

Customer Churn Analysis Using SQL & Excel

Tools Used: MySQL, Excel

Dataset Source: Telco Customer Churn – Kaggle

Completed On : October 2025

Executive Summary

This project analyzes customer churn behavior using SQL queries and Excel dashboards. Using a dataset of 7,032 customers, the goal was to identify churn drivers and present actionable insights. The final dashboard includes slicers and visuals that allow dynamic exploration of churn patterns across tenure, contract type, and payment method.

Project Objectives

Bullets:

1. Segment customers by tenure, contract type, Internet Service and payment method.
2. Identify high-risk churn groups using SQL.
3. Build an interactive Excel dashboard with slicers.
4. Deliver business recommendations based on data insights.

Dataset Overview

Key Metrics

MATRIC	VALUE
Total Customers	7,032
Churned Customers	1,869
Retained Customers	5,163
Churn Rate	26.58%
Contract Types	4 types (Electronic Check, Mailed Check, Bank Transfer, Credit Card)
Payment Methods	Month-to-month, One year, Two year

Insight: Over one-quarter of customers have churned, indicating a significant retention challenge. You can pair this with a pie chart showing the churn vs. retained split, using teal for retained and orange for churned to match your theme. Let me know if you'd like help designing that visual or formatting the slide layout.

SQL Query - Churn By Contract Type

```
SELECT  
    Contract,  
    COUNT(*) AS total_customers,  
    SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,  
    ROUND(SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS churn_rate_percentage  
FROM Churn_Analysis  
GROUP BY Contract  
ORDER BY churn_rate_percentage DESC;
```

Result Grid				
	Contract	total_customers	churned_customers	churn_rate_percentage
▶	Month-to-month	3875	1655	42.71
	One year	1472	166	11.28
	Two year	1685	48	2.85

SQL Query - Churn by internet service

```
SELECT  
    InternetService,  
    COUNT(*) AS total_customers,  
    SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,  
    ROUND(SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS churn_rate_percentage  
FROM Churn_Analysis  
GROUP BY InternetService  
ORDER BY churn_rate_percentage DESC;
```

	InternetService	total_customers	churned_customers	churn_rate_percentage
▶	Fiber optic	3096	1297	41.89
	DSL	2416	459	19.00
	No	1520	113	7.43

SQL Query - Churn by payment method

```
SELECT
```

```
    PaymentMethod,  
    COUNT(*) AS total_customers,  
    SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,  
    ROUND(SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS churn_rate_percentage  
FROM Churn_Analysis  
GROUP BY PaymentMethod  
ORDER BY churn_rate_percentage DESC;
```

Result Grid | Filter Rows: Export: Wrap Cell Content:

	PaymentMethod	total_customers	churned_customers	churn_rate_percentage
▶	Electronic check	2365	1071	45.29
	Mailed check	1604	308	19.20
	Bank transfer (automatic)	1542	258	16.73
	Credit card (automatic)	1521	232	15.25

SQL Query - Churn by Tenure Group

```
SELECT
    CASE
        WHEN tenure <= 6 THEN '0-6 months'
        WHEN tenure BETWEEN 7 AND 12 THEN '7-12 months'
        WHEN tenure BETWEEN 13 AND 24 THEN '13-24 months'
        ELSE '25+ months'
    END AS tenure_group,
    COUNT(*) AS total_customers,
    SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) AS churned_customers,
    ROUND(SUM(CASE WHEN Churn = 'Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS churn_rate_percentage
FROM Churn_Analysis
GROUP BY tenure_group
ORDER BY churn_rate_percentage DESC;
```

Result Grid | Filter Rows: Export: Wrap Cell Content:

	tenure_group	total_customers	churned_customers	churn_rate_percentage
▶	0-6 months	1470	784	53.33
	7-12 months	705	253	35.89
	13-24 months	1024	294	28.71
	25+ months	3833	538	14.04

SQL Query - Average Monthly Charges for Churned vs Non-Churned

```
SELECT  
    Churn,  
    ROUND(AVG(MonthlyCharges), 2) AS avg_monthly_charges  
FROM Churn_Analysis  
GROUP BY Churn;
```

Result Grid | Filter Rows:

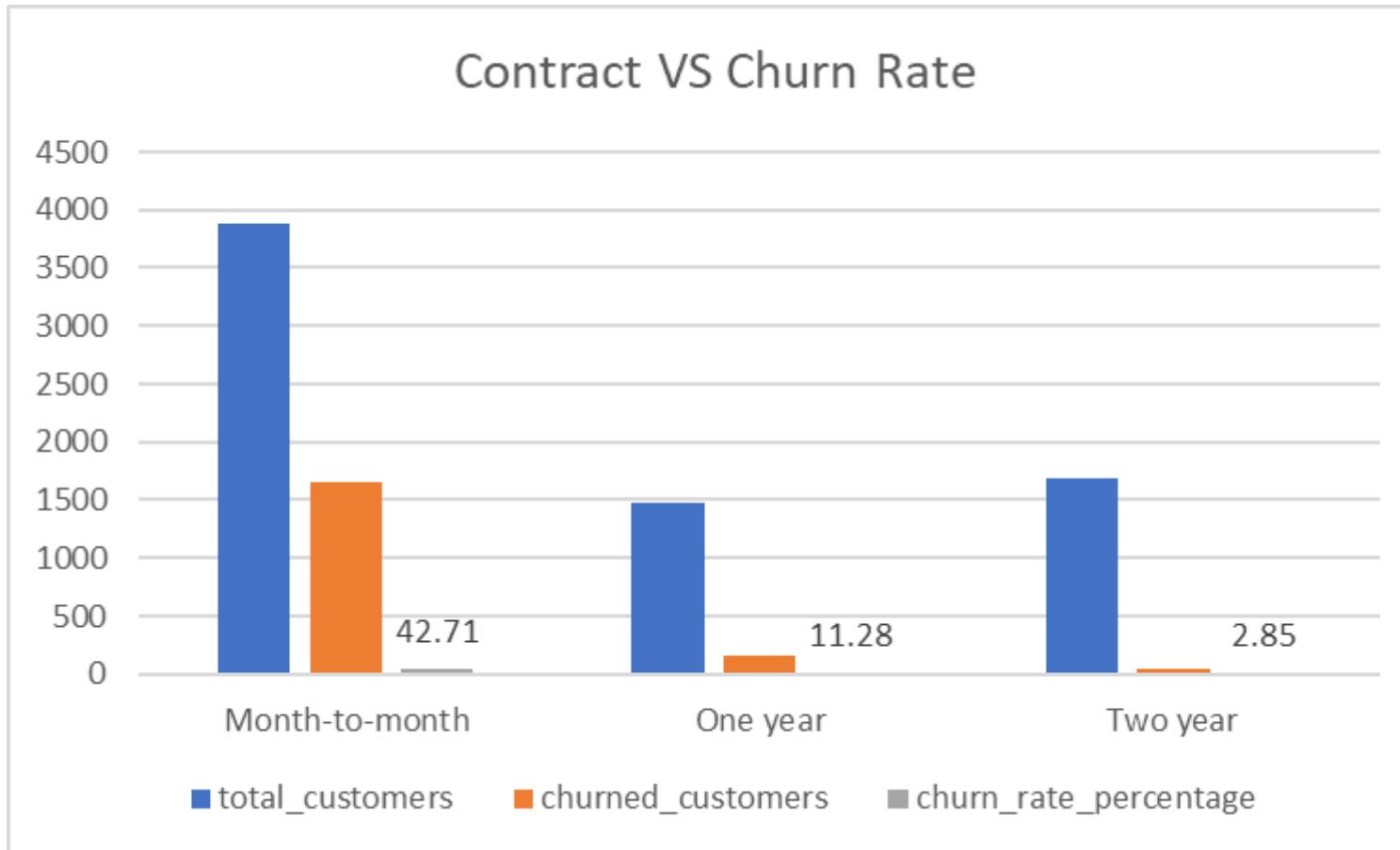
	Churn	avg_monthly_charges
▶	No	61.31
	Yes	74.44

Dashboard Overview

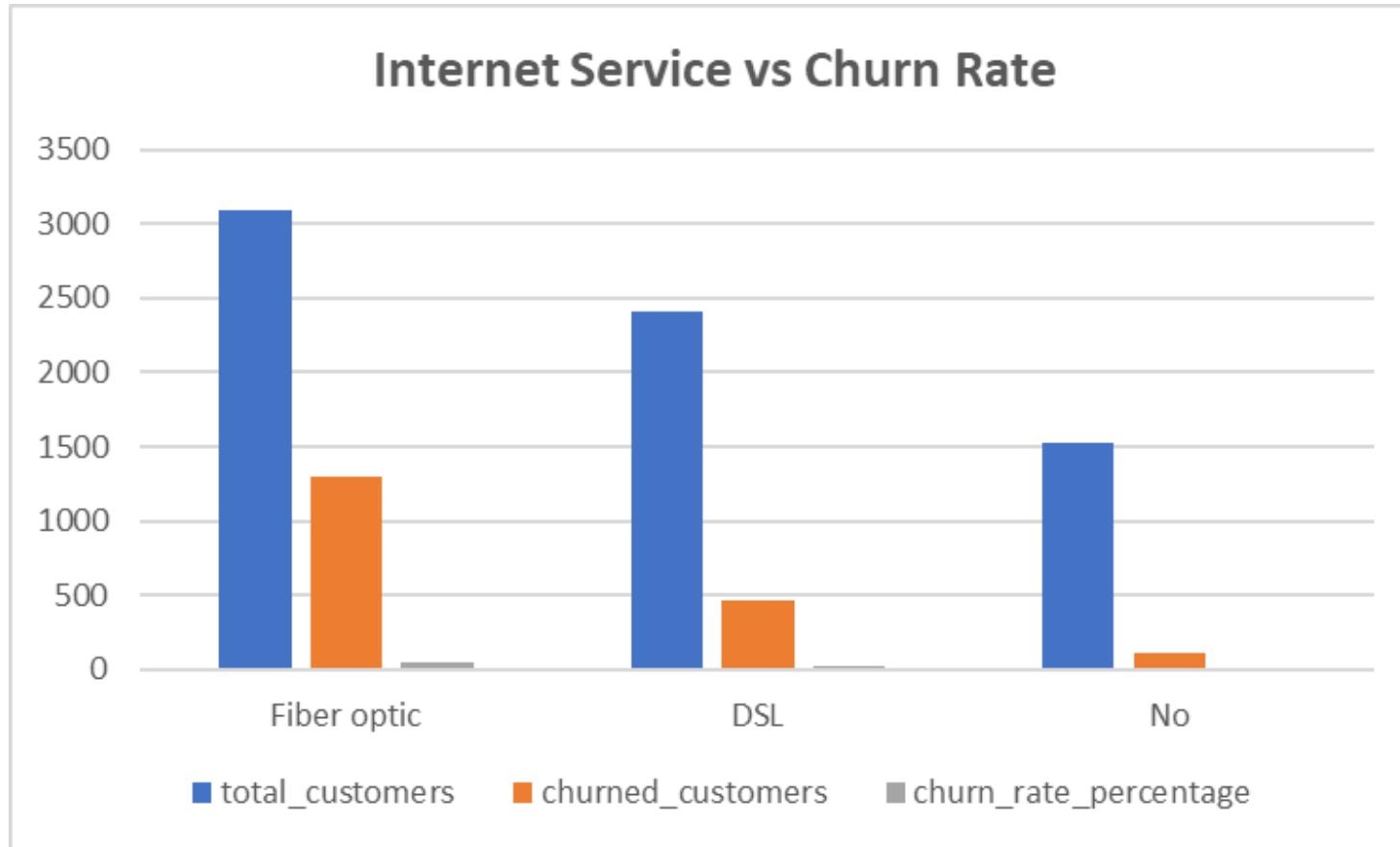
SLICERS



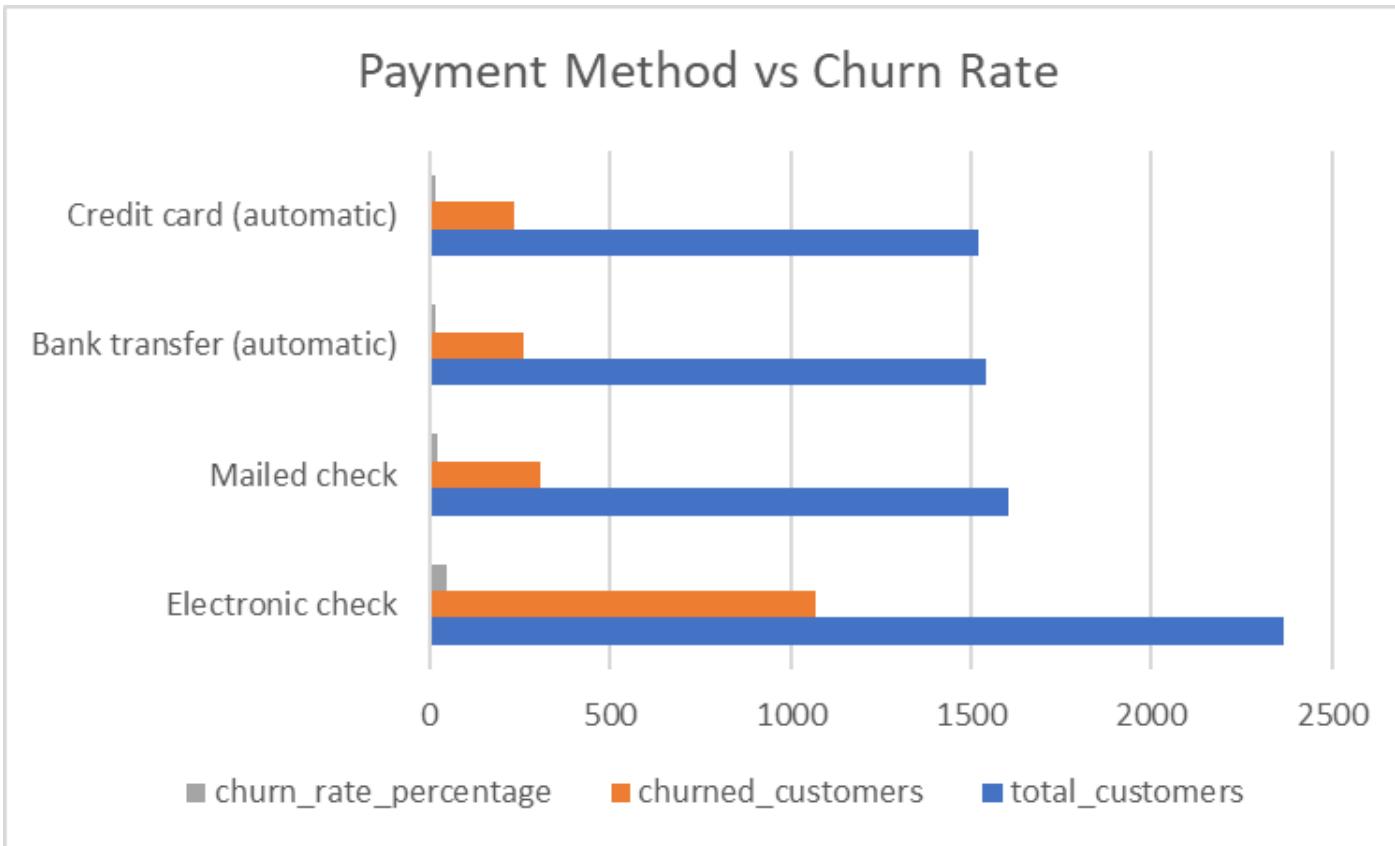
Churn By Contract Type



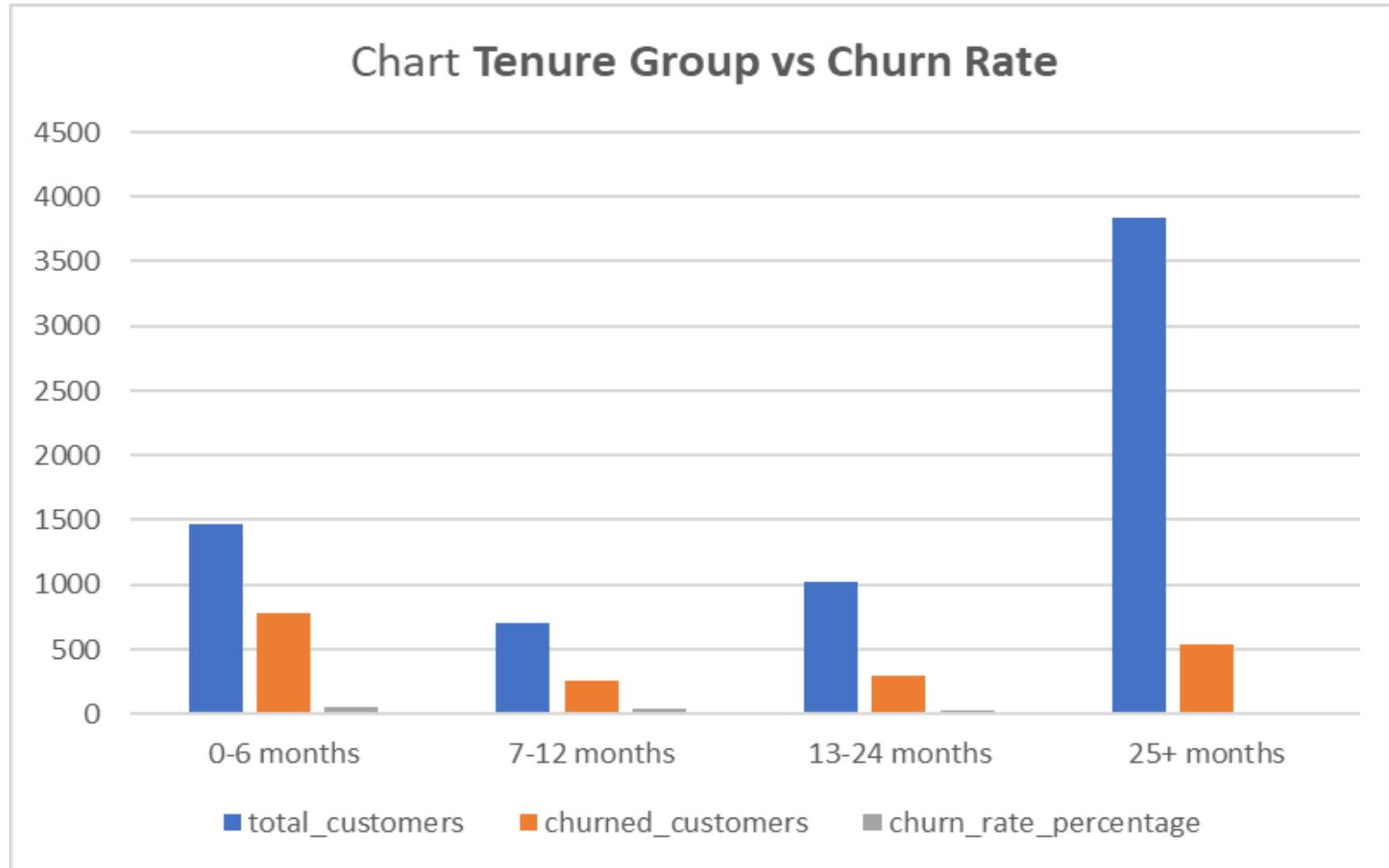
Churn by Internet Service



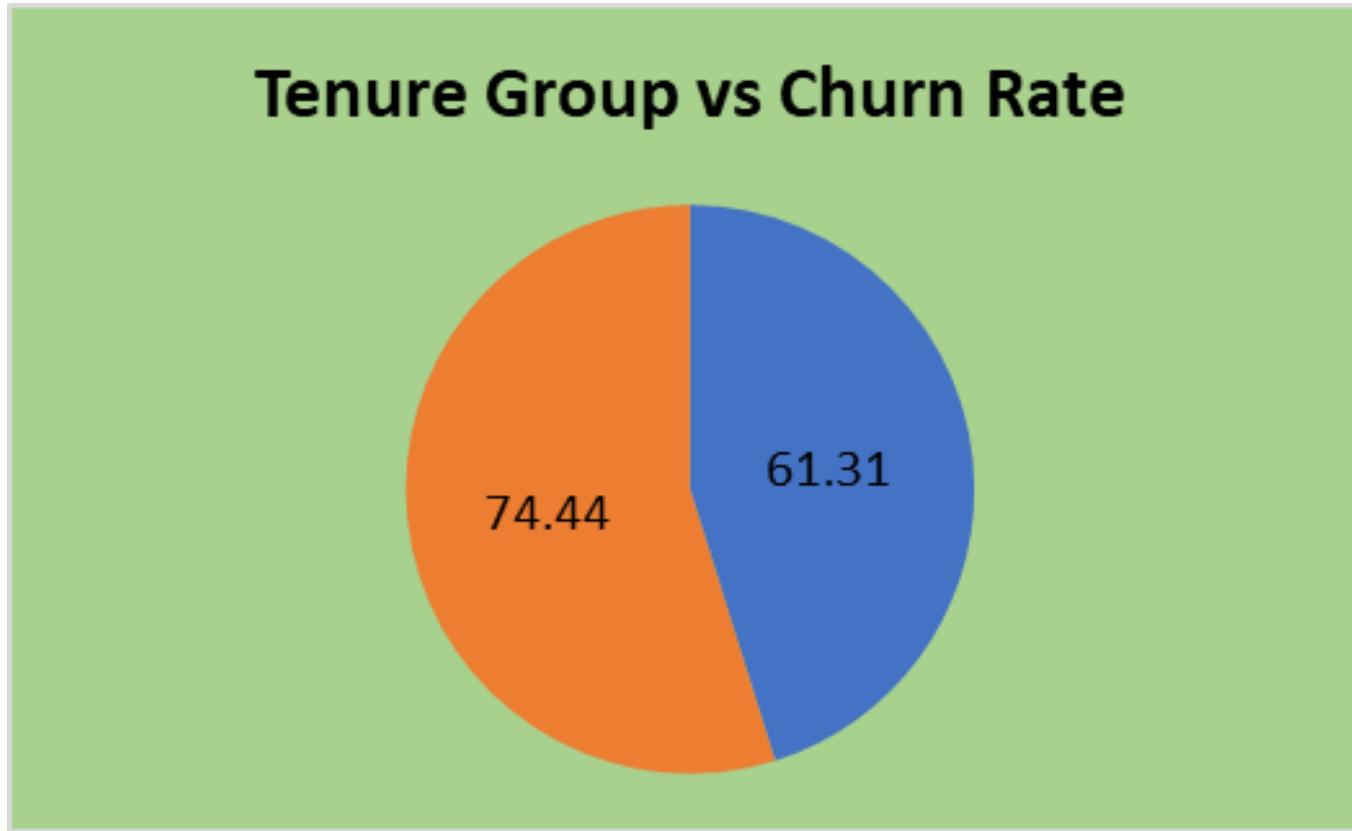
Churn by Payment Method



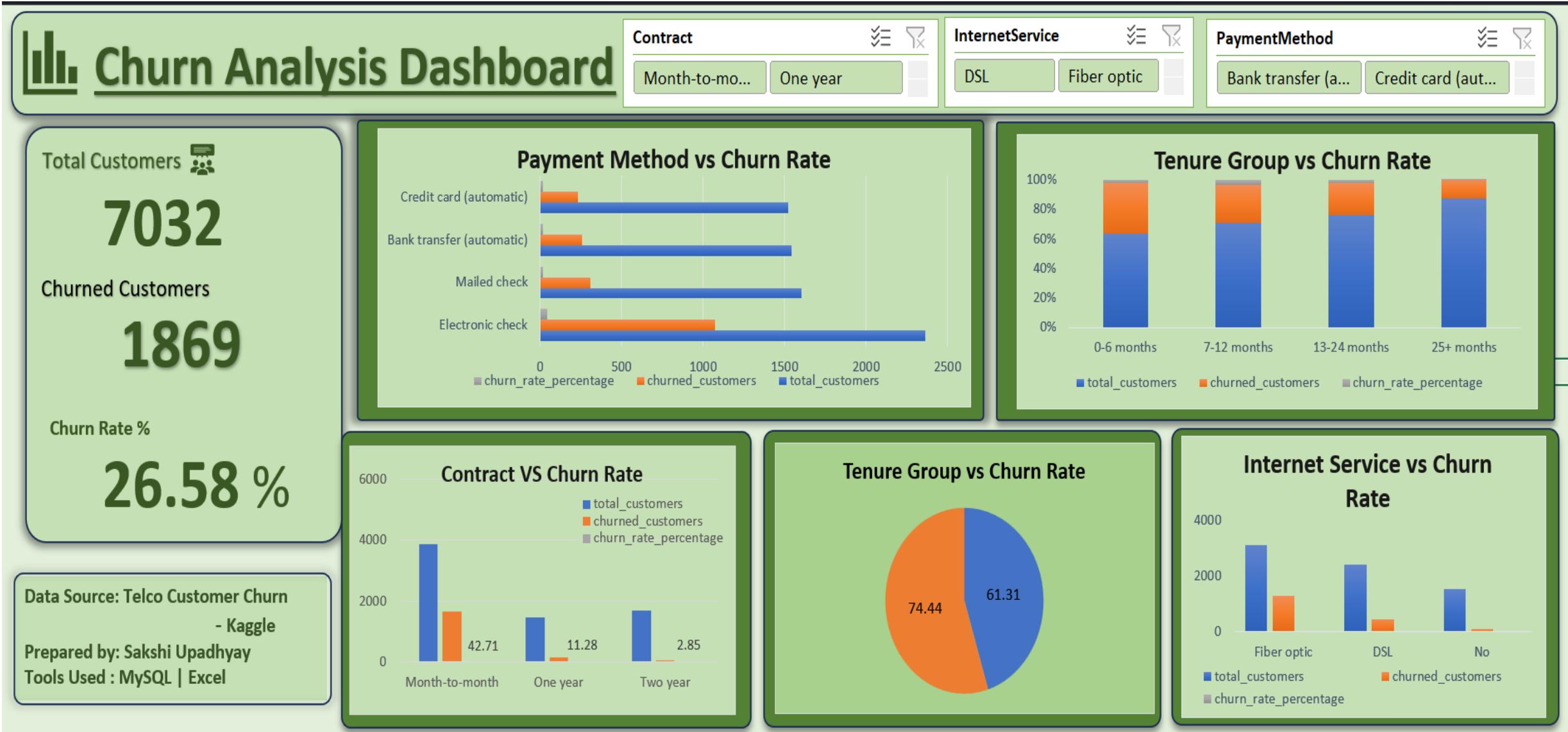
Churn by Tenure Group



Average Monthly Charges for Churned vs Non-Churned



DASHBOARD



Key Insights

- ❑ - Month-to-month contracts have a 42.8% churn rate
- ❑ - Electronic check payments are linked to 45.29% churn
- ❑ - Customers with tenure <12 months are most vulnerable
- ❑ - Fiber optic users churn at 41.89%, compared to 19% for DSL

Recommendations

- Offer discounts for long-term contracts.
- Promote auto-payment options like credit card and bank transfer.
- Launch onboarding campaigns for new customers.
- Target high-risk tenure groups with retention offers.

Conclusion

This project demonstrates how SQL and Excel can be used to extract meaningful insights from customer data. By segmenting customers and visualizing churn patterns, we can support strategic decisions that reduce churn and improve customer satisfaction.

Contact & Portfolio

Portfolio & Contact -

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