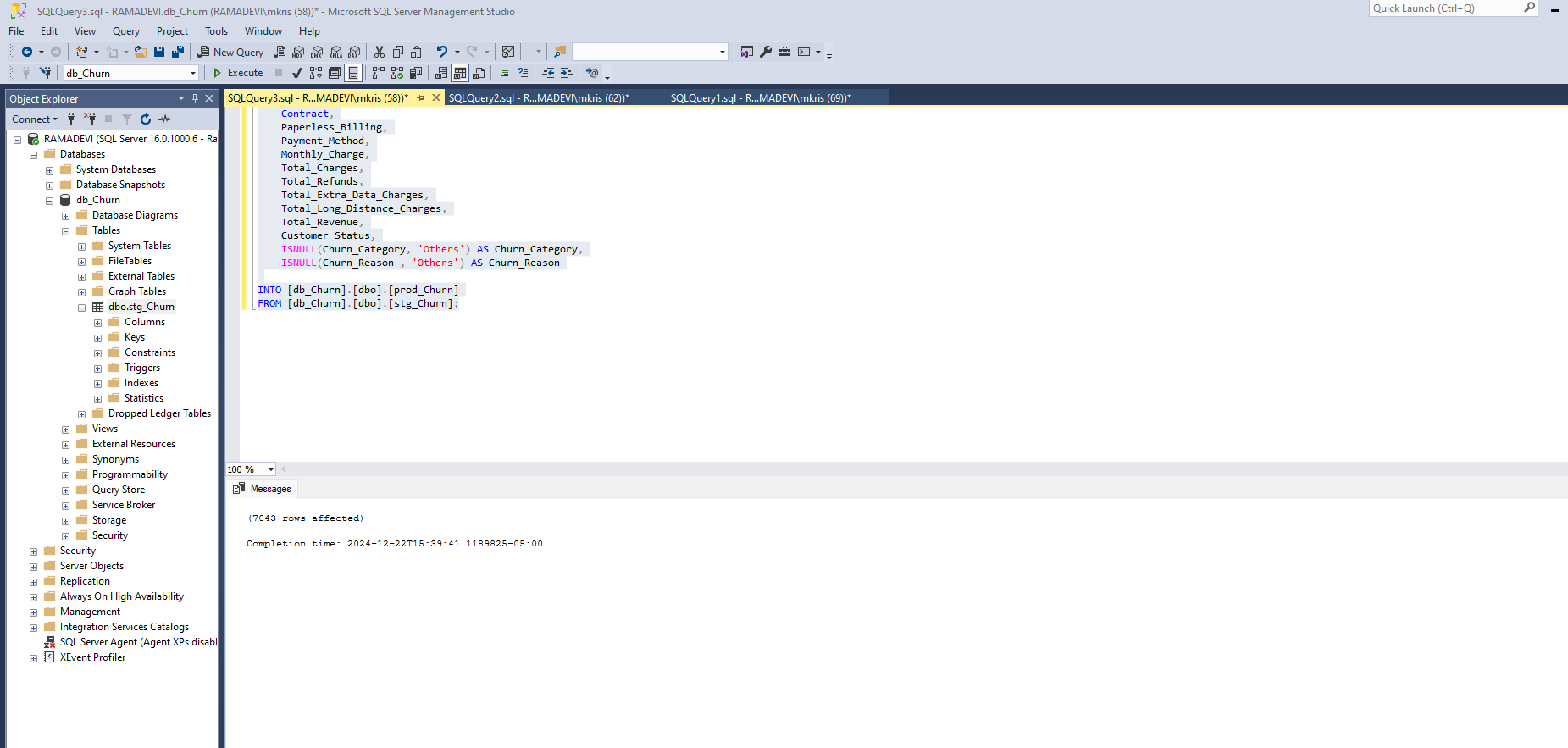
Customer\_Status,

ISNULL(Churn\_Category, 'Others') AS Churn\_Category,

ISNULL(Churn\_Reason , 'Others') AS Churn\_Reason

INTO [db\_Churn].[dbo].[prod\_Churn]

FROM [db\_Churn].[dbo].[stg\_Churn];



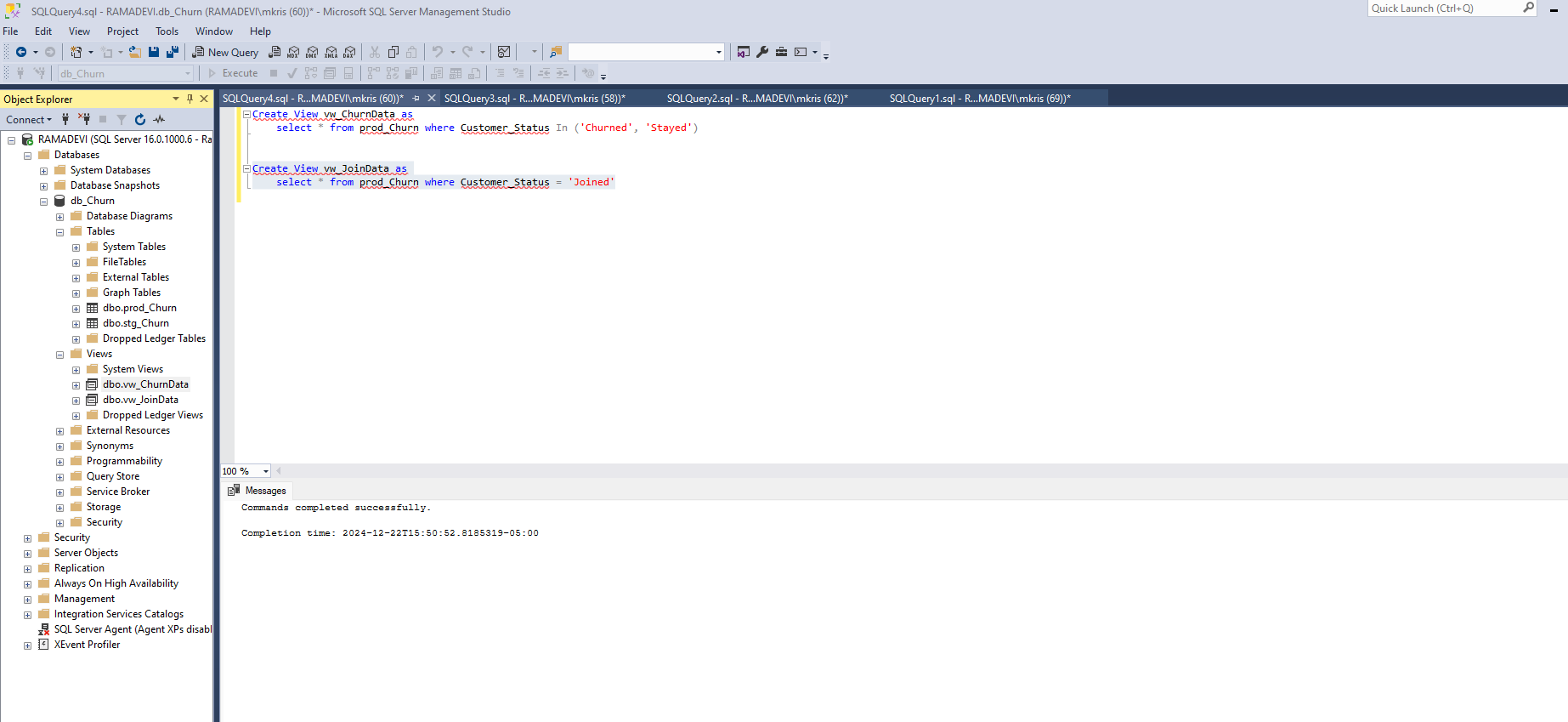
**Create View for Power BI**

Create View vw\_ChurnData as

select \* from prod\_Churn where Customer\_Status In ('Churned', 'Stayed')

Create View vw\_JoinData as

select \* from prod\_Churn where Customer\_Status = 'Joined'

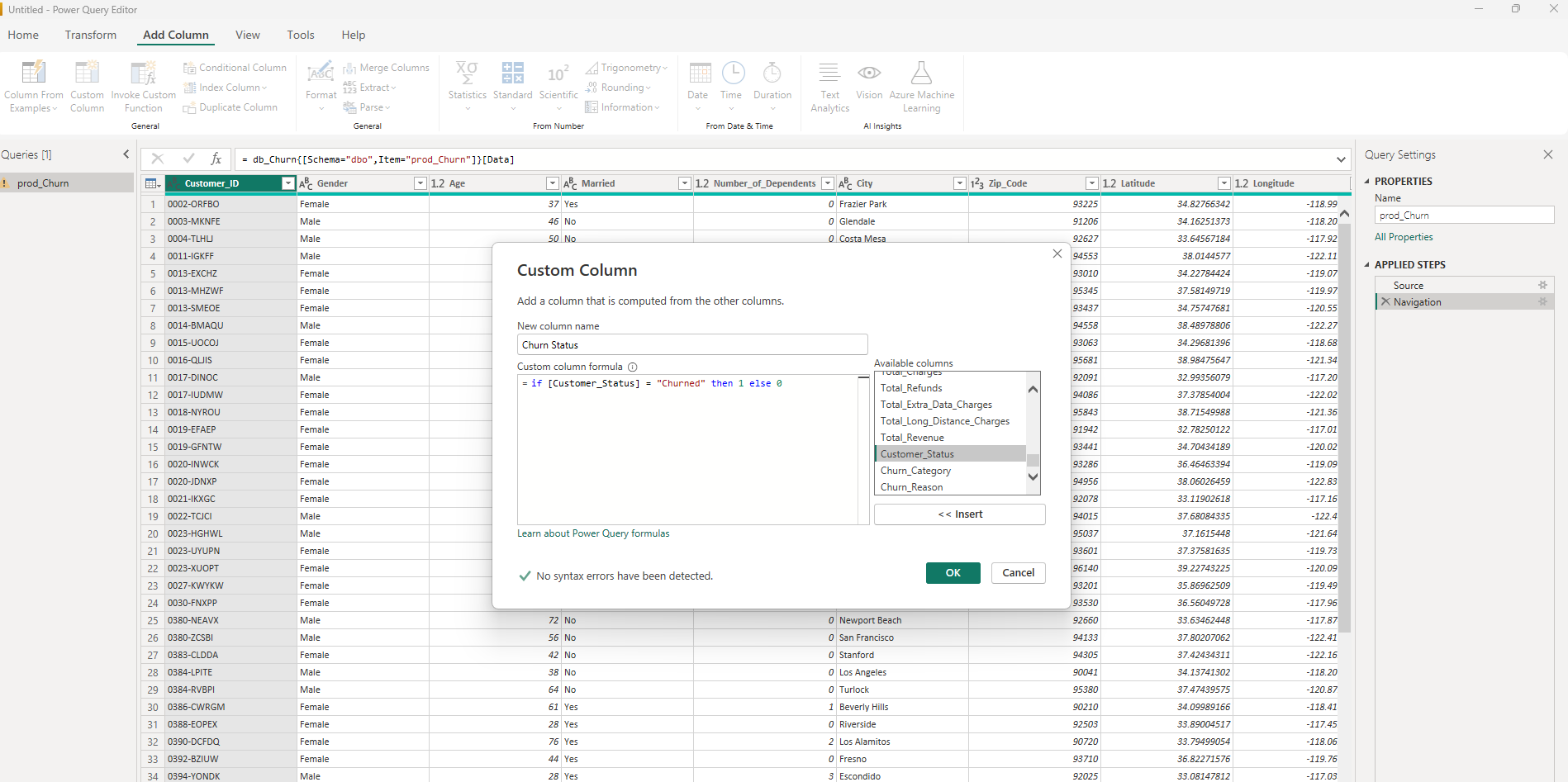


Power BI Steps:

Import the data from SQL Server and load it

Tranform data in Power BI:

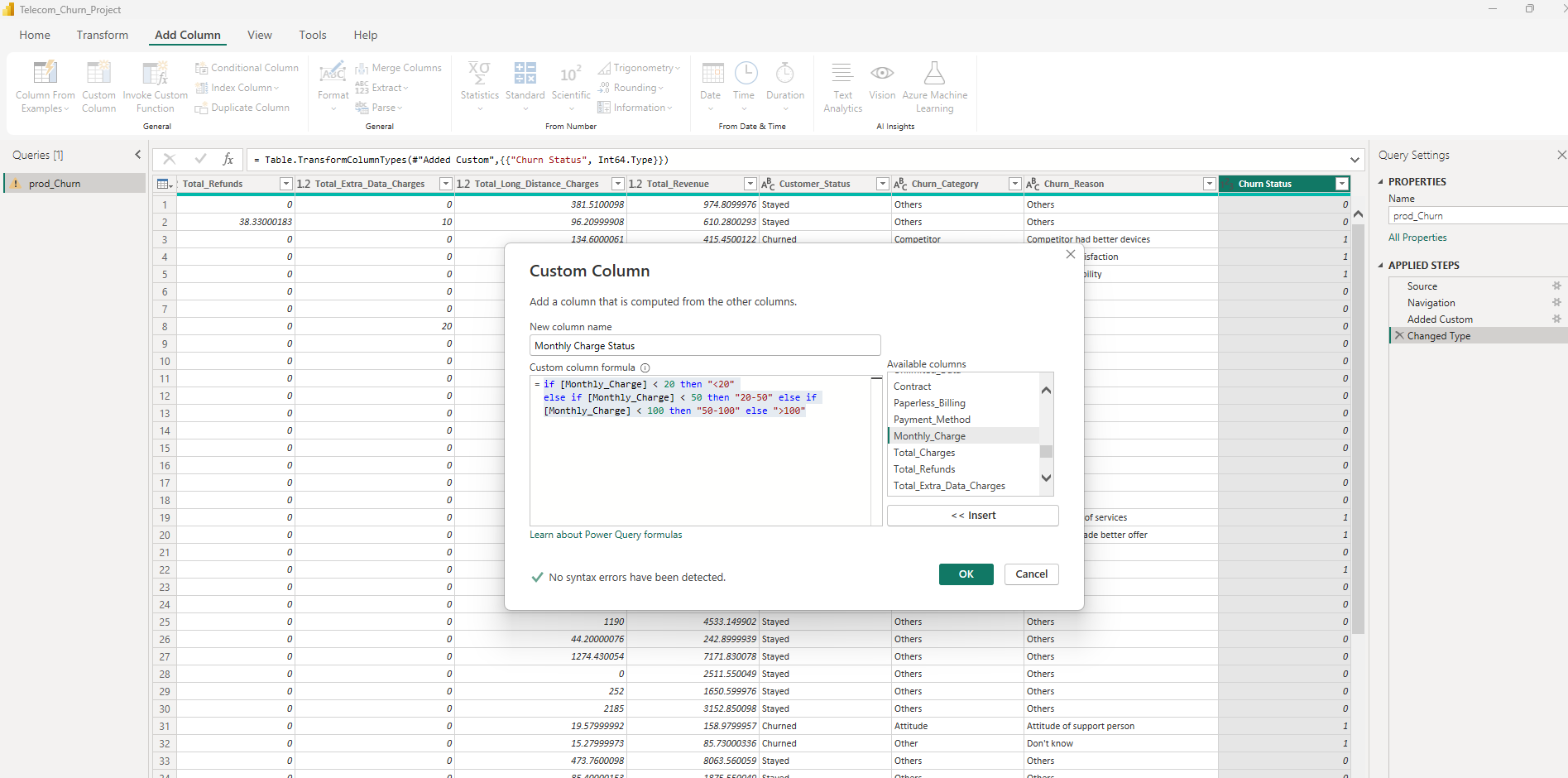
1. Create a new conditional column, if cust status is churned, then 1 else 0



1. Change the data type of Churn Status to Whole Number
2. if [Monthly\_Charge] < 20 then "<20"

else if [Monthly\_Charge] < 50 then "20-50" else if

[Monthly\_Charge] < 100 then "50-100" else ">100"



1. **Create below measures:**

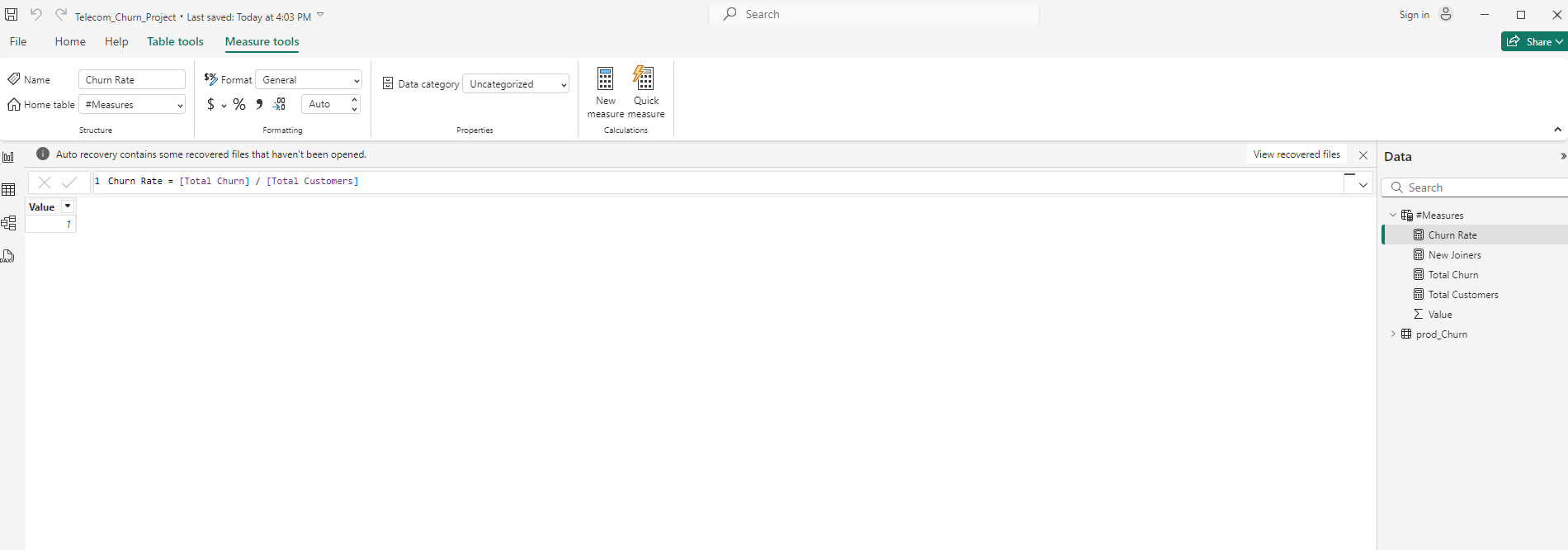
**Summary Page - Measures**

Total Customers = Count(prod\_Churn[Customer\_ID])

New Joiners = CALCULATE(COUNT(prod\_Churn[Customer\_ID]), prod\_Churn[Customer\_Status] = "Joined")

Total Churn = SUM(prod\_Churn[Churn Status])

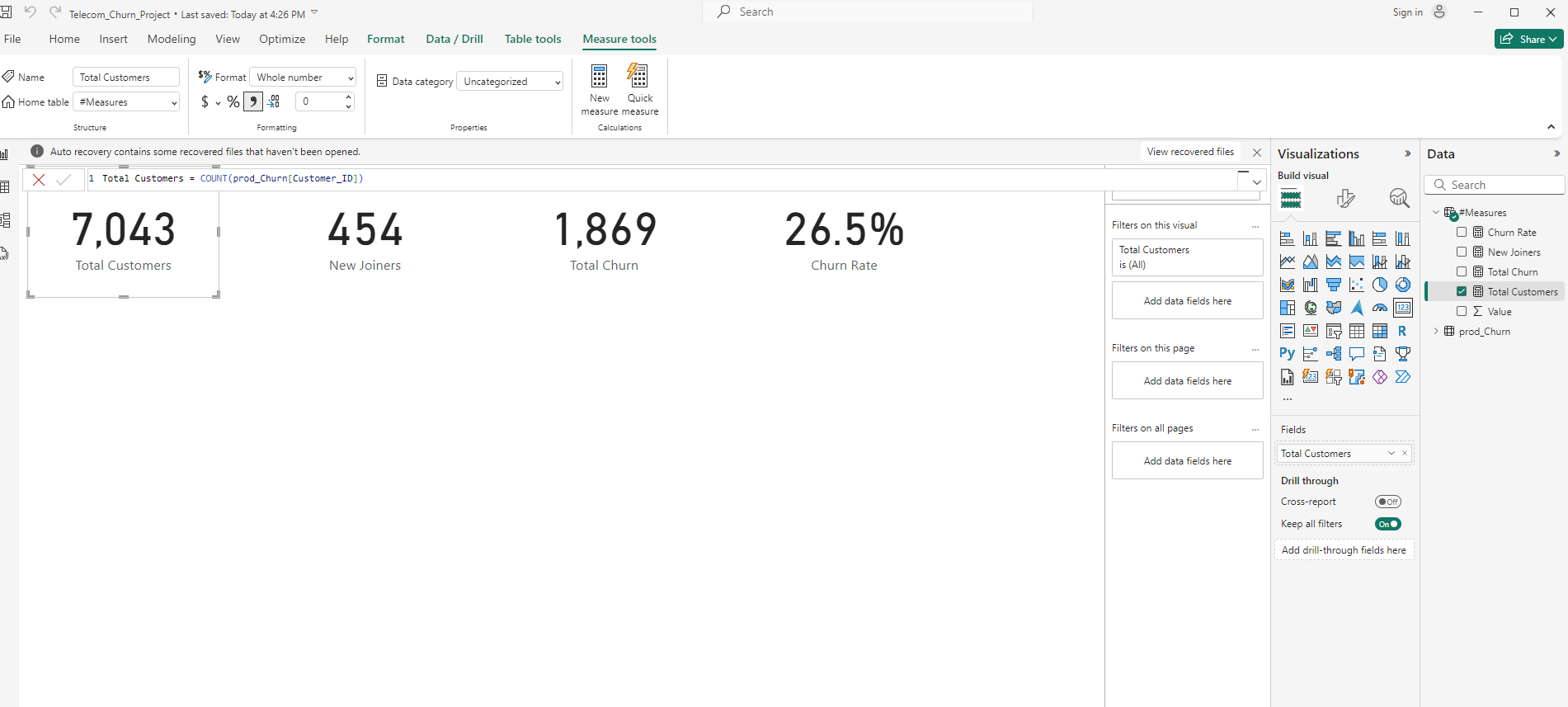
Churn Rate = [Total Churn] / [Total Customers]



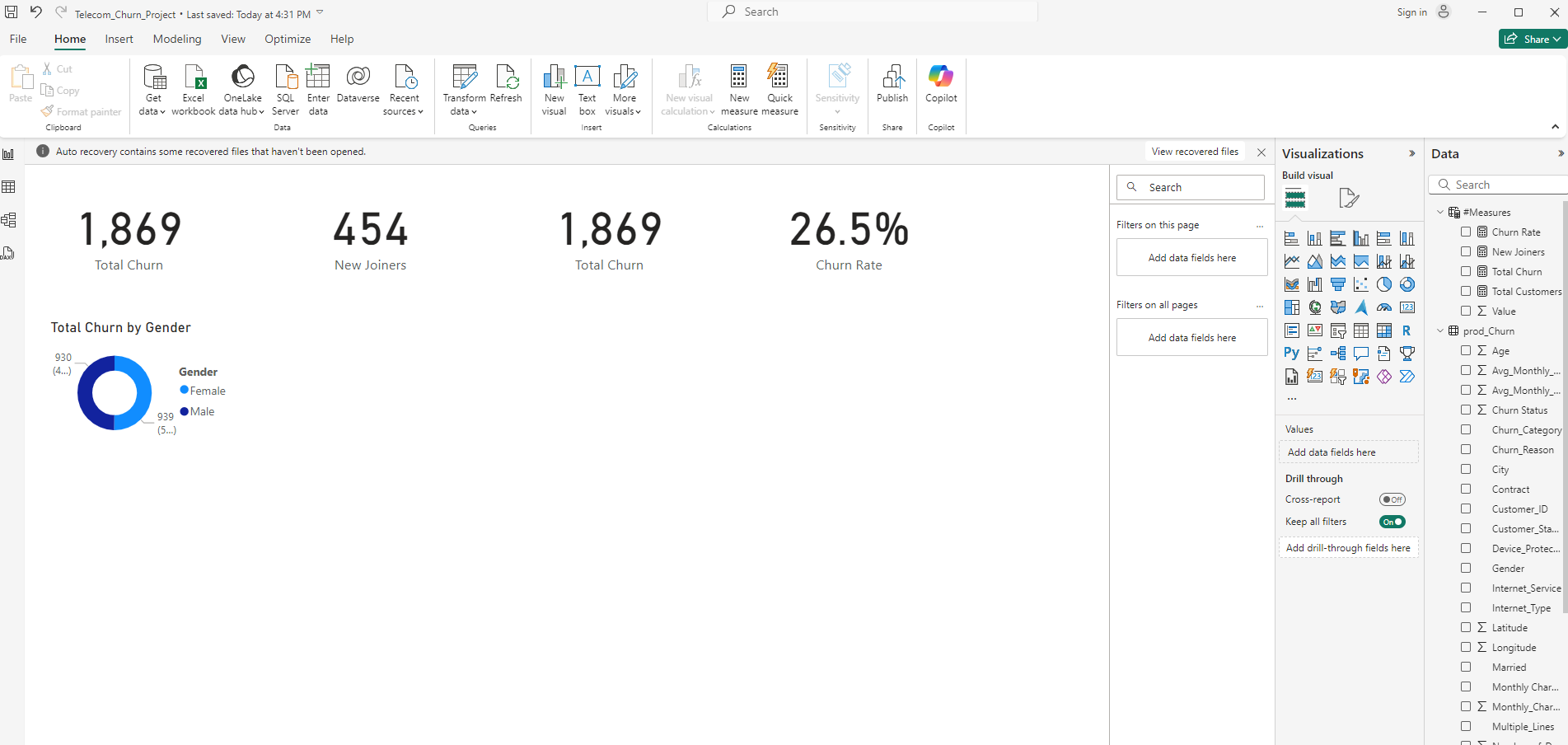
1. Display below measures as Card Visualizations

* Total Customers
* New Joiners
* Total Churn
* Churn Rate

(Format the card values in % and comma separated values)



1. Show Gender and Total Churn as Donut Chart. Choose Value display units as none.

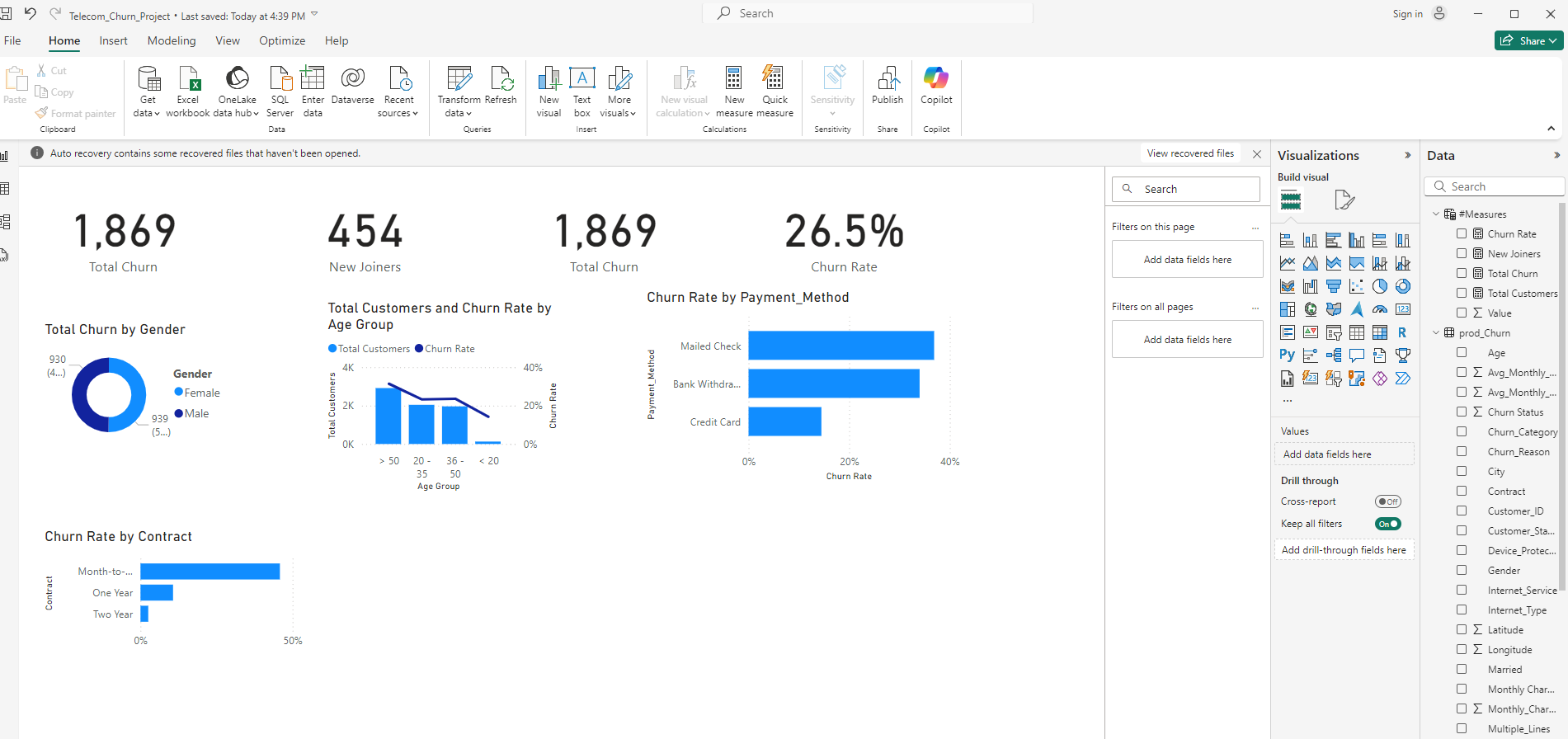


1. Created Total Customers and Churn rate by Age Group -> Line and Stacked bar chart (For this created a reference table named reference\_AgeGrp with below changes )

1. Keep only Age column and remove duplicates

2. Age Group = if [Age] < 20 then "< 20" else if [Age] < 36 then "20 - 35" else if [Age] < 51 then "36 - 50" else "> 50"

1. Created Churn rate by Payment Method -> Clustered Bar Chart
2. Created Churn rate by Contract -> Clustered Bar Chart



1. In reference\_AgeGrp table, add another column

* AgeGrpSorting = if [Age Group] = "< 20" then 1 else if [Age Group] = "20 - 35" then 2 else if [Age Group] = "36 - 50" then 3 else 4
* Change data type of AgeGrpSorting

1. In reference\_TenureGrp table, add another column

* TenureGrpSorting = if [Tenure Group] = "< 6 Months" then 1 else if [Tenure Group] = "6-12 Months" then 2 else if [Tenure Group] = "12-18 Months" then 3 else if [Tenure Group] = "18-24 Months " then 4 else 5
* Change data type of TenureGrpSorting

1. City and Churn rate clustered bar chart -> Filter Top N cities

DashBoard Images:

