UNIVERSITY OF INFORMATION TECHNOLOGY, VNUHCM

FACULTY OF INFORMATION SYSTEMS

Final project

Course: MSIS4263.P21.CTTT – Decision support and business intelligence application

Lecturer: Dr Do Phuc

TA: MsC. Nguyen Thi Kim Phung

Group:

1. Lý Tuấn Khoa 21522225 Member
2. Nguyễn Gia Huy 21522152 Member

TABLE OF CONTENT

Chapter 1: SSIS process

1.1 Data

Link data: https://www.kaggle.com/datasets/blastchar/telco-customer-churn

This report utilizes the Telcom Customer Churn dataset to examine customer behavior associated with service cancellation (churn) in the telecommunications industry. Each row in the dataset represents a customer, with 21 features describing attributes such as gender, seniority, and so on.

The primary objective of this project is to determine the key factors that influence whether a customer will leave the service. Understanding these factors can help the company improve service quality and customer retention. The target variable in this dataset is "**churn**", which indicates whether a customer has left the service.

CustomerId	**INT**
Gender	**NVARCHAR**
SenoirCitizen	**INT**
Dependents	**NVARCHAR**
Tenure	**INT**
PhoneService	**NVARCHAR**
MultipleLines	**NVARCHAR**
InternetService	**NVARCHAR**
OnlineSecurity	**NVARCHAR**
OnlineBackup	**NVARCHAR**
DeviceProtection	**NVARCHAR**
TechSupport	**NVARCHAR**
StreamingTV	**NVARCHAR**
StreamingMovies	**NVARCHAR**
Contract	**NVARCHAR**
PaperlessBilling	**NVARCHAR**
PaymentMethod	**NVARCHAR**
MonthlyCharges	**FLOAT**
TotalCharges	**FLOAT**
Churn	**NVARCHAR**
ServiceID	**INT**
BillingID	**INT**
ContractID	**INT**
id	**INT**

1.2 Process of building SSIS

Step 1: Pulling the Excel icon

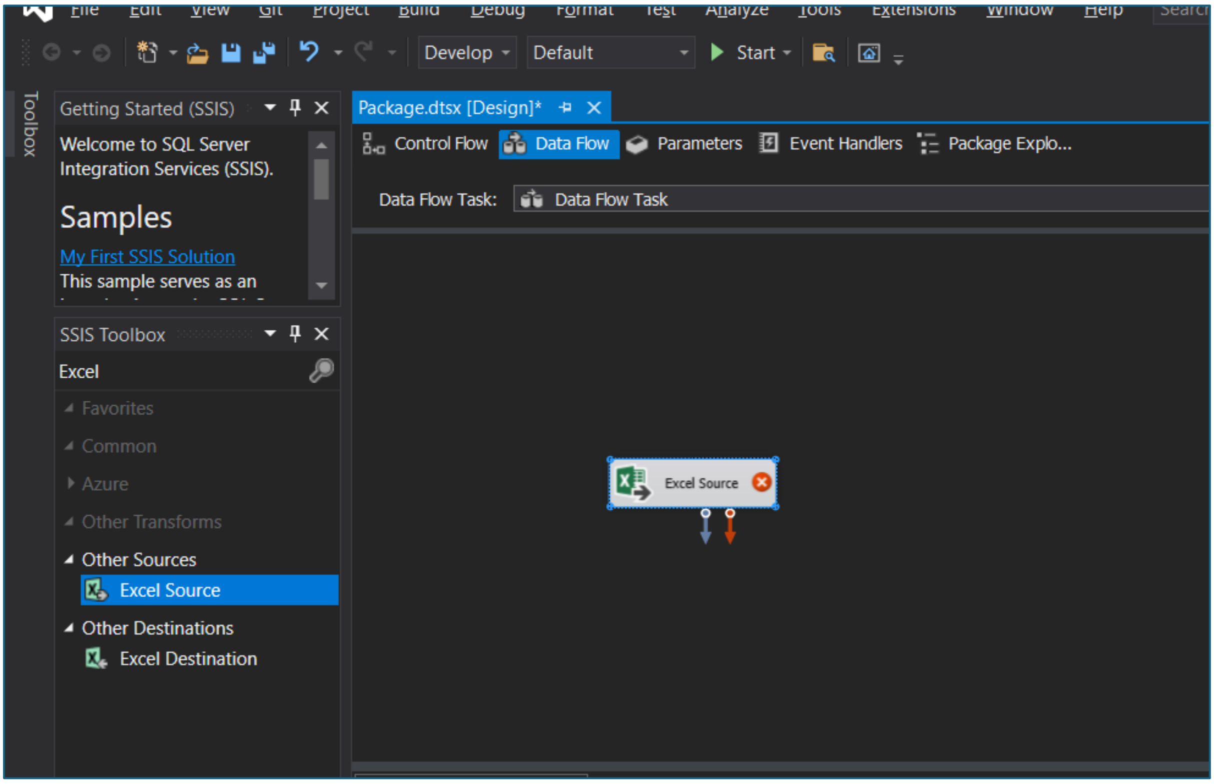


Figure 1. Pulling excel source

After we selected the Excel file then we used multicast to connect it like this picture below:

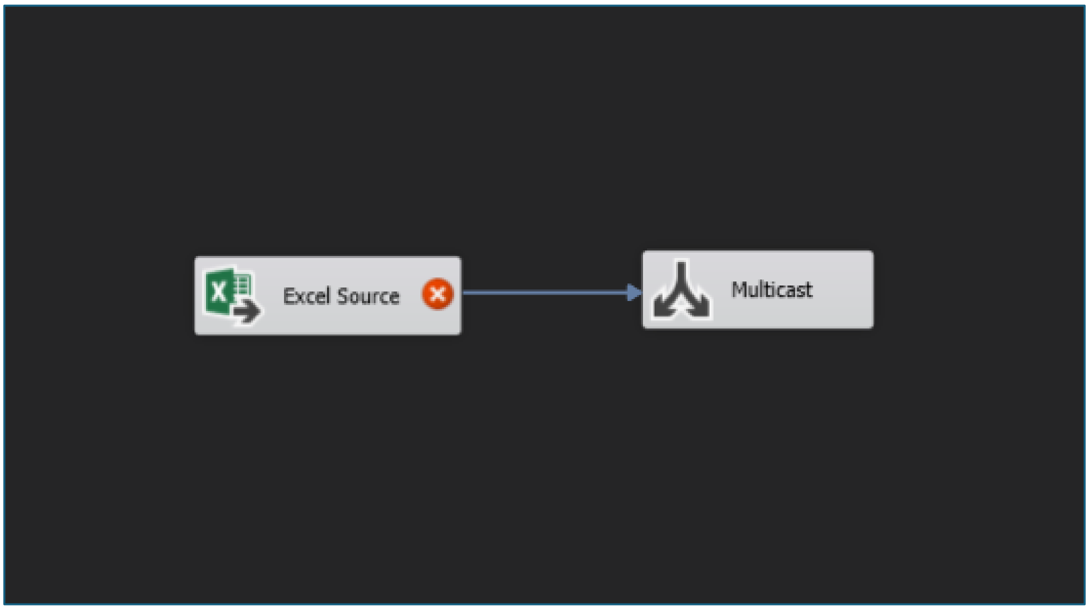


Figure 2. connecting multicast

After this step, we pulled and sorted suitable data contributions for each Dimension of the cube. In this project, we put in 5 dimensions (4 dim and 1 fact):

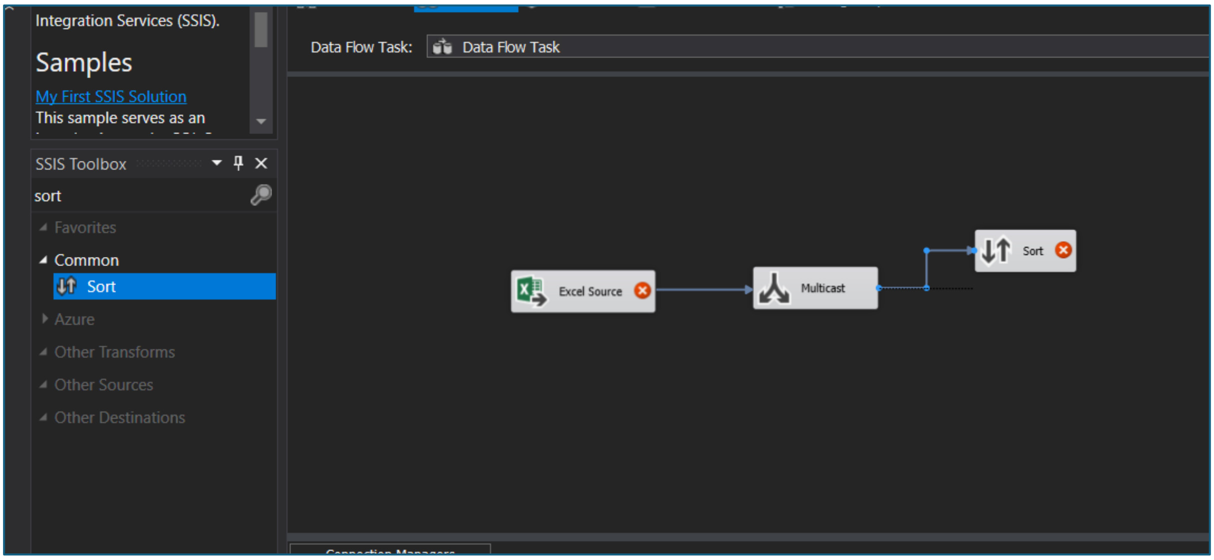


Figure 3. Sorting

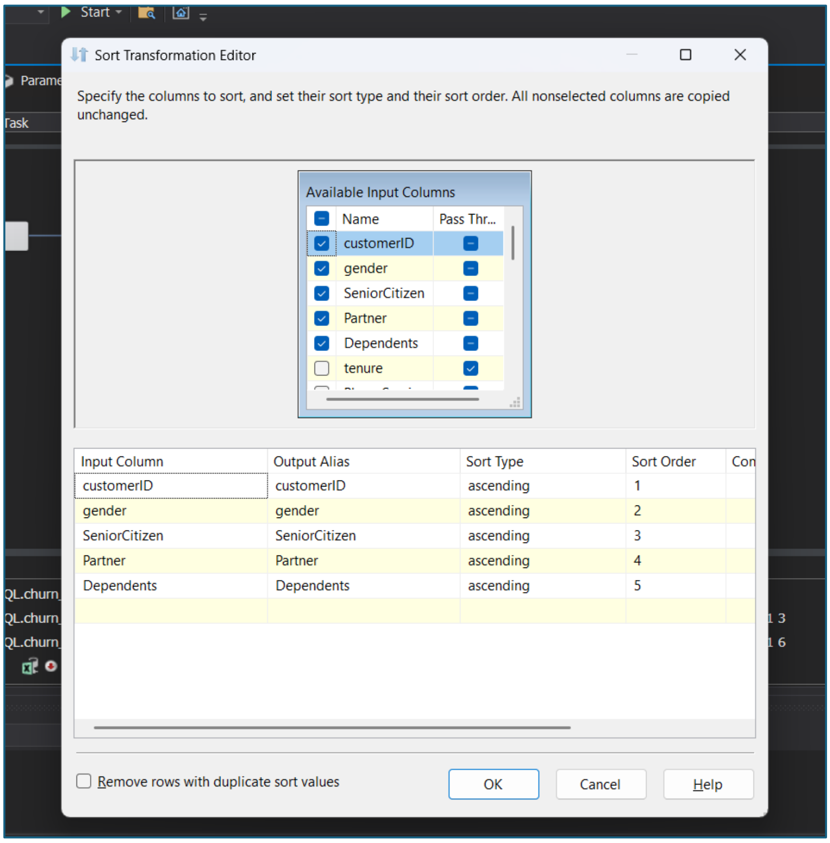


Figure 4. Choosing attribution

In OLE DB, we queried sql commands in it

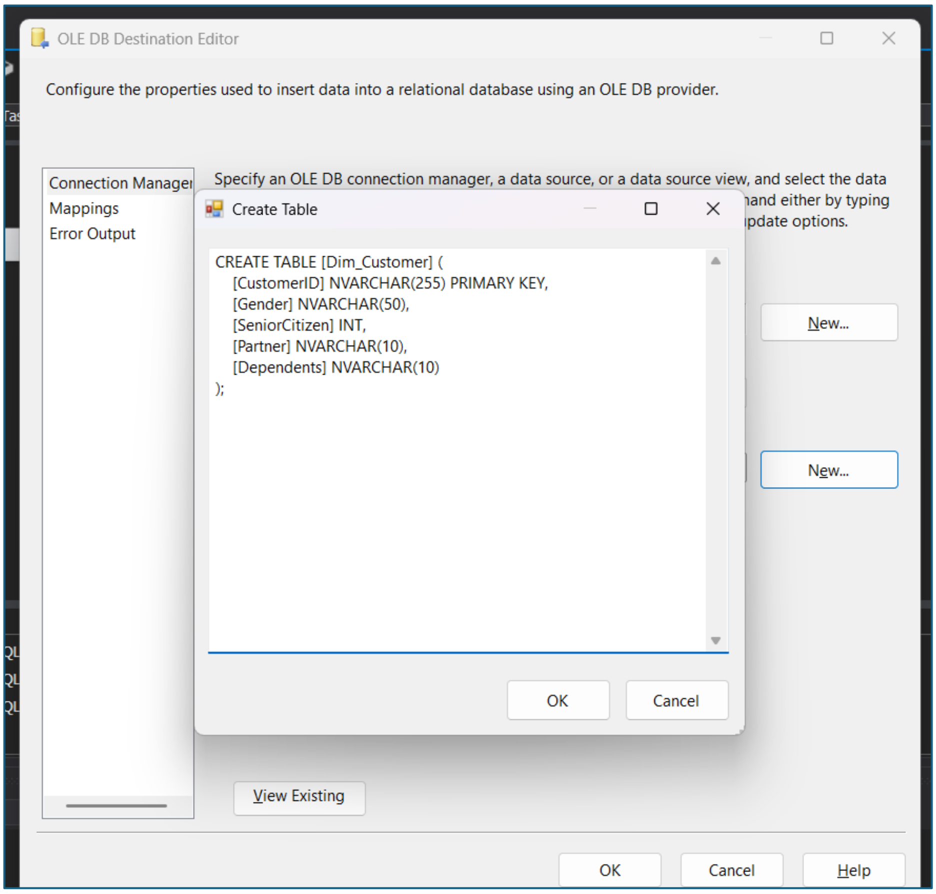


Figure 5. SQL query

To connect and execute in SQL, we moved to "Control flow" and pulled the Execute SQL Task icon

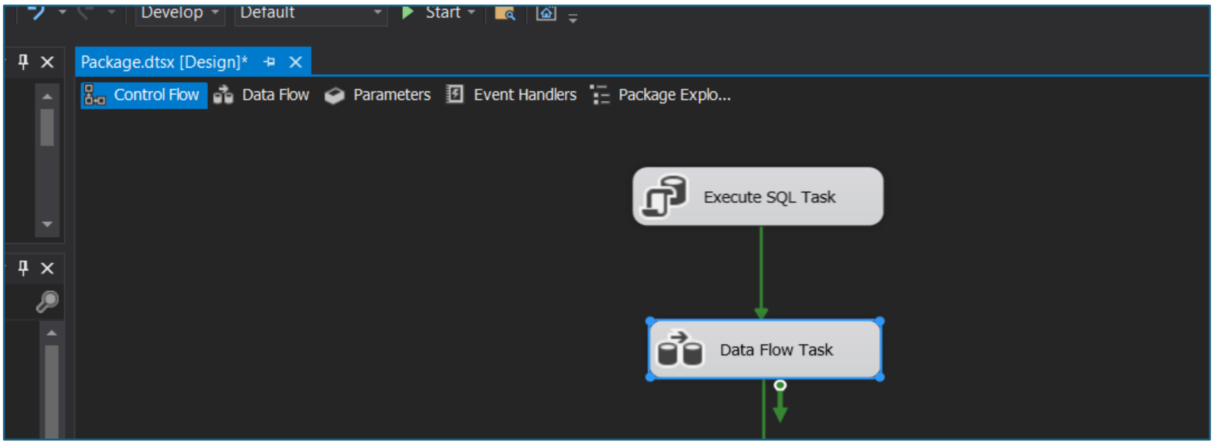


Figure 6. Execute SQL task

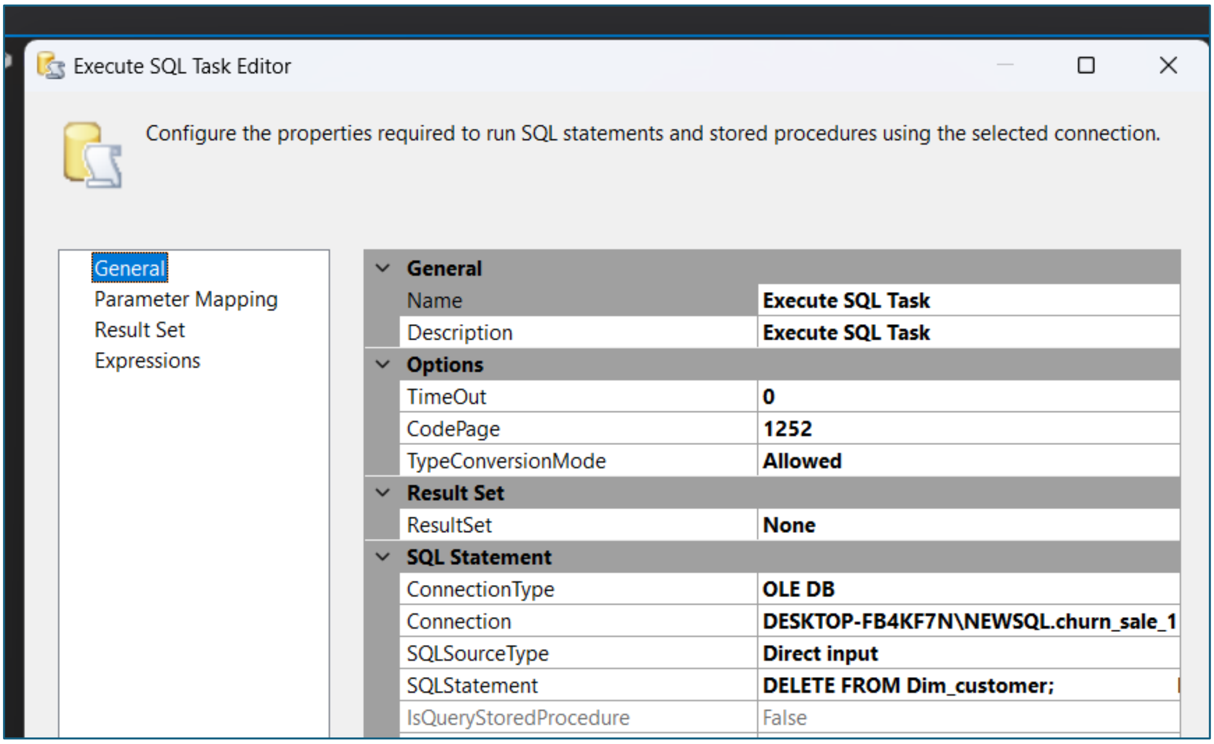


Figure 7. Connecting to SQL management

To execute and connect it, we created the database for it first in SQL management.

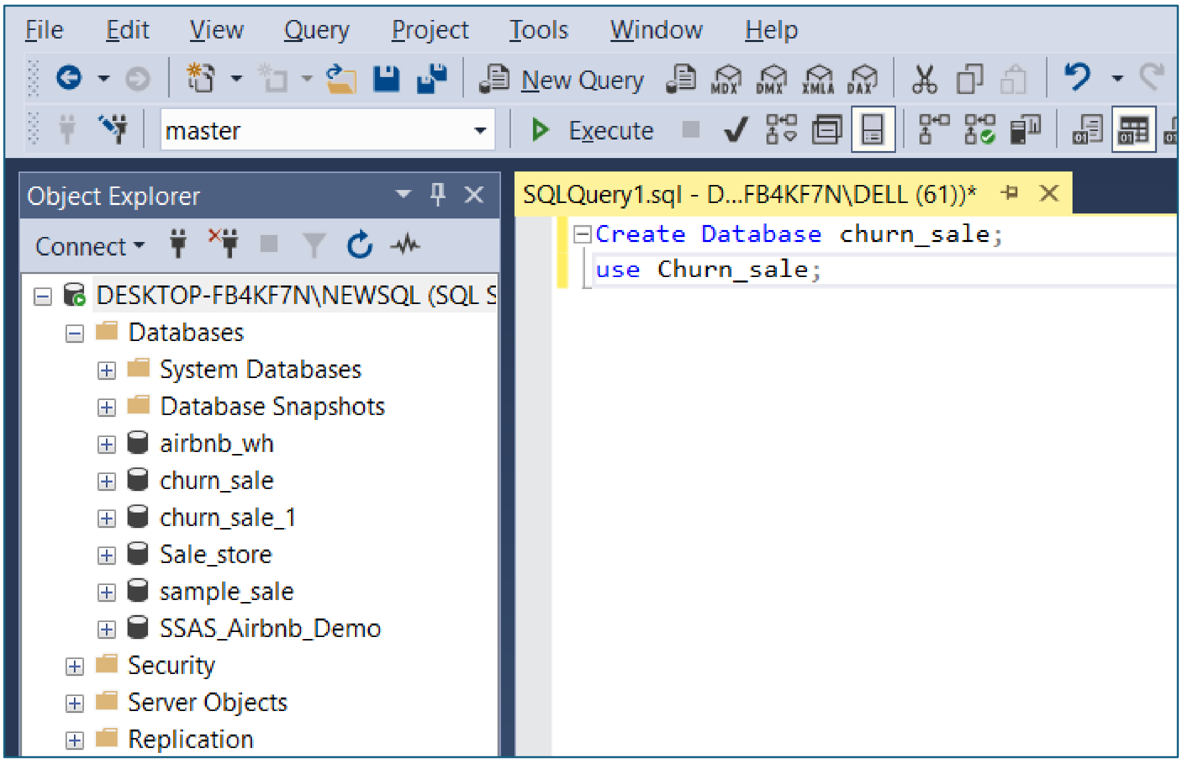


Figure 8. Create Database

And put SQL statements:

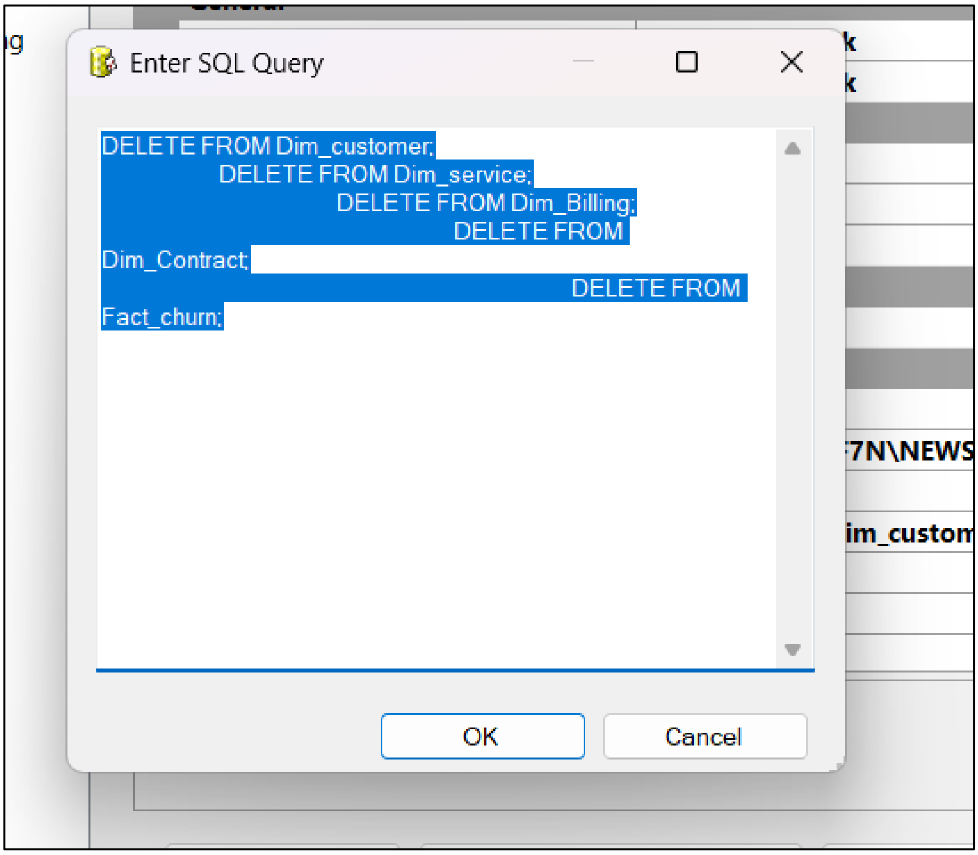


Figure 9. Deleting Query

Finally, do with foreign keys for those Dims

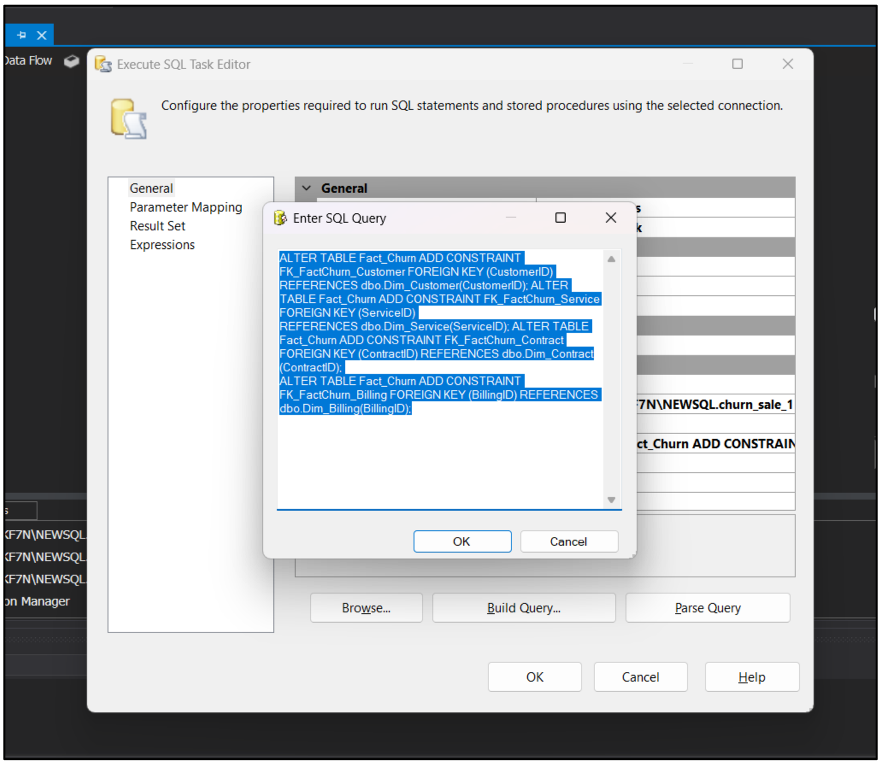


Figure 10. Altering foreign keys

Result:

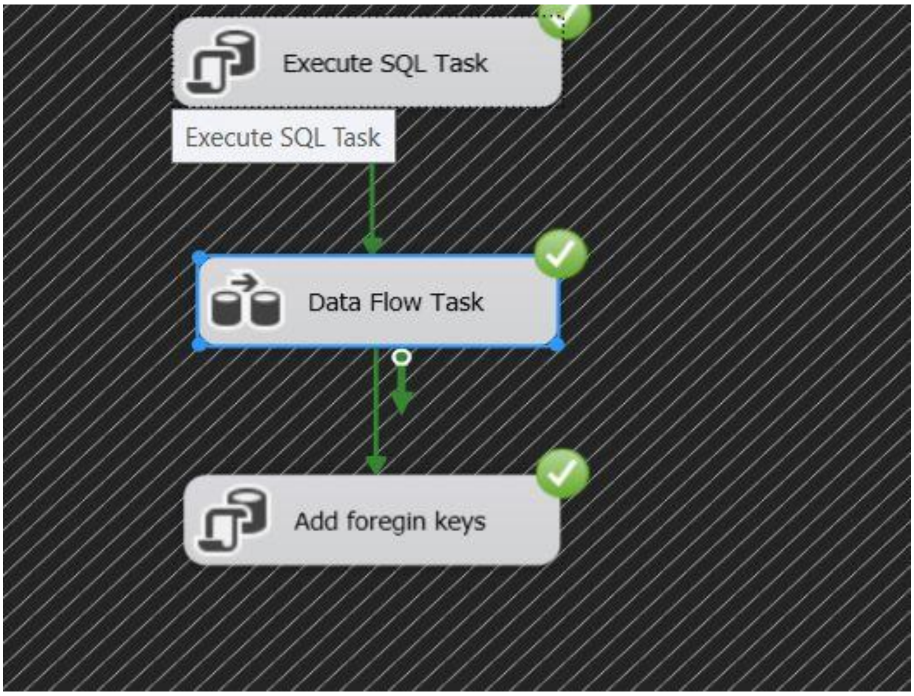


Figure 11. Execute successfully

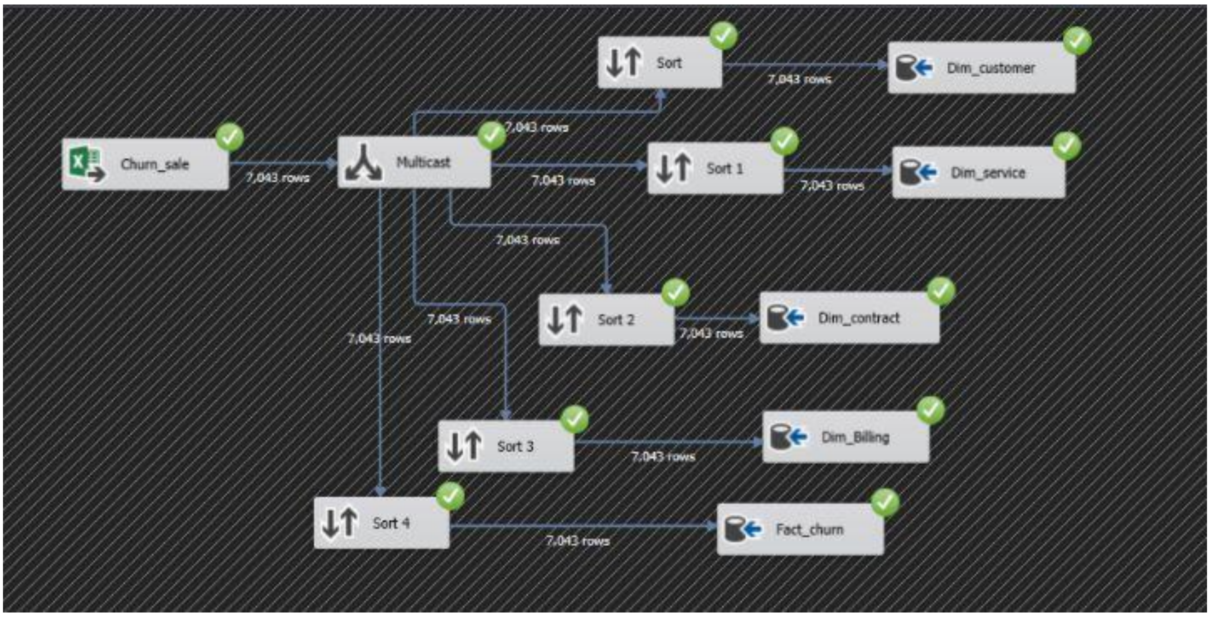
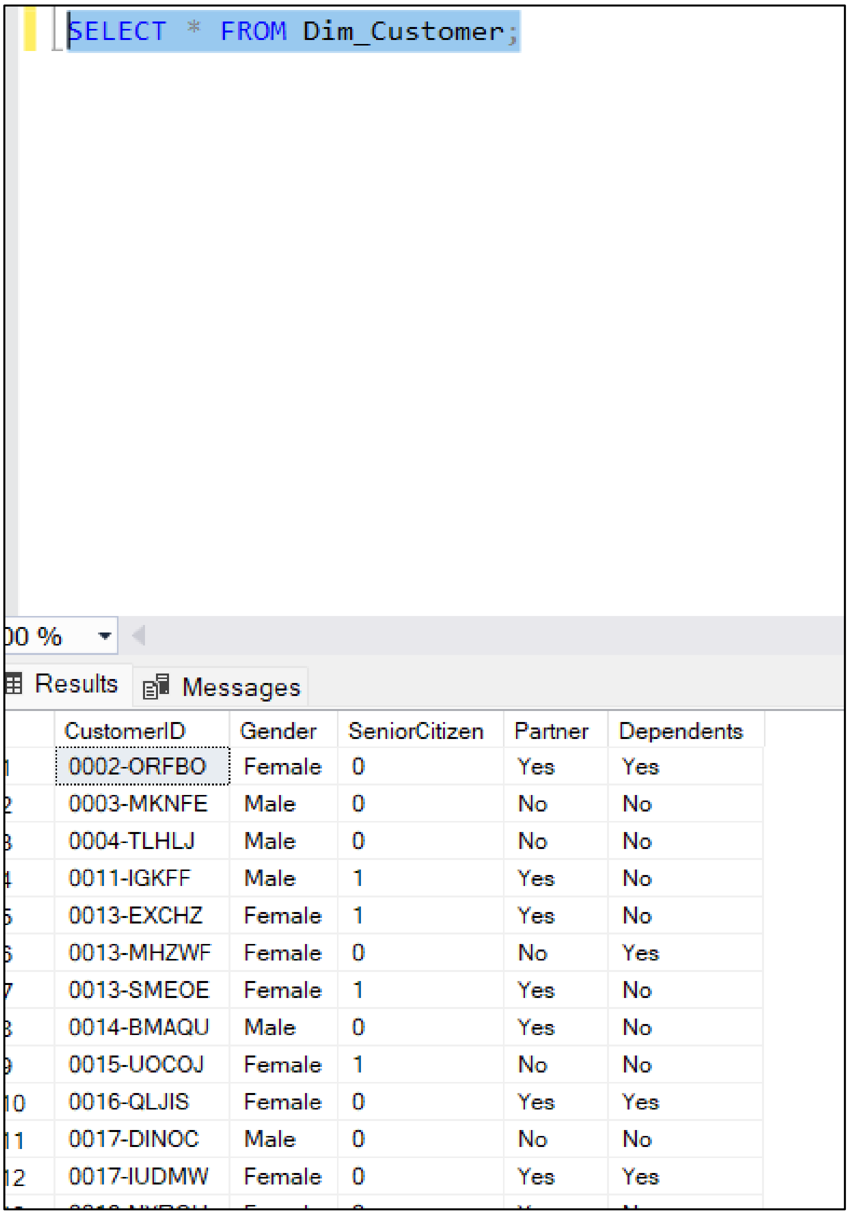


Figure 12. Data flow successfully



```
SELECT * FROM Dim_Customer;
```

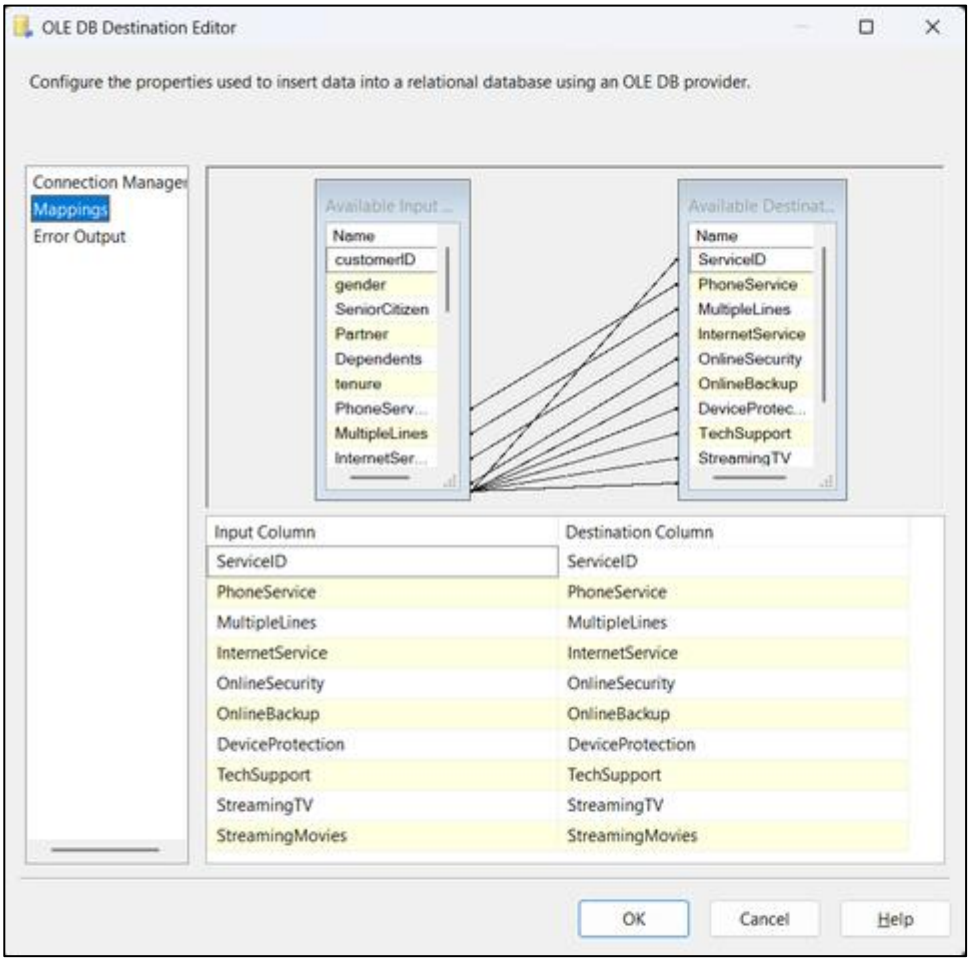

	CustomerID	Gender	SeniorCitizen	Partner	Dependents
1	0002-ORFBO	Female	0	Yes	Yes
2	0003-MKNFE	Male	0	No	No
3	0004-TLHLJ	Male	0	No	No
4	0011-IGKFF	Male	1	Yes	No
5	0013-EXCHZ	Female	1	Yes	No
6	0013-MHZWF	Female	0	No	Yes
7	0013-SMEOE	Female	1	Yes	No
8	0014-BMAQU	Male	0	Yes	No
9	0015-UOCOJ	Female	1	No	No
10	0016-QLJIS	Female	0	Yes	Yes
11	0017-DINOC	Male	0	No	No
12	0017-IUDMW	Female	0	Yes	Yes

Figure 13. Connecting successfully

Schema overview

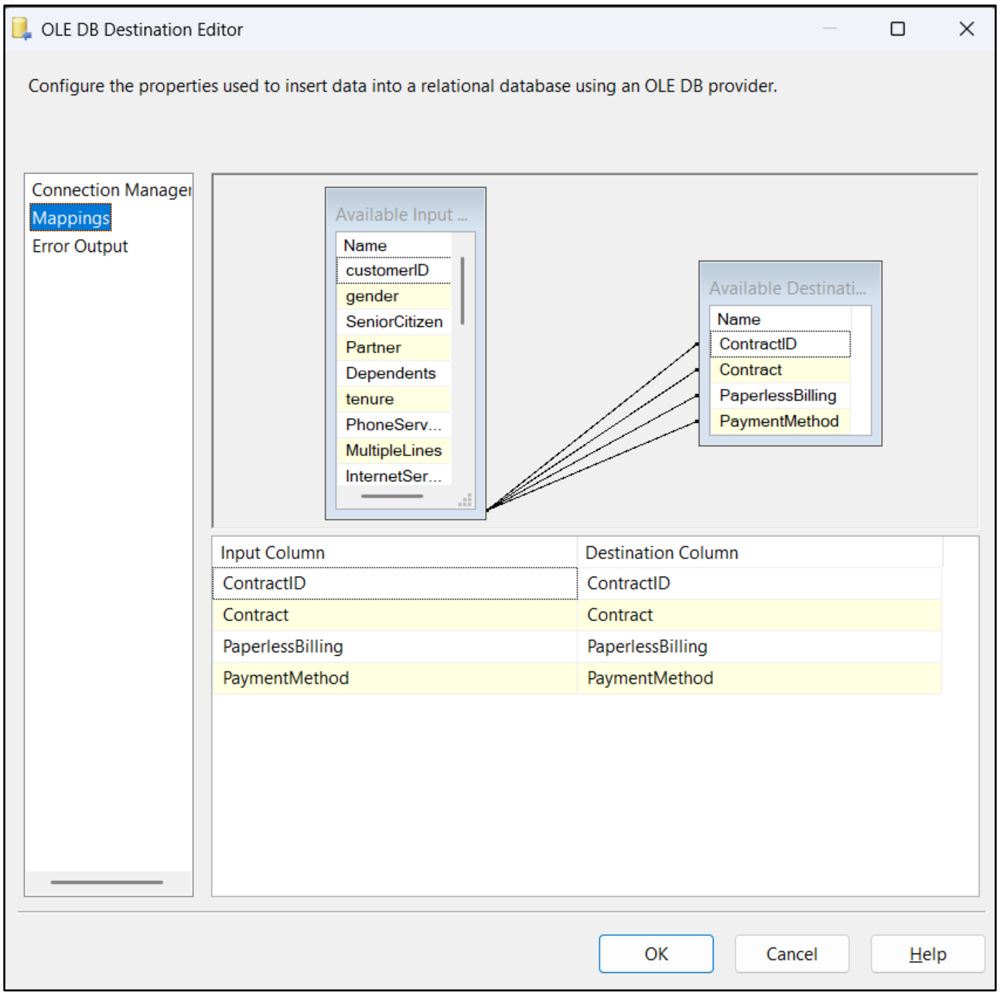
Dim_Customer:

Show detail of customer information (ID, phone service,….)



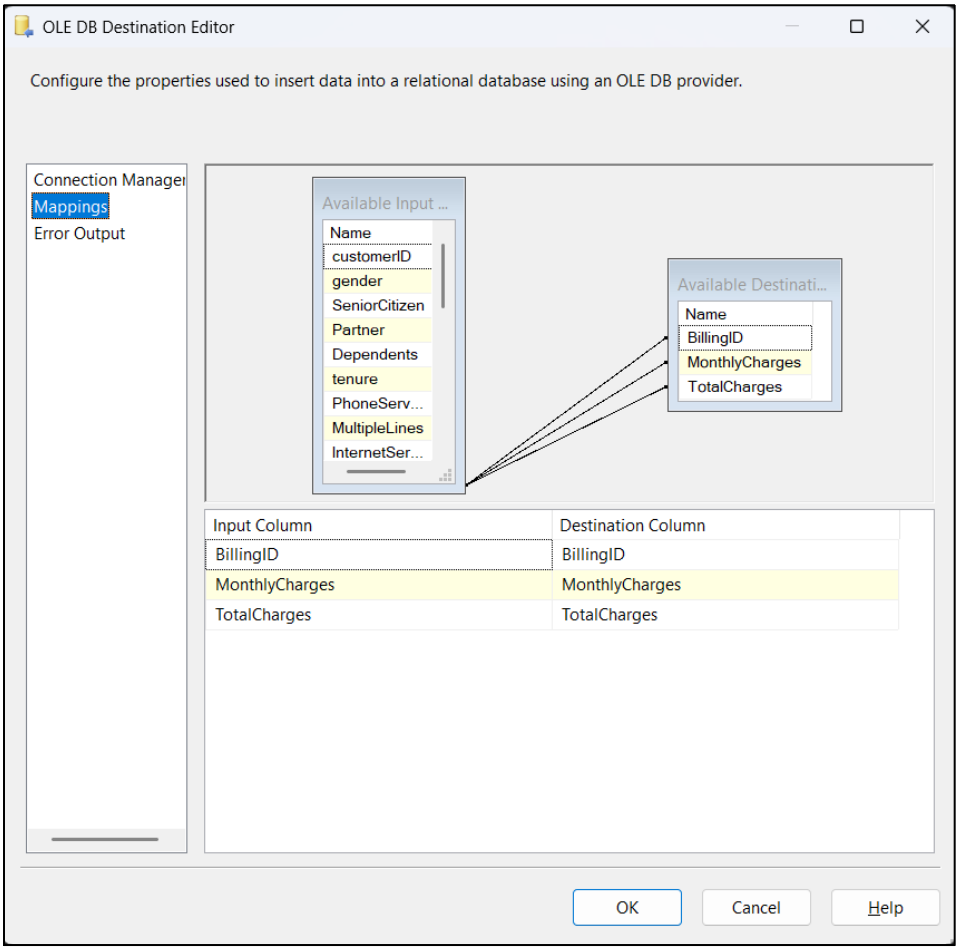
Dim_Contact:

This dim store about contact information



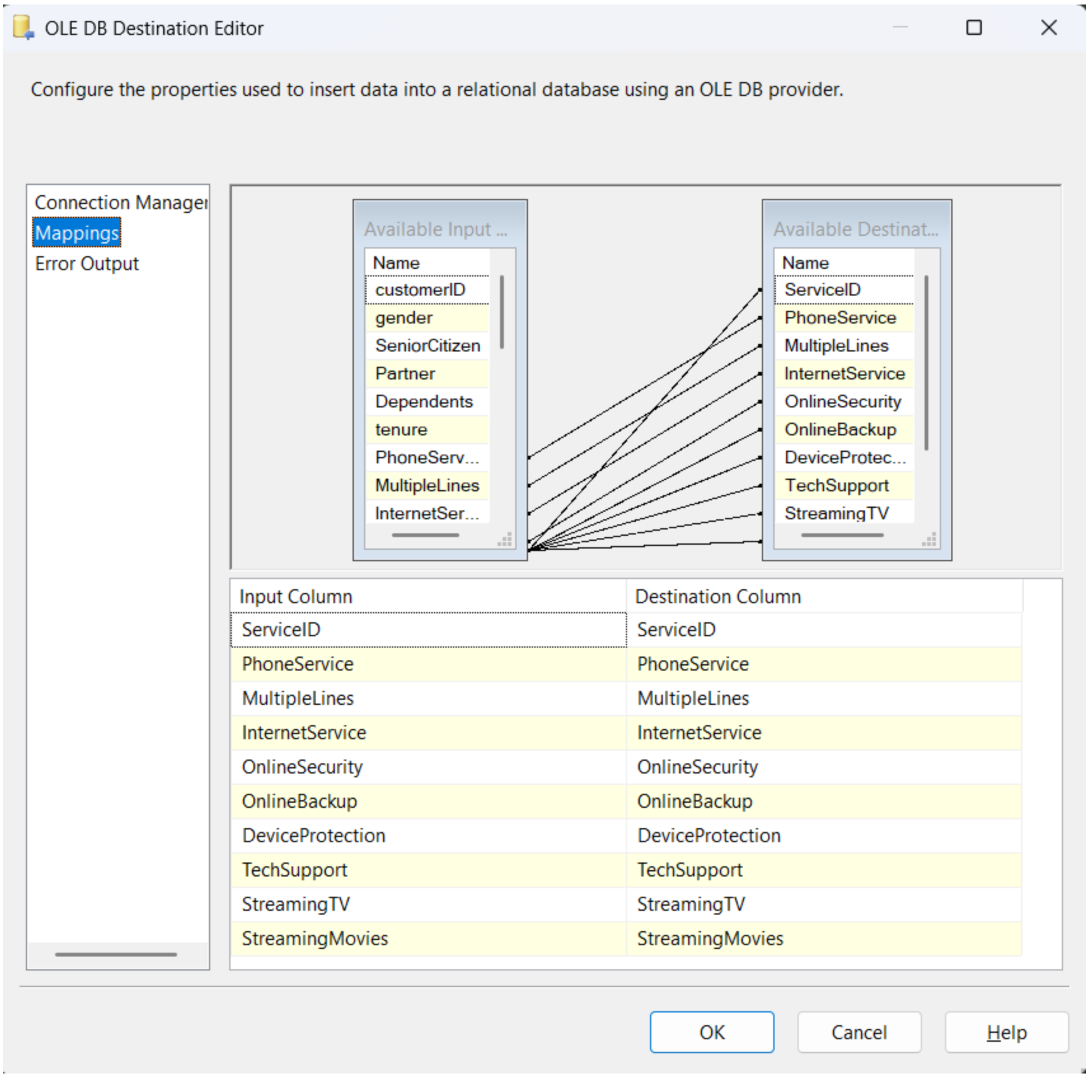
Dim_Billing

Show the detail of billing information



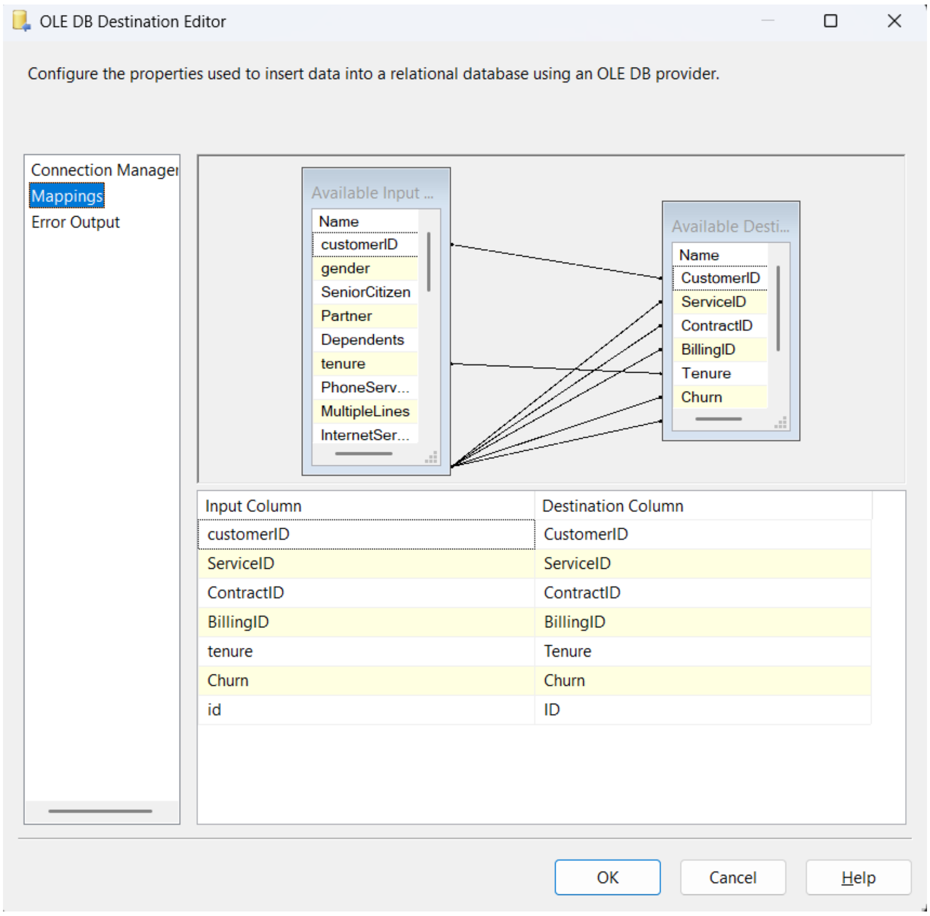
Dim_Service

Show the information about service detail (ServiceId, phoneService,….)



Fact

This fact table is designed to store customer churn data by mapping input columns such as customerID, ServiceID, ContractID, BillingID, tenure, and Churn..



Chapter 2: Analysis and Reporting Process

2.1 Process of building SSAS

First, we create a data source:

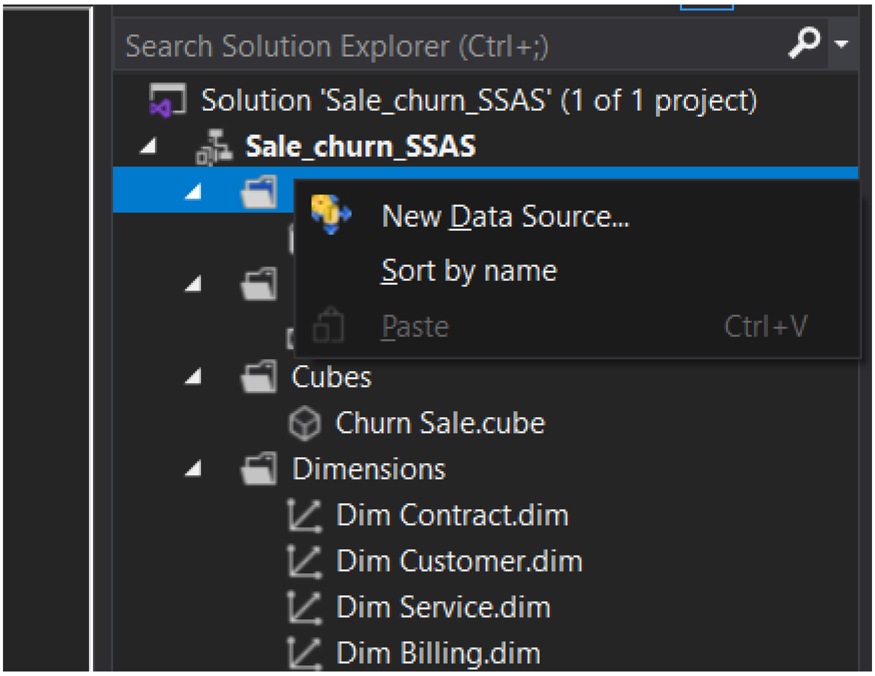


Figure 14. Choosing database

Then with the source view

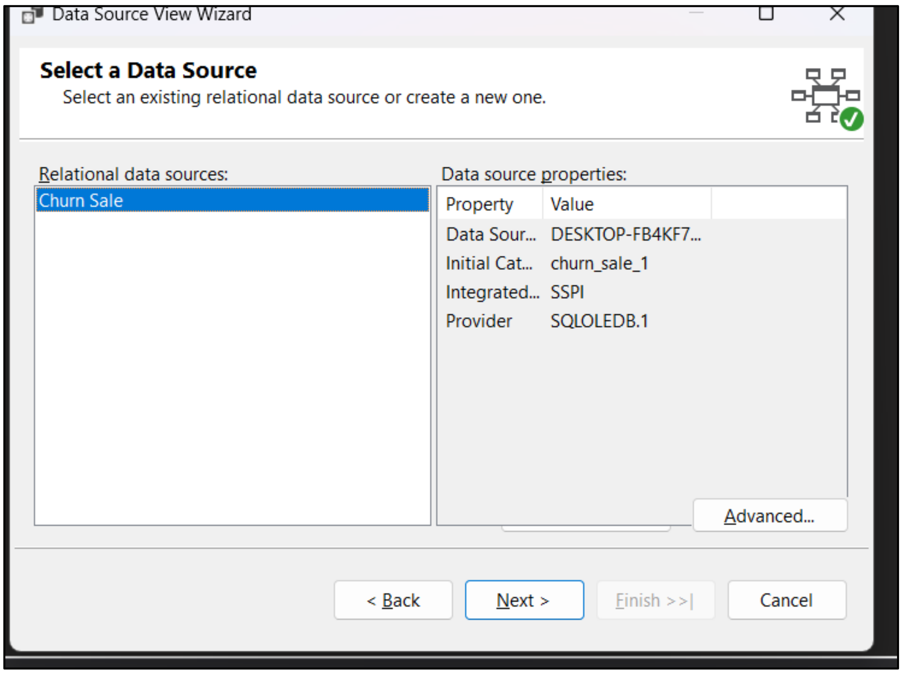


Figure 14. Choosing existing data source

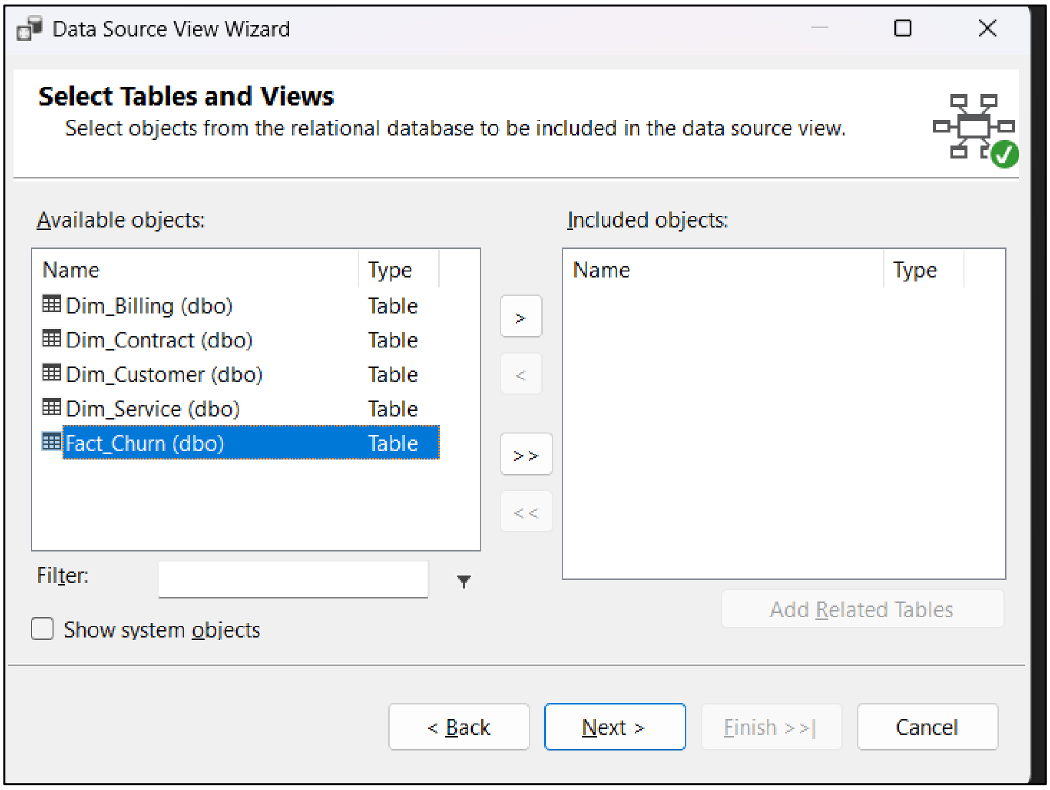


Figure 15. Choosing Fact_churn table

Select the Fact table the click the "Add Related Tables" and press Finish.

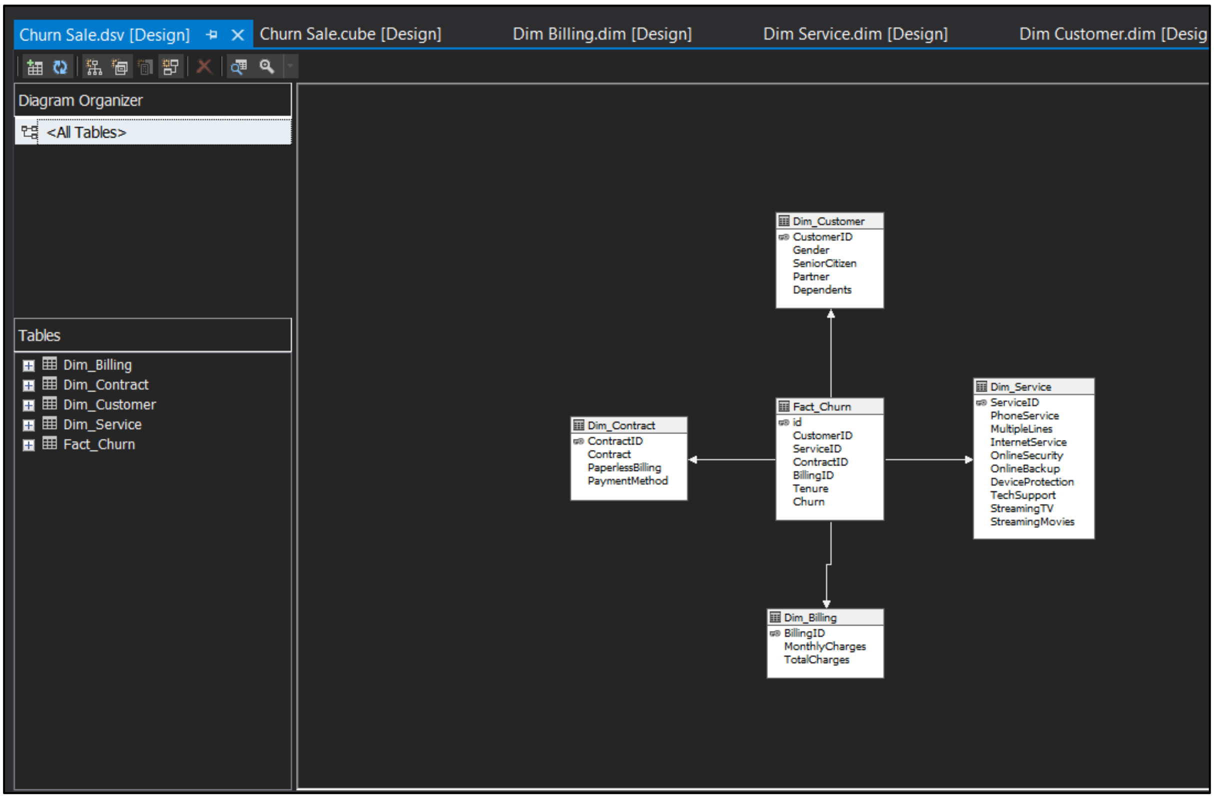


Figure 15. Displaying cube

Now we have a cube with 4 dimensions and 1 fact

Overview:

The data warehouse is designed using a **star schema** structure, with the central **Fact_Churn** table connected to four-dimension tables: **Dim_Customer**, **Dim_Contract**, **Dim_Service**, and **Dim_Billing**.

- The **Fact_Churn** table stores key churn-related metrics, such as customer tenure and churn status.
- Dimension tables provide descriptive attributes for customers, contracts, services, and billing details.
- This structure allows for efficient analysis of customer churn patterns based on demographic, service, and billing factors.

2.2 Analysis on SSAS and BI

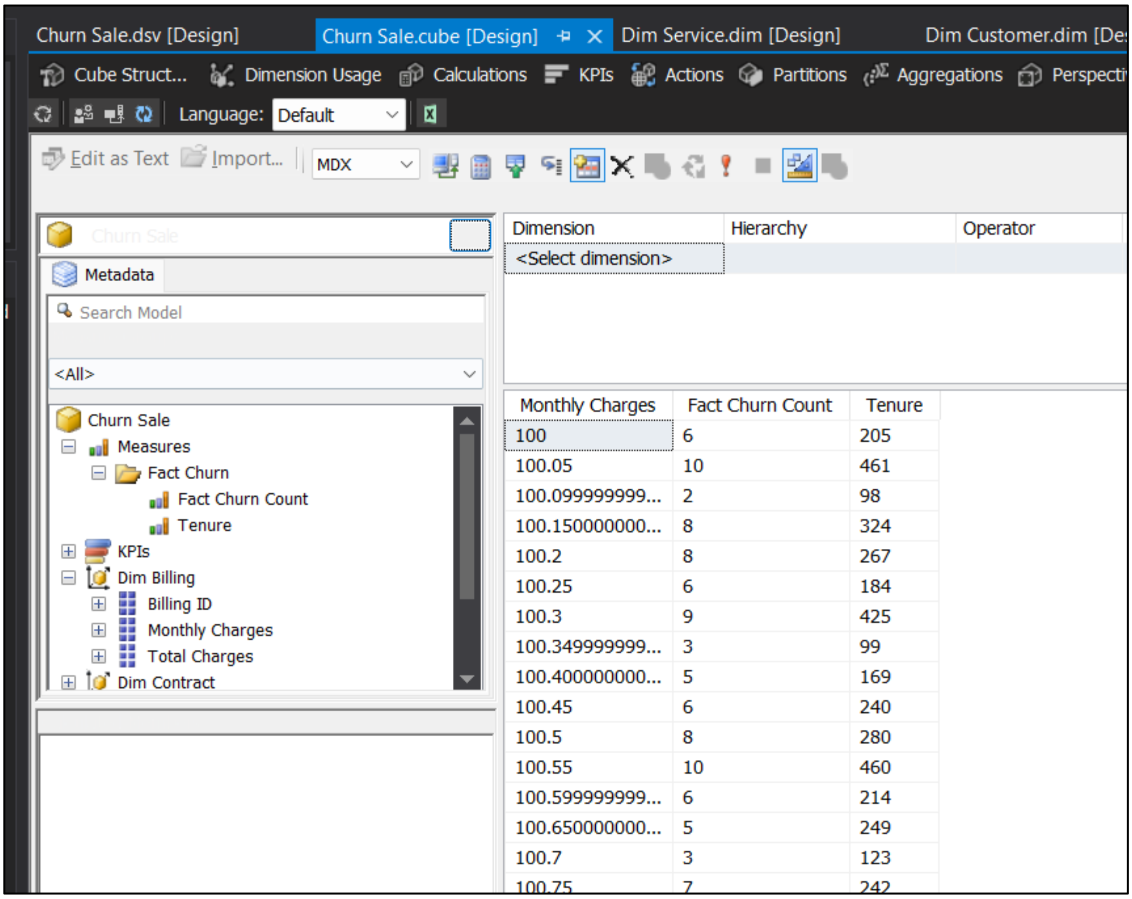


Figure 15. Choosing Fact_churn table

This screenshot shows the sample Churn Sale cube in SQL Server Analysis Services (SSAS). The cube contains key measures from the Fact_Churn table, including Fact Churn Count and Tenure, and is linked with billing-related dimensions such as Monthly Charges and Total Charges.

The displayed result allows users to analyze the relationship between Monthly Charges, customer tenure, and the churn count, supporting data-driven insights for customer retention strategies and so on.

2.3 Analysis (MDX)

1. Roll-up: Customer Churn Analysis by Internet Service Type

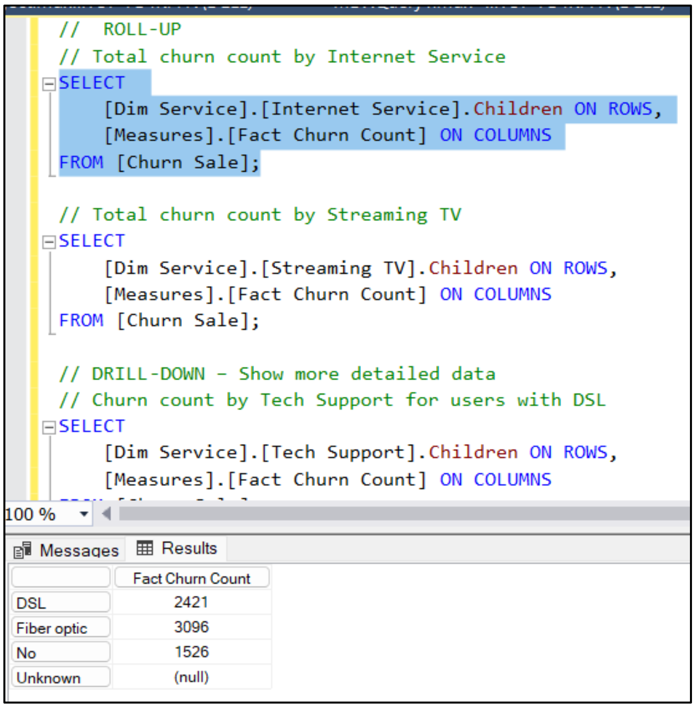


Figure 15. Choosing Fact_churn table

Rows: [Dim Service].[Internet Service].Children → Types of Internet Services (DSL, Fiber optic, No internet service, Unknown).

Columns: [Measures].[Fact Churn Count] → The number of customers who churned.

Data Source: [Churn Sale] cube.

Customers with Fiber Optic service have the highest churn count (3,096), followed by DSL (2,421). Those with no internet service churn less, possibly due to lower expectations or service interactions.

2. Slice: Customer Churn Distribution by Streaming TV Subscription Status

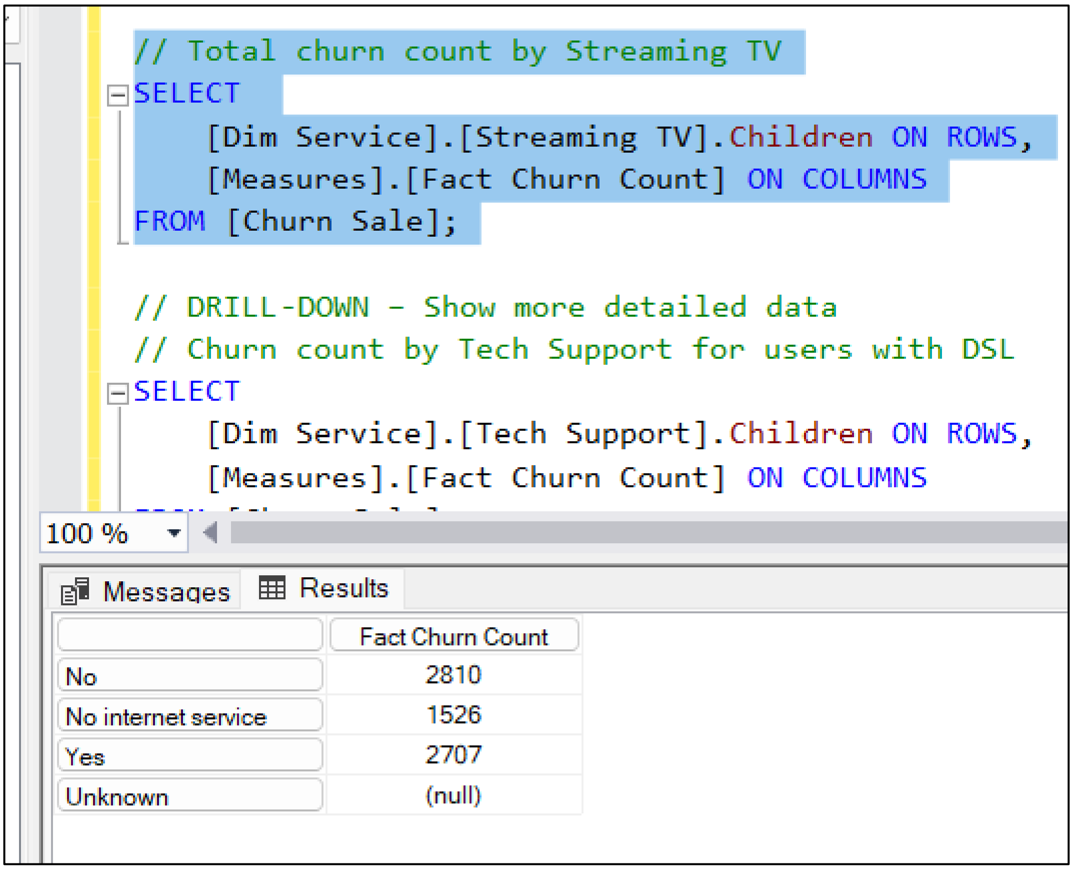


Figure 16. Querying Total churn_sale

Rows: [Dim Service].[Streaming TV].Children → Whether customers use streaming TV or not.

Columns: [Measures].[Fact Churn Count] → Number of churned customers.

Data Source: [Churn Sale] cube.

Customers who do not use streaming TV slightly churn more than those who do. This suggests streaming TV might contribute to retention, but the difference is not very large.

3. Drill-Down: Churn Distribution by Tech Support (DSL Users Only)

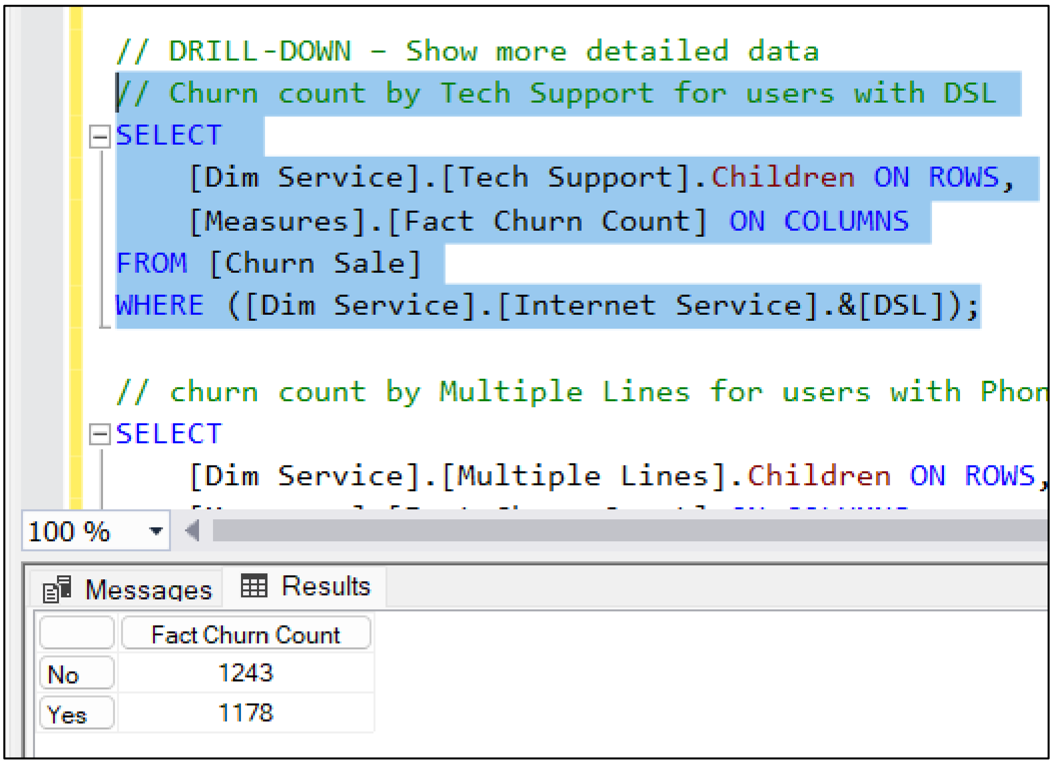


Figure 17. Querying Total churn_sale

Rows: "Yes" or "No" for Tech Support.

Columns: Number of customers churned (Fact Churn Count).

Filter (WHERE): Only includes users with DSL Internet service.

Analyze the churn behavior of customers using DSL Internet service, segmented by whether they have Tech Support or not.

4. Churn by Multiple Line Usage Among Customers with Phone Service

```
// churn count by Multiple Lines for users with Phone Service = Yes
SELECT
    [Dim Service].[Multiple Lines].Children ON ROWS,
    [Measures].[Fact Churn Count] ON COLUMNS
FROM [Churn Sale]
WHERE ([Dim Service].[Phone Service].&[Yes]);

// SLICE - Filter by one dimension
// Churned customers (Churn = Yes) who use Online Backup
SELECT
    [Measures].[Fact Churn Count] ON COLUMNS
FROM [Churn Sale]
WHERE (
    [Dim Service].[Online Backup].&[Yes],
    [Fact Churn].[Churn].&[Yes]
```

100 %

Messages | Results

	Fact Churn Count
No	3390
Yes	2971

Figure 18. Querying Total churn_sale

Rows: "Yes" or "No" for Multiple Lines (for users with Phone Service = Yes).

Columns: Number of customers churned (Fact Churn Count).

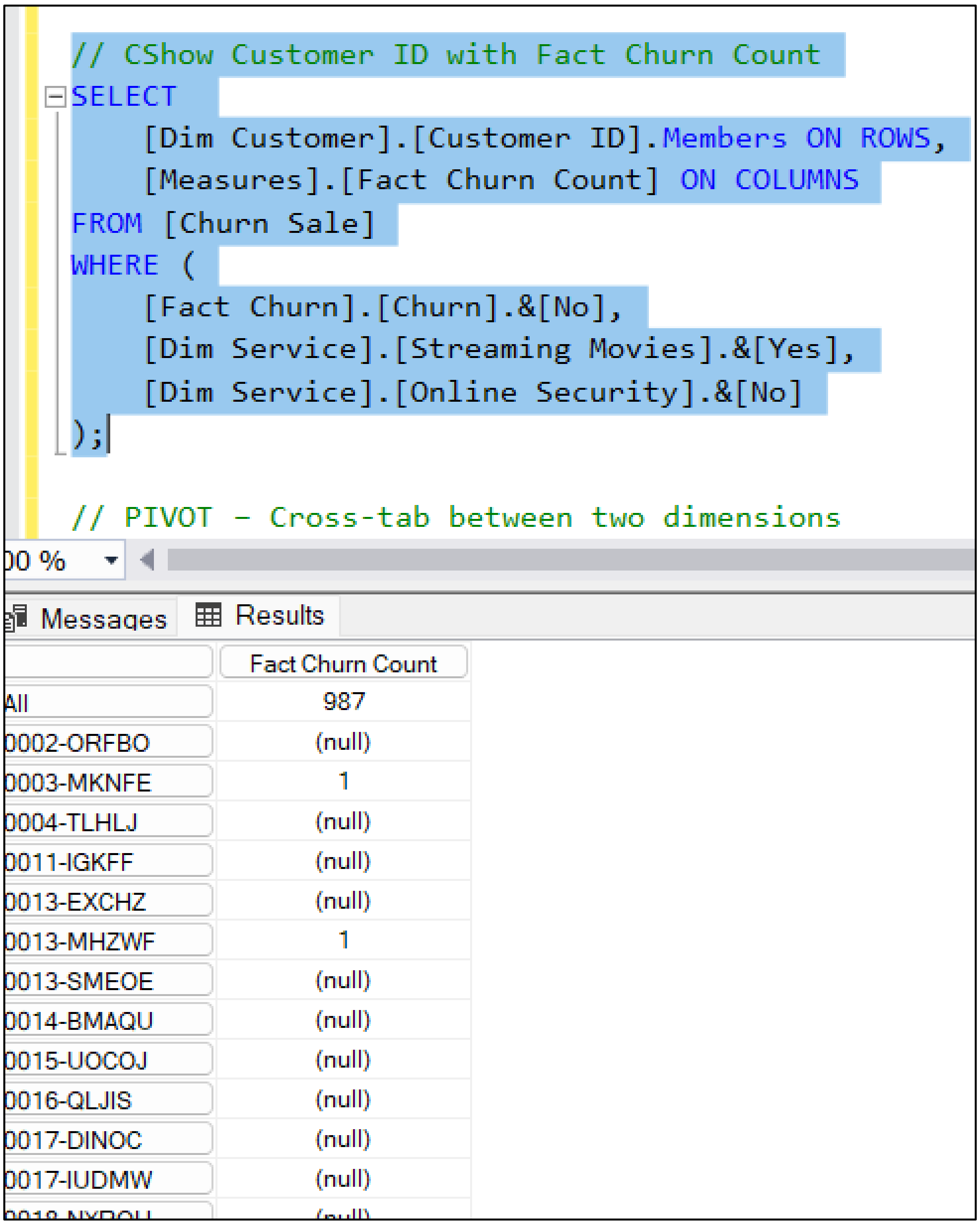
Filter (WHERE): Only includes users with Phone Service = Yes.

Analysis:

Among users with Phone Service, those with Multiple Lines ("Yes") have a specific churn count, while those without ("No") have a different count (exact numbers depend on additional data).

This segmentation suggests that the presence of Multiple Lines may influence churn behavior, potentially indicating higher or lower retention depending on the count.

5. Dice: Non-Churned Customers Who Use Streaming Movies But Not Online Security



```
// CShow Customer ID with Fact Churn Count
SELECT
    [Dim Customer].[Customer ID].Members ON ROWS,
    [Measures].[Fact Churn Count] ON COLUMNS
FROM [Churn Sale]
WHERE (
    [Fact Churn].[Churn].&[No],
    [Dim Service].[Streaming Movies].&[Yes],
    [Dim Service].[Online Security].&[No]
);

// PIVOT - Cross-tab between two dimensions
```

	Fact Churn Count
All	987
0002-ORFBO	(null)
0003-MKNFE	1
0004-TLHLJ	(null)
0011-IGKFF	(null)
0013-EXCHZ	(null)
0013-MHZWF	1
0013-SMEOE	(null)
0014-BMAQU	(null)
0015-UOCOJ	(null)
0016-QLJIS	(null)
0017-DINOC	(null)
0017-IUDMW	(null)

Figure 19. Querying Total churn_sale

Rows: Customer ID.

Columns: Number of customers churned (Fact Churn Count).

Filter (WHERE): Only includes users with Streaming Movies = Yes and Online Security = No

Analysis:

Specific customers (e.g., 0002-ORFBO with 987 churns) show high churn counts, while others (e.g., 0003-MKNFE with 1) have minimal or no churn.

This suggests variability in churn behavior among customers with Streaming Movies but without Online Security, possibly indicating individual factors driving churn.

6. Non-Churned Customers with Streaming Movies Enabled and Online Security Disabled

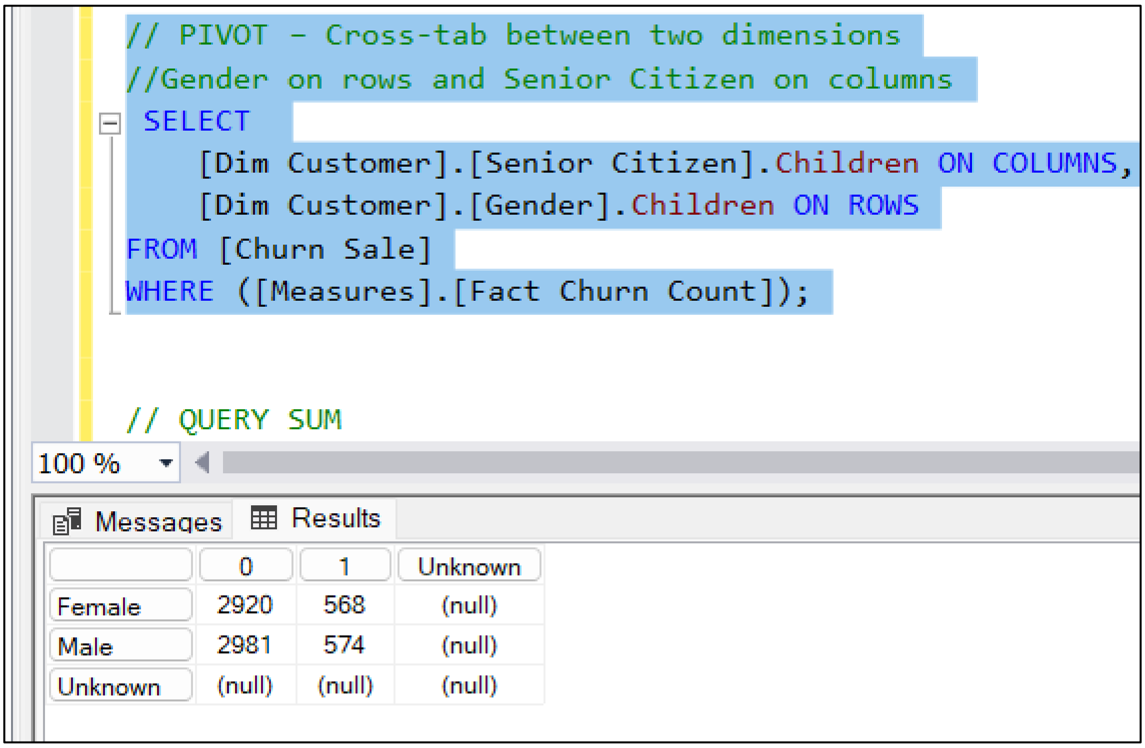


Figure 20. Querying Total churn_sale

Rows: Gender

Columns: Senior Citizen (0 or 1).

Filter (WHERE): No specific filter beyond Fact Churn Count

Analysis:

Females show 2920 non-senior citizens (0) and 568 senior citizens (1), while males show 2981 and 574 respectively.

Churn counts are similar across genders and senior status, suggesting that gender and senior citizenship may not strongly influence churn behavior.

7. Sum: Total Tenure by Internet Service Type

```
// QUERY SUM
SELECT
    [Dim Service].[Internet Service].Children ON ROWS,
    [Measures].[Tenure] ON COLUMNS
FROM [Churn Sale];



// NON EMPTY display gender atleast 1 customer churn
SELECT
    NON EMPTY [Dim Customer].[Gender].Members ON ROWS,
    NON EMPTY [Measures].[Fact Churn Count] ON COLUMNS
```

100 %

Messages | Results

	Tenure
DSL	79461
Fiber optic	101914
No	46615
Unknown	(null)

Figure 21. Querying Total churn_sale

Rows: Internet Service type.

Columns: Tenure.

Filter (WHERE): No specific filter.

Analysis:

DSL users have a tenure of 79461, Fiber optic users 101914, and No internet service users 46615.

Higher tenure values (especially for Fiber optic) suggest longer customer retention, while lower values (No internet) may indicate shorter engagement, though churn data is needed for confirmation.

8. Top 5 Internet Service Types with the Highest Customer Churn

```
// TOP 5 INTERNET SERVICE THAT MAKE CUSTOMERS CHURN
SELECT
    [Measures].[Fact Churn Count] ON COLUMNS,
    TOPCOUNT(
        [Dim Service].[Internet Service].MEMBERS,
        5,
        [Measures].[Fact Churn Count]
    ) ON ROWS
FROM [Churn Sale];
```

100 %

Messages Results

	Fact Churn Count
All	7043
Fiber optic	3096
DSL	2421
No	1526
Unknown	(null)

Figure 22. Querying Total churn_sale

Rows: Internet Service type.

Columns: Number of customers churned (Fact Churn Count)

Filter (WHERE): No specific filter.

Analysis:

Fiber optic has the highest churn count (3096), followed by DSL (2421) and No internet (1526).

This indicates that Fiber optic users are more likely to churn, possibly due to service issues or other factors, compared to DSL or No internet users.

9. Children: Comparison of Total Tenure Between Senior and Non-Senior Customers (1 is non senior and 0 is senior)

```
-- 1 is non senior and 0 is senoir citizen
-- This suggests that non-senior customers tend to stay with the service longer than senior customers.
SELECT
    [Dim Customer].[Senior Citizen].Children ON ROWS,
    [Measures].[Tenure] ON COLUMNS
FROM
    [Churn Sale]
```

100 %

Messages Results

	Tenure
0	189966
1	38024
Unknown	(null)

Rows: Senior Citizen (0 or 1).

Columns: Tenure.

Filter (WHERE): No specific filter.

Analysis:

Non-senior citizens (0) have a tenure of 18996, while senior citizens (1) have 38024.

This suggests that non-senior customers tend to stay longer, potentially indicating better retention among younger users.

10. Total Revenue by Internet Service Type

```
-- Which Internet service type generates the highest revenue
SELECT
    [Dim Service].[Internet Service].Children ON ROWS,
    [Dim Billing].[Total Charges] ON COLUMNS
FROM
    [Churn Sale]
```

100 %

Messages | Results

	All
DSL	79461
Fiber optic	101914
No	46615
Unknown	(null)

Figure 23. Querying Total churn_sale

Rows: Internet Service type.

Columns: Total Charges.

Filter (WHERE): No specific filter.

Analysis:

Fiber optic generates the highest revenue (101914), followed by DSL (79461) and No internet (46615).

This highlights Fiber optic as the most profitable service type, though high revenue may correlate with higher churn

2.4 Pivot table and Excel

1 Roll-up: Customer Churn Analysis by Internet Service Type

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
DSL	1962	459	2421
Fiber optic	1799	1297	3096
No	1413	113	1526
Grand Total	**5174**	**1869**	**7043**

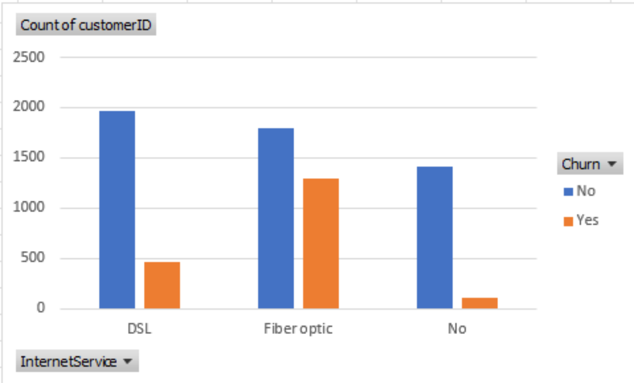


Figure 23. Querying Total churn_sale

2 Slice: Customer Churn Distribution by Streaming TV Subscription Status

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
No	1868	942	2810
No internet service	1413	113	1526
Yes	1893	814	2707
Grand Total	**5174**	**1869**	**7043**

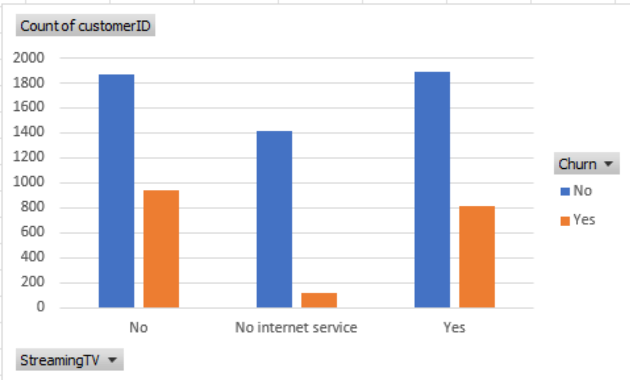


Figure 24. Querying Total churn_sale

3 Slice: Customer Churn Distribution by Streaming TV Subscription Status

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
No	2027	1446	3473
No internet service	1413	113	1526
Yes	1734	310	2044
Grand Total	**5174**	**1869**	**7043**

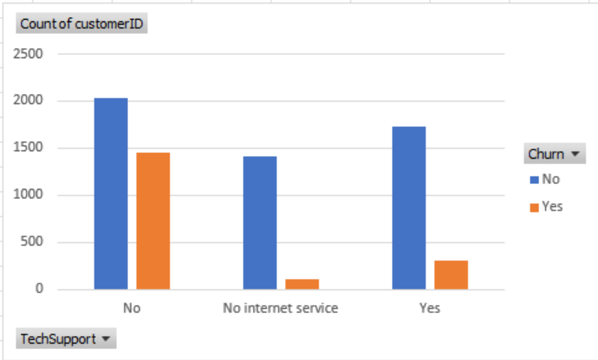


Figure 25. Querying Total churn_sale

4 Churn by Multiple Line Usage Among Customers with Phone Service

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
No	512	170	682
Yes	4662	1699	6361
Grand Total	**5174**	**1869**	**7043**

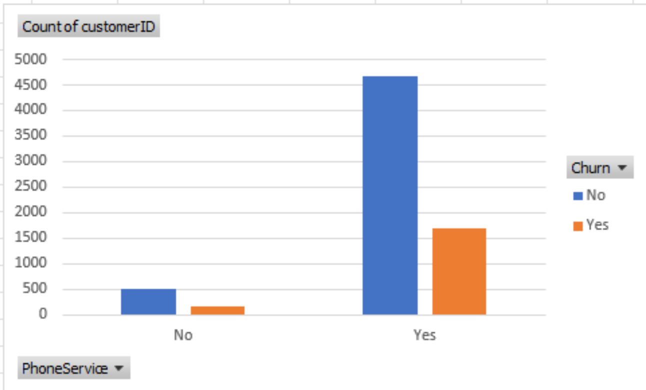


Figure 26. Querying Total churn_sale

5 Customer Churn Distribution by Contract Type

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
Month-to-month	2220	1655	3875
One year	1307	166	1473
Two year	1647	48	1695
Grand Total	**5174**	**1869**	**7043**

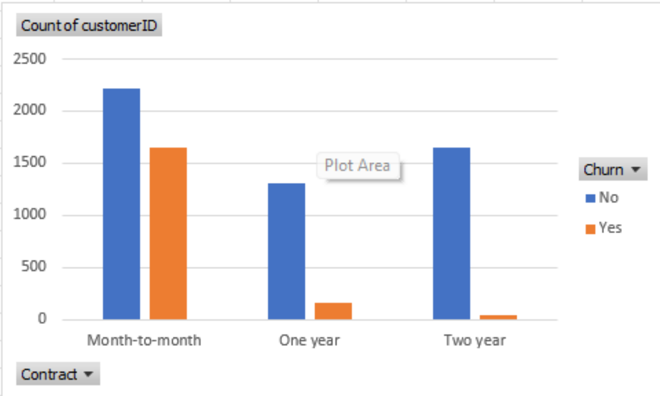


Figure 27. Churn Distribution

6 Non-Churned Customers with Streaming Movies Enabled and Online Security Disabled

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
Female	**2549**	**939**	**3488**
0	2221	699	2920
1	328	240	568
Male	**2625**	**930**	**3555**
0	2287	694	2981
1	338	236	574
Grand Total	**5174**	**1869**	**7043**

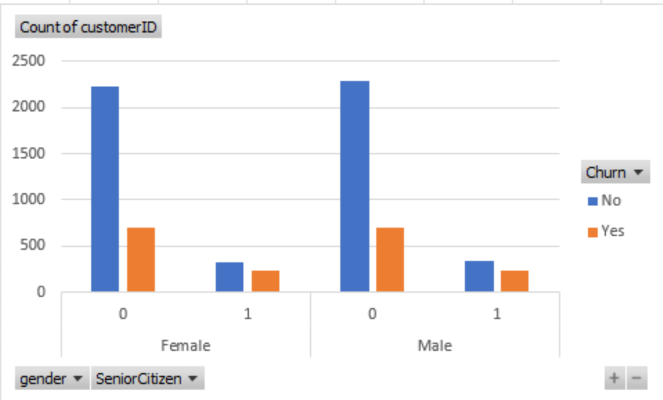


Figure 28. Non_churned Customer Streaming movies

7 Total Customer Tenure by Internet Service Type

Row Labels	Sum of tenure
DSL	79461
Fiber optic	101914
No	46615
Grand Total	**227990**

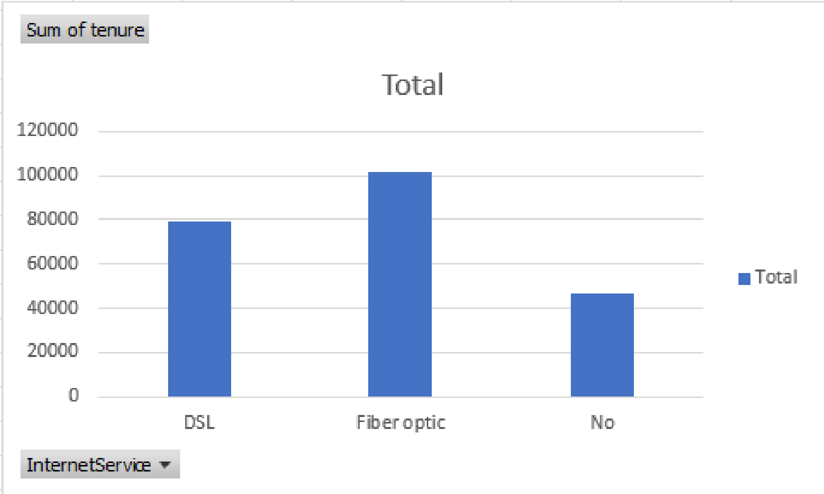


Figure 29. Total Customer Tenure by Internet Service Type

8 Churn Analysis Across Internet Service Categories

Count of customerID	Column Labels		
Row Labels	**No**	**Yes**	**Grand Total**
DSL	1962	459	2421
Fiber optic	1799	1297	3096
No	1413	113	1526
Grand Total	**5174**	**1869**	**7043**

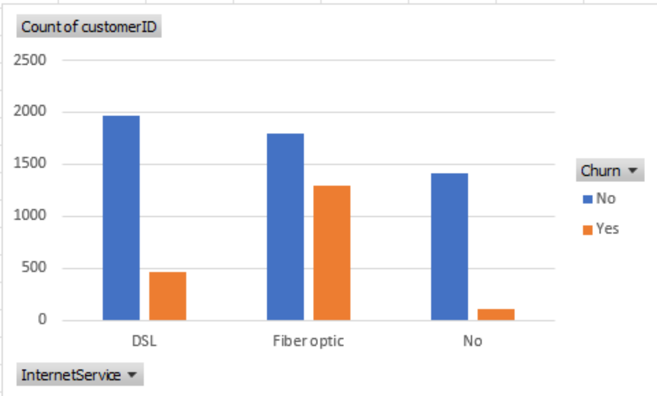


Figure 29. Customer Churn Distribution by Internet Service Type

9 Customer Churn by Senior Citizen Status

Count of customerID	Column Labels		
Row Labels	No	Yes	Grand Total
0	4508	1393	5901
1	666	476	1142
Grand Total	5174	1869	7043

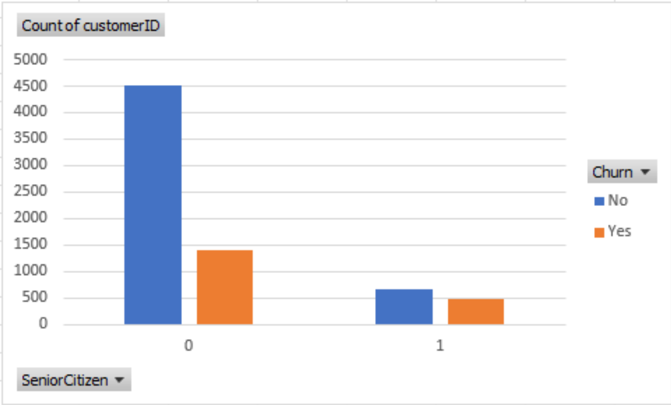


Figure 30. Churn Comparison Between Senior and Non-Senior Customers

The chart shows that **non-seniors (0)** have a higher customer base and churn volume, but **seniors (1)** have a **higher churn rate** proportionally (476 out of 1,142 ≈ 41.7%).

10 Total Revenue by Internet Service Type

Row Labels	Sum of TotalCharges
DSL	5121410.85
Fiber optic	9923622.95
No	1011134.9
Grand Total	**16056168.7**

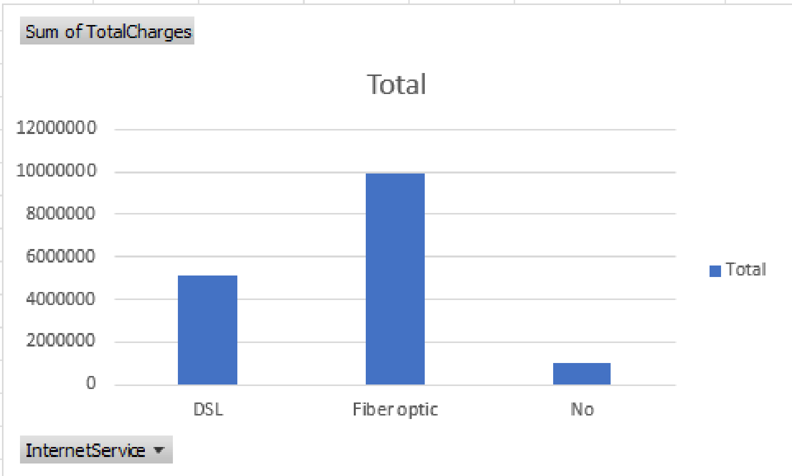


Figure 31. Total Charges Collected by Internet Service Type

Power BI

1 Customer Churn Breakdown by Internet Service Type

InternetService	No	Yes	Total
DSL	1962	459	**2421**
Fiber optic	1799	1297	**3096**
No	1413	113	**1526**
Total	**5174**	**1869**	**7043**

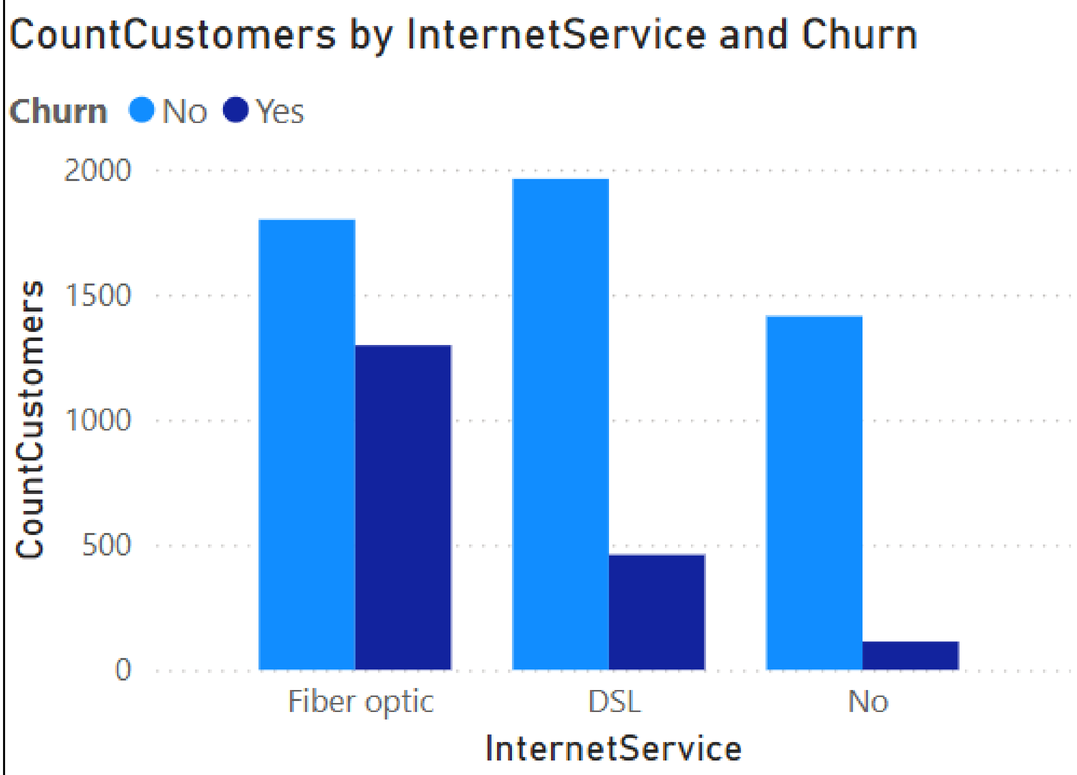


Figure 32. Number of Churned and Retained Customers by Internet Service

2 Total Revenue by Internet Service Type

StreamingTV	No	Yes	Total
No	1868	942	**2810**
No internet service	1413	113	**1526**
Yes	1893	814	**2707**
Total	**5174**	**1869**	**7043**

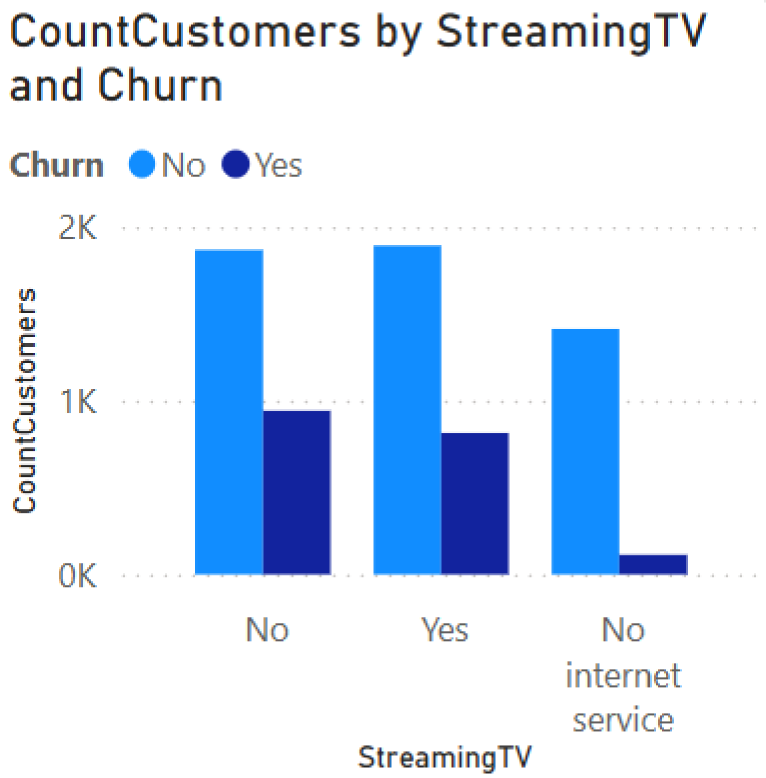


Figure 33. Total Charges Collected by Internet Service Type

3 Customer Churn by Tech Support Availability

TechSupport	No	Yes	**Total**
No	2027	1446	**3473**
No internet service	1413	113	**1526**
Yes	1734	310	**2044**
Total	**5174**	**1869**	**7043**

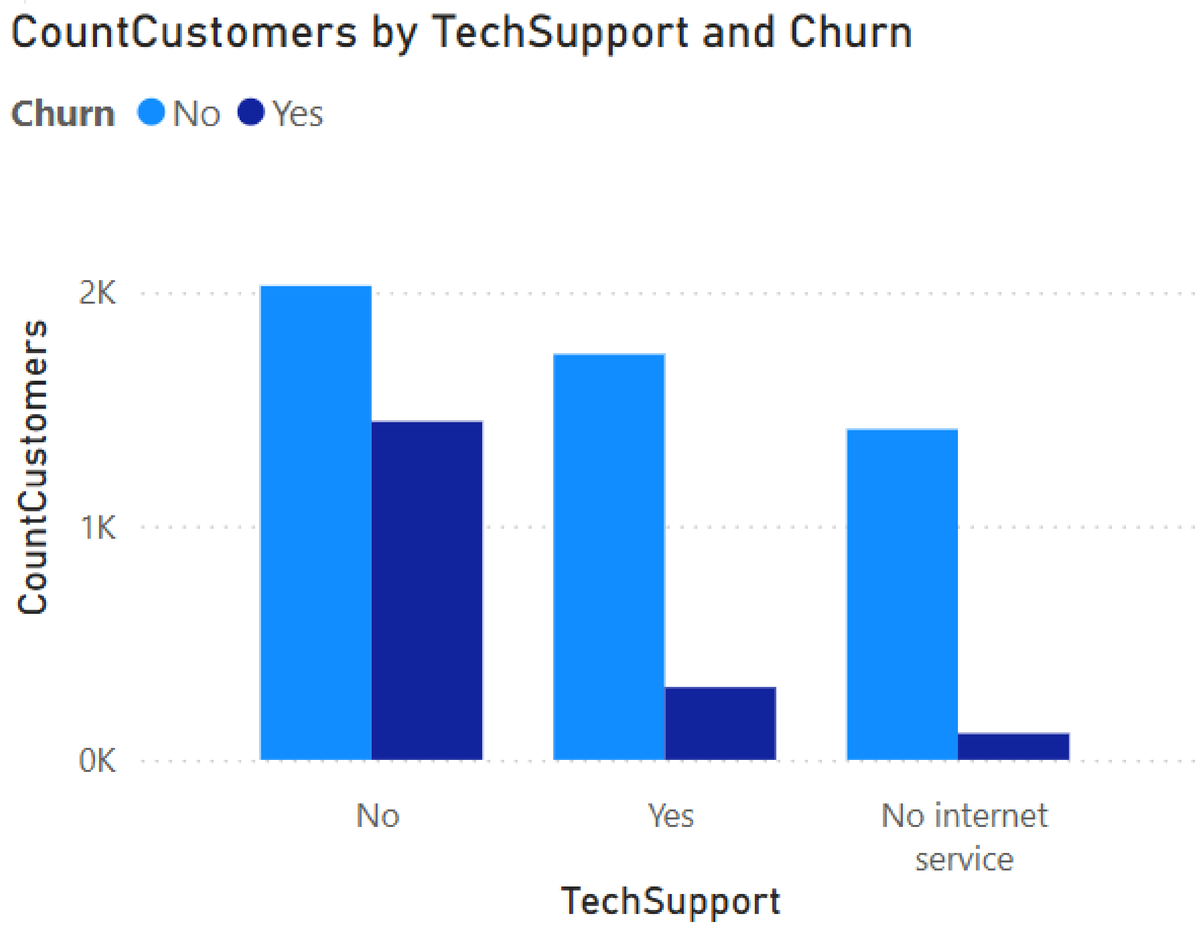


Figure 34. Churn Distribution Based on Access to Tech Support Services

4 Customer Churn by Phone Service Subscription

PhoneService	No	Yes	Total
No	512	170	**682**
Yes	4662	1699	**6361**
Total	**5174**	**1869**	**7043**

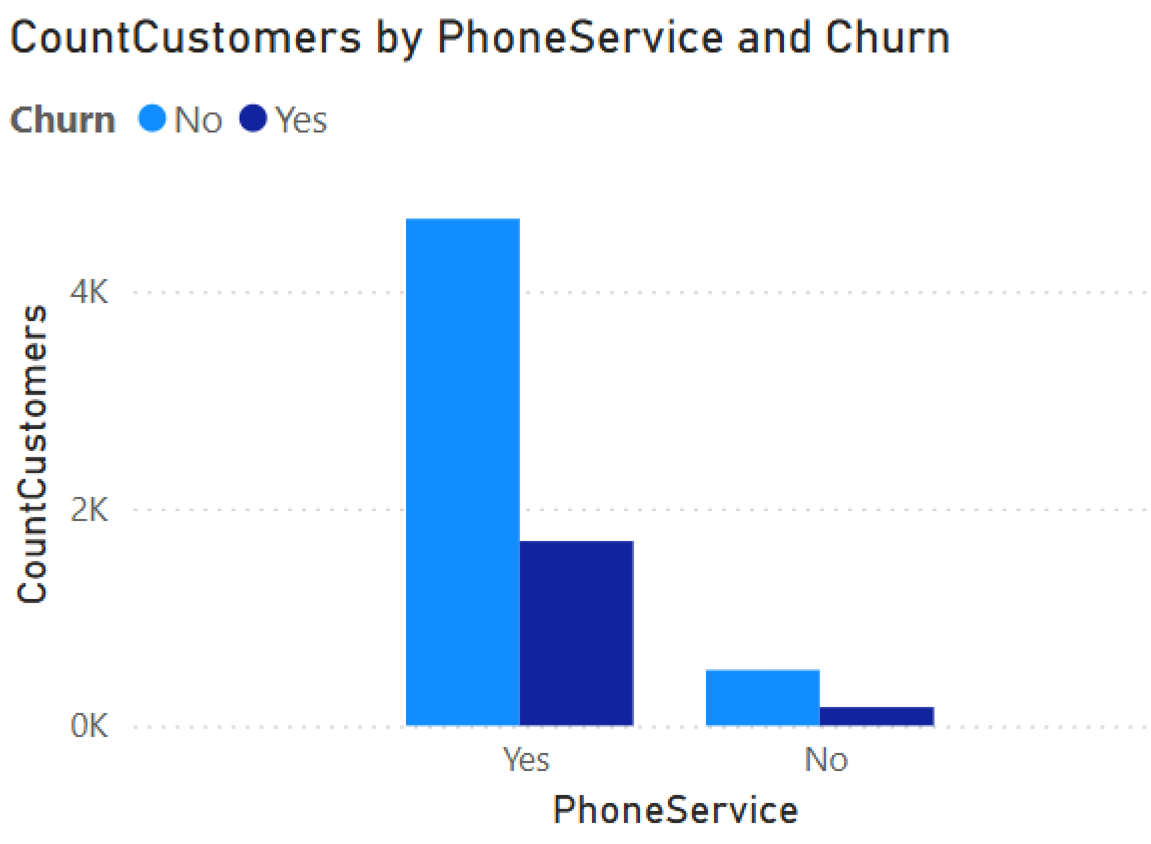


Figure 35. Comparison of Churned and Retained Customers by Phone

5 Customer Churn by Contract Type

Contract	No	Yes	**Total**
Month-to-month	2220	1655	**3875**
One year	1307	166	**1473**
Two year	1647	48	**1695**
Total	**5174**	**1869**	**7043**

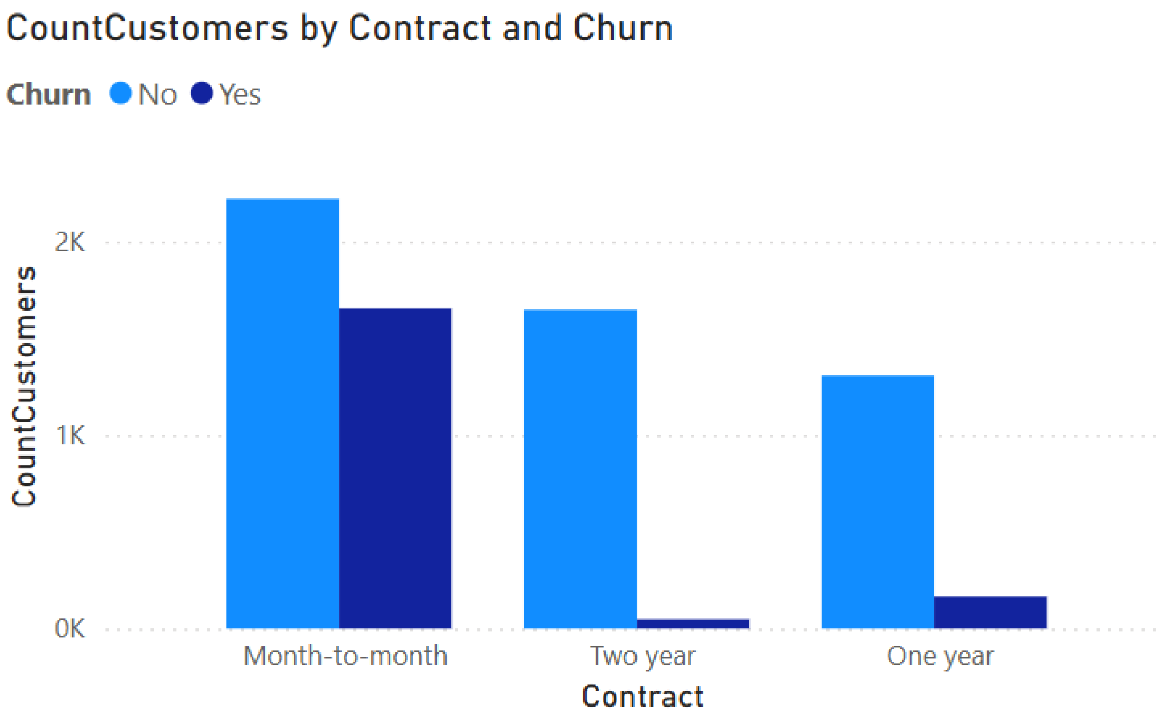


Figure 37. Churn Distribution Across Contract Durations

6 Customer Churn by Gender and Senior Citizen Status

gender	No	Yes	Total
Female	**2549**	**939**	**3488**
0	2221	699	**2920**
1	328	240	**568**
Male	**2625**	**930**	**3555**
0	2287	694	**2981**
1	338	236	**574**
Total	**5174**	**1869**	**7043**

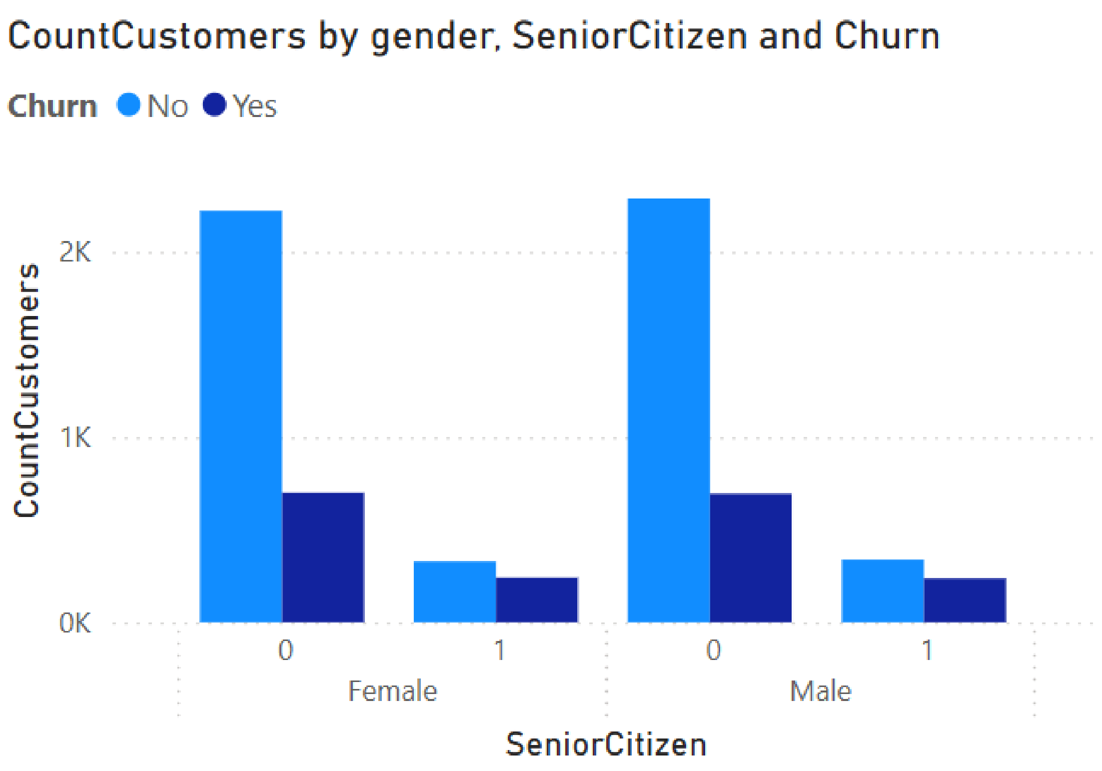


Figure 38. Churn Distribution by Gender Combined with Senior Citizen Status

7 Total Customer Tenure by Internet Service Type

InternetService	Sum of tenure
DSL	79461
Fiber optic	101914
No	46615
Total	**227990**

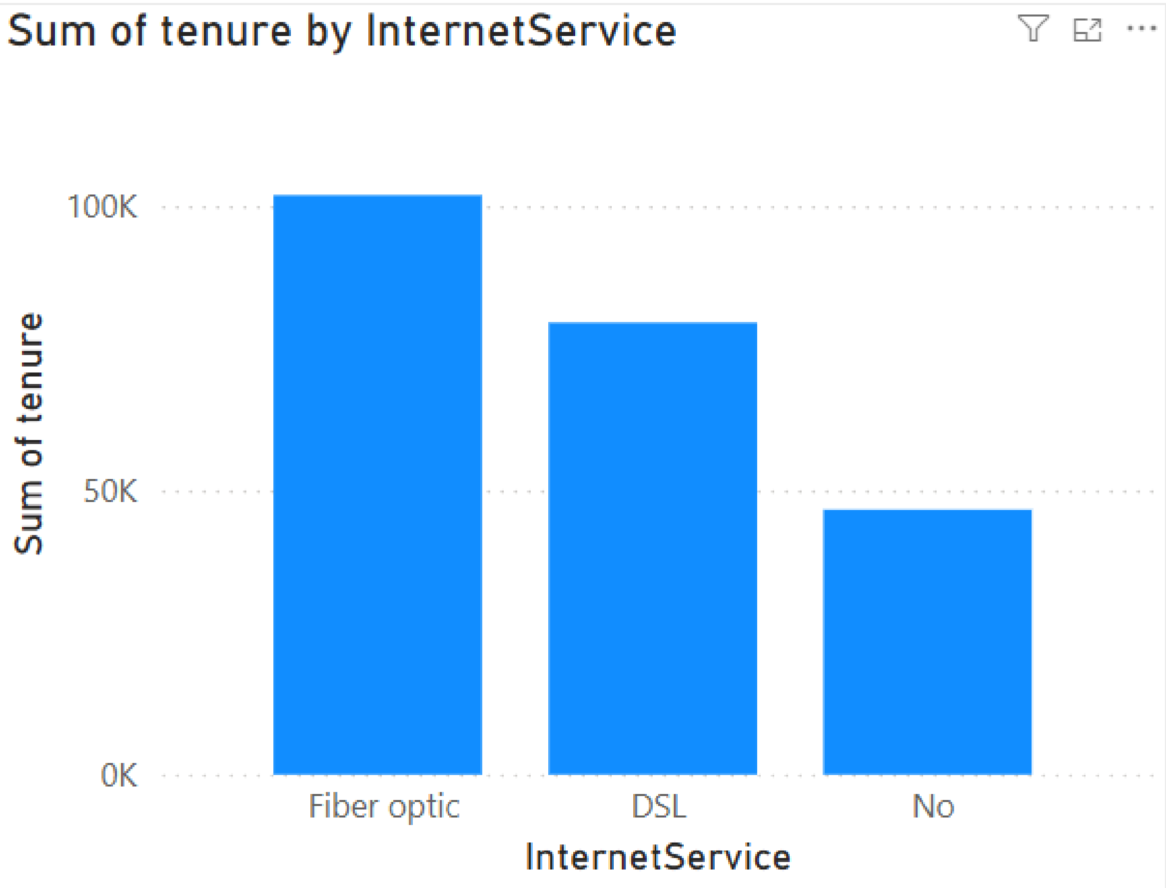


Figure 39. Aggregated Tenure of Customers Based on Internet Service

8 Customer Churn Distribution by Internet Service Type

InternetService	No	Yes	Total
DSL	1962	459	**2421**
Fiber optic	1799	1297	**3096**
No	1413	113	**1526**
Total	**5174**	**1869**	**7043**

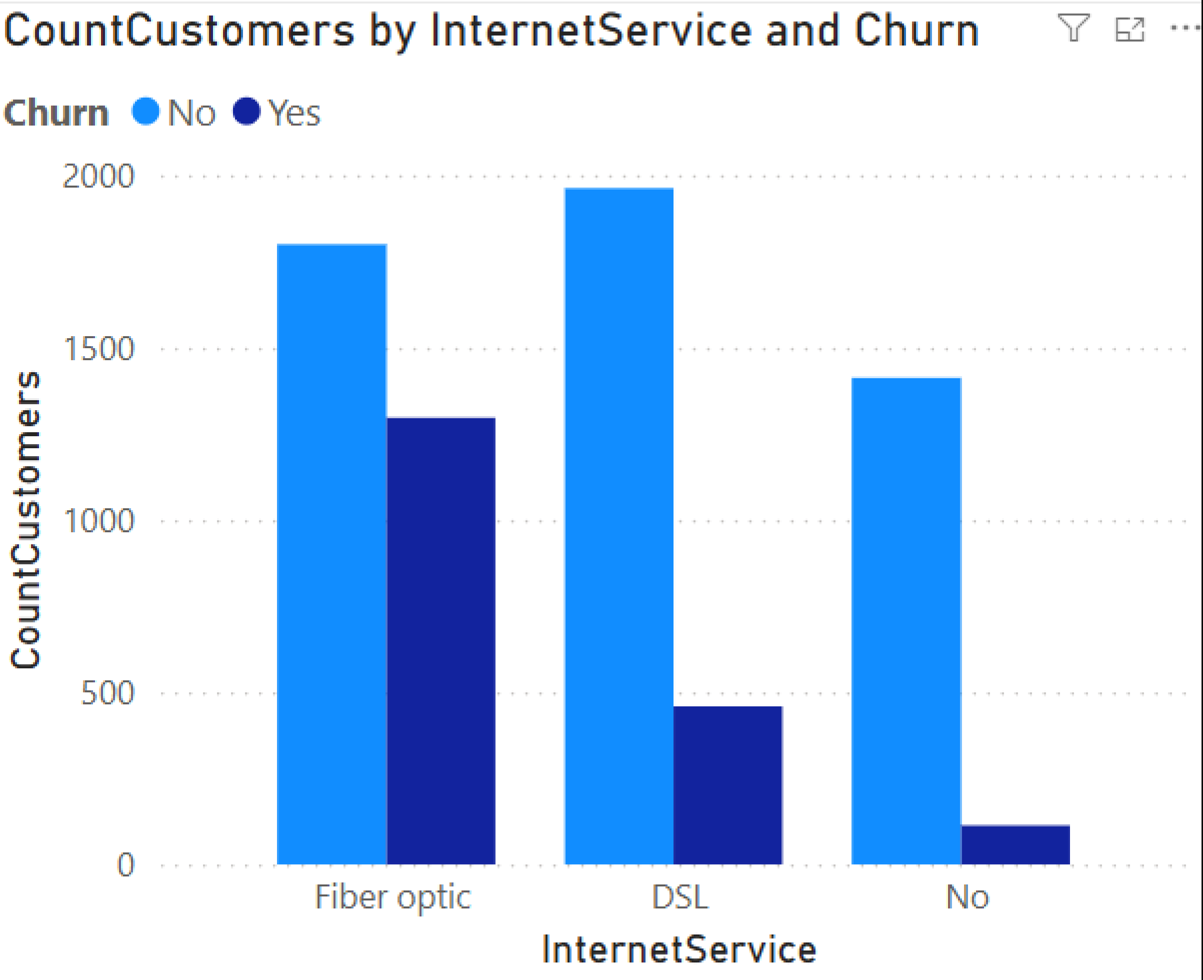


Figure 40. Count of Churned and Retained Customers per Internet Service Category

9 Customer Churn by Senior Citizen Status

SeniorCitizen	No	Yes	Total
0	4508	1393	**5901**
1	666	476	**1142**
Total	**5174**	**1869**	**7043**

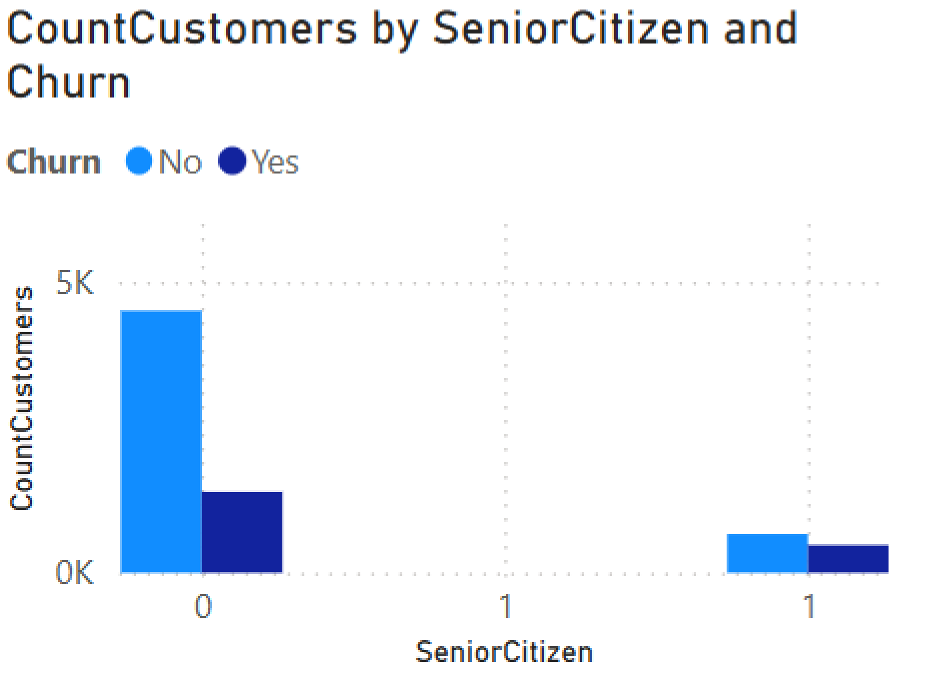


Figure 41. Count of Churned and Retained Customers Based on Senior Citizen Classification

10 Total Revenue by Internet Service Type

InternetService	Sum of TotalCharges
DSL	5,121,410.85
Fiber optic	9,923,622.95
No	1,011,134.90
Total	**16,056,168.70**

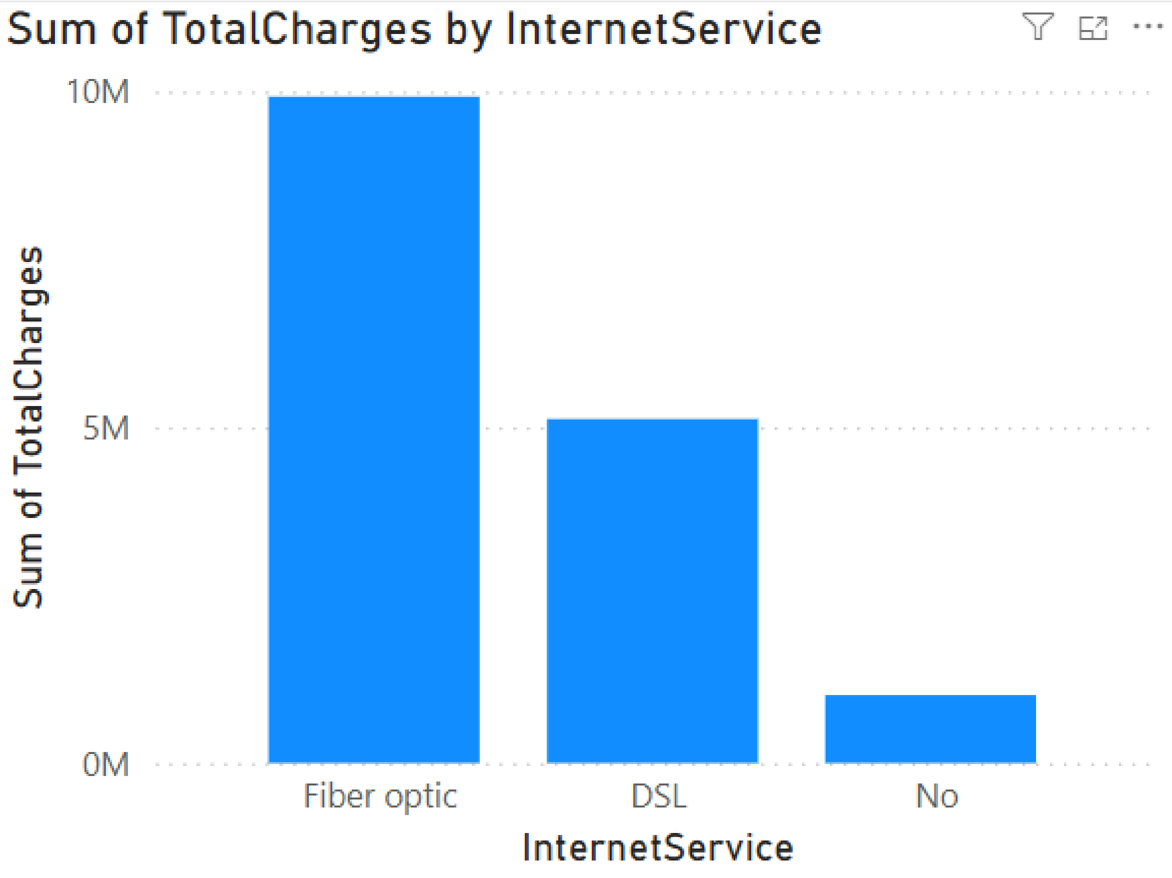


Figure 42. Sum of Total Charges Across Internet Service Categories

Chapter 3: Data mining

3.1 Algorithms and Deep learning

Logistic Regression

Description: A linear classification algorithm that predicts the probability of a binary target variable (e.g., Churn = Yes/No) using the sigmoid function. Suitable for problems with a linear relationship between features and the outcome.

Gradient Boosting

Description: An ensemble-based machine learning algorithm that builds decision trees sequentially, where each tree corrects the errors of the previous one by optimizing the loss function using gradient descent.

LightGBM

Description: An optimized variant of Gradient Boosting that uses a histogram-based tree structure and a leaf-wise approach (focusing on developing the leaf node with the largest loss). Developed by Microsoft, it is highly efficient for large datasets.

3.2 Results

Initial influencing factor

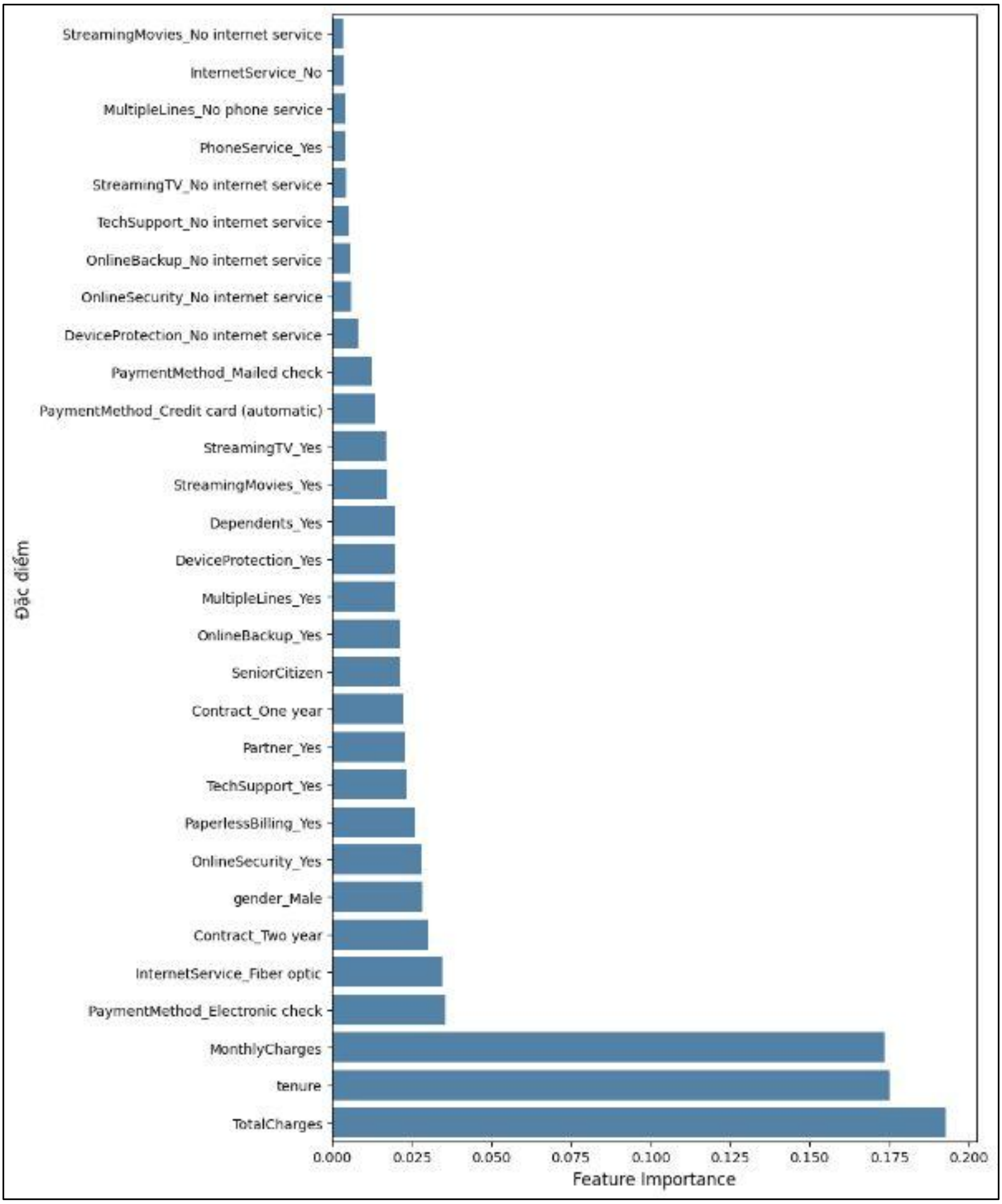


Figure 43. Ranked Feature Importance for Churn Prediction Model

Model influencing factors

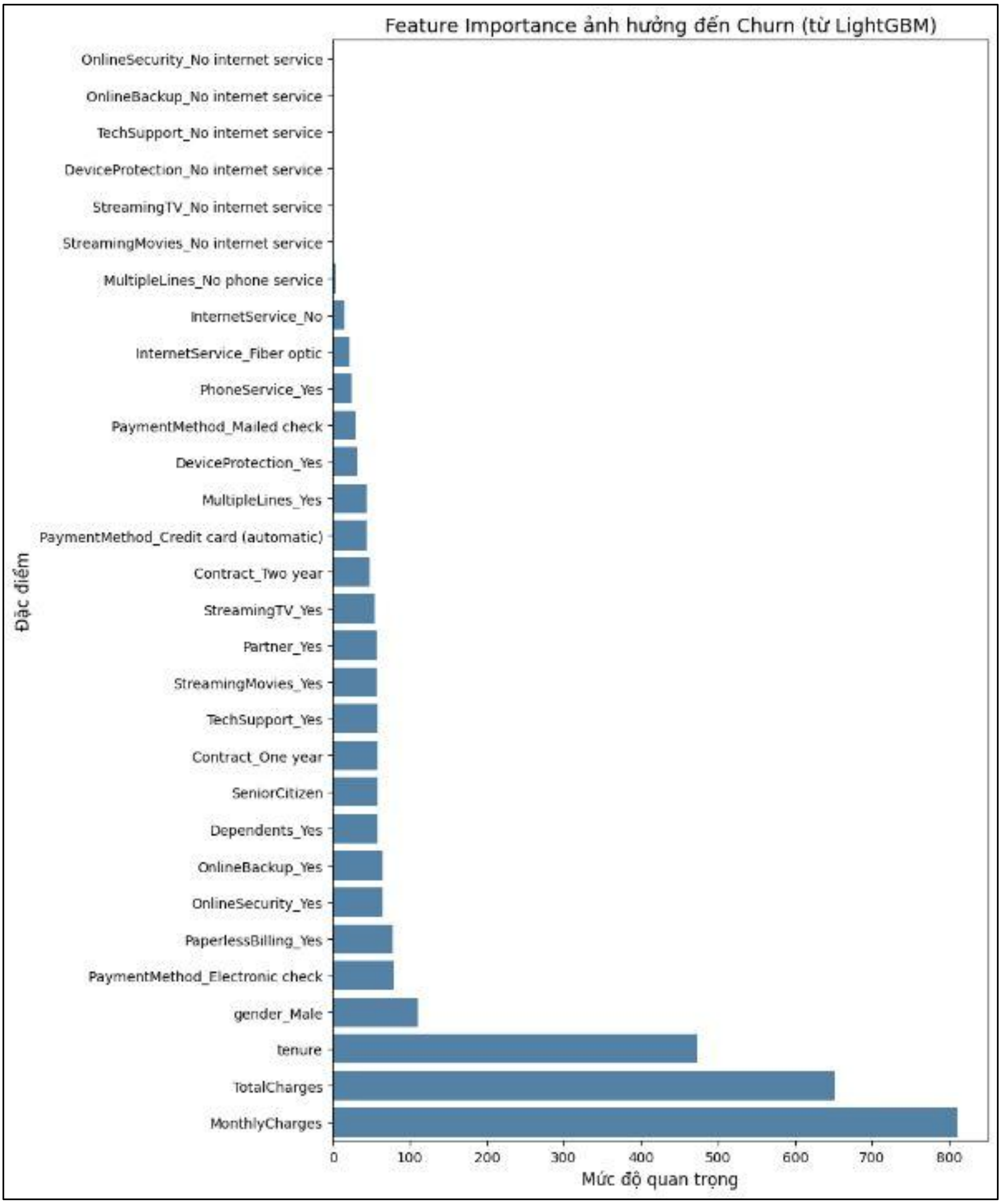


Figure 44. Feature Importance for Customer Churn Prediction (LightGBM Model)

The three most important features are:

- **MonthlyCharges**
- **TotalCharges**

- **Tenure**

These billing-related variables play a dominant role in determining customer churn. Notably, MonthlyCharges is the most influential, suggesting that how much a customer is currently being billed is a strong signal of churn behavior.

Moderate Influencers:

Features with moderate influence include:

- **Gender_Male**
- **PaymentMethod_Electronic check**
- **PaperlessBilling_Yes**
- **OnlineSecurity_Yes**
- **SeniorCitizen**
- **Contract_One year / Two year**

These reflect customer demographics, subscription terms, and service-related behaviors.

Low Impact Features:

Several service-related binary flags (mostly "No internet service" combinations) show very low importance, such as:

- **StreamingMovies_No internet service**
- **StreamingTV_No internet service**
- **OnlineBackup_No internet service**
- **OnlineSecurity_No internet service**

This suggests that the absence of internet service renders related streaming and protection options irrelevant for churn prediction.

Prediction results

```
Logistic Regression Accuracy: 0.7875
Gradient Boosting Accuracy: 0.7896
[LightGBM] [Warning] Found whitespace in feature_names, replace with underlines
[LightGBM] [Info] Number of positive: 1495, number of negative: 4130
[LightGBM] [Info] Auto-choosing row-wise multi-threading, the overhead of testing was 0.001435 seconds.
You can set `force_row_wise=true` to remove the overhead.
And if memory is not enough, you can set `force_col_wise=true`.
[LightGBM] [Info] Total Bins 637
[LightGBM] [Info] Number of data points in the train set: 5625, number of used features: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.265778 -> initscore=-1.016151
[LightGBM] [Info] Start training from score -1.016151
LightGBM Accuracy: 0.7910

Best Model: LightGBM với accuracy 0.7910

So sánh Churn gốc và Churn dự đoán:
   Churn  predicted_Churn
0     0               1
1     0               0
2     1               0
3     0               0
4     1               1
5     1               1
6     0               0
7     0               0
8     1               1
9     0               0

Tỷ lệ dự đoán đúng trên toàn bộ dữ liệu: 0.8639
```

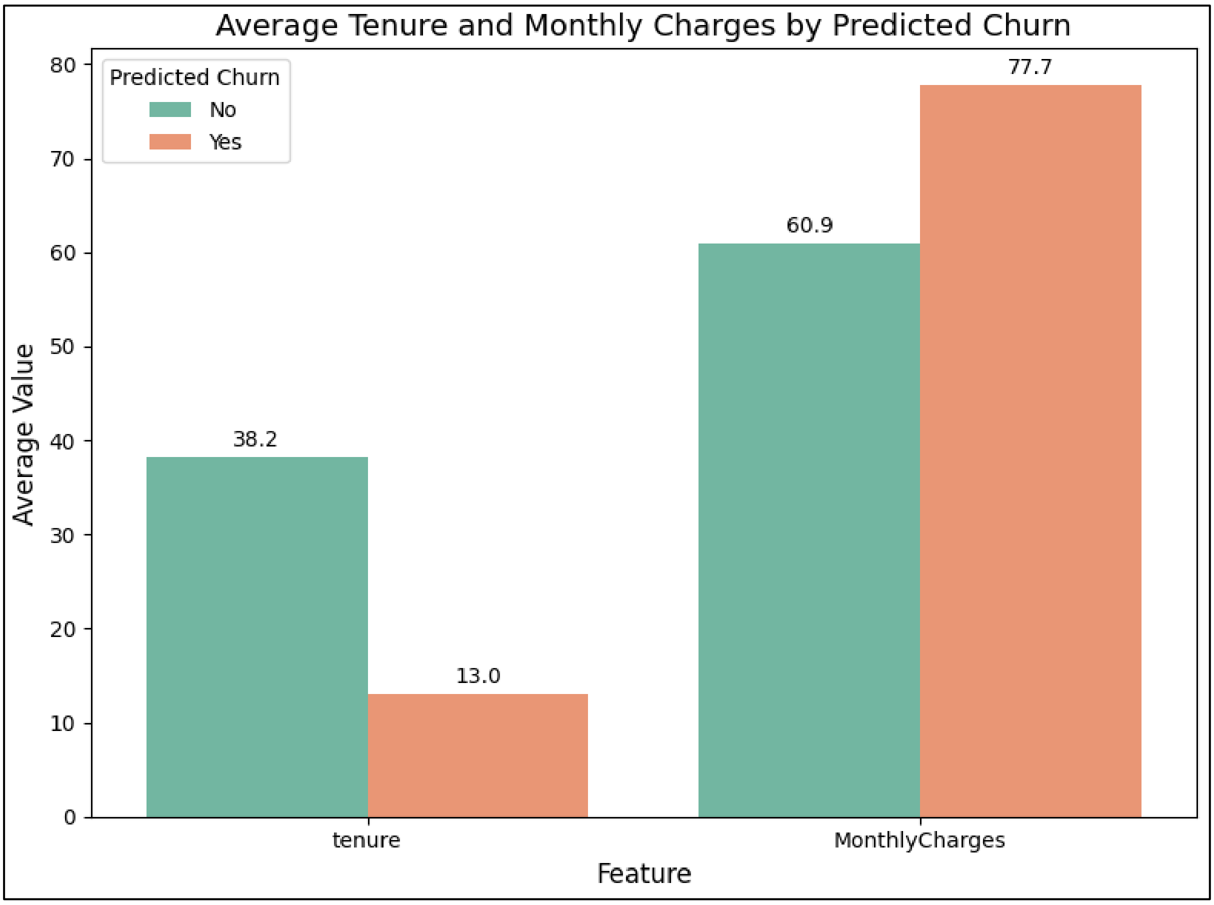
Figure 45. Model Accurracy

LightGBM outperformed other models and achieved a prediction accuracy of 86.39% on the full dataset, making it a strong candidate for customer churn prediction based on the given features and data.

Model Accuracy Comparison

Model	Accuracy
Logistic Regression	78.75%
Gradient Boosting	78.96%
LightGBM	79.10%

Prediction graph to make law



Tenure Rule:

Customers with an average duration of less than 13 months (churn mean) are significantly more likely to churn than those with a duration of more than 38 months (non-churn mean).

Rule: The shorter the duration of service, the more likely the customer is to churn.

Monthly Charges Rule:

Customers with an average monthly cost above $77.7 (churn mean) are more likely to churn than those with a cost below $60.9 (non-churn mean).

Rule: The higher the monthly cost, the more likely the customer is to churn.