Telecom Customer Churn SQL and Power BI project

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I.   Executive Summary:

This project used MySQL for data exploration and Power BI for visualization to analyze customer churn in a telecom company. The goal is to identify churn patterns and provide actionable insights to improve customer retention.

II.   Business Problem / Objective:

- What is the percentage of customers have churned compared to those who stayed?
- Do men or women churn more often?
- Are customers with shorter tenure more likely to churn compared to long-tenured customers?
- Do different services (e.g., internet service, online security, device protection, etc.) affect the numbers of churn customers?
- Which contract type has the highest churn rate?
- What is the total revenue?
- Who are the top risky profiles that the business should focus retention efforts on?

III.   Data Source/s:

- Telco Customer Churn (Kaggle)

## IV.   SQK Analysis & KPIs Explored

- Churn Rate
- Customer Demographics
- Tenure Analysis
- Service Analysis
- Contract & Billing
- Financial Metrics
- High-risk Segments

One of the queries:

```sql
SELECT gender,
            Churn,
      COUNT(*) AS customer_count
FROM telco_churn
GROUP BY gender, Churn
ORDER BY gender, Churn;
```

Selected the gender and churn columns, and used the COUNT function to determine the number of customers in the dataset. Grouped the results by gender and churn, and ordered them by gender and churn.

V.   Dashboard Design & Key Visuals
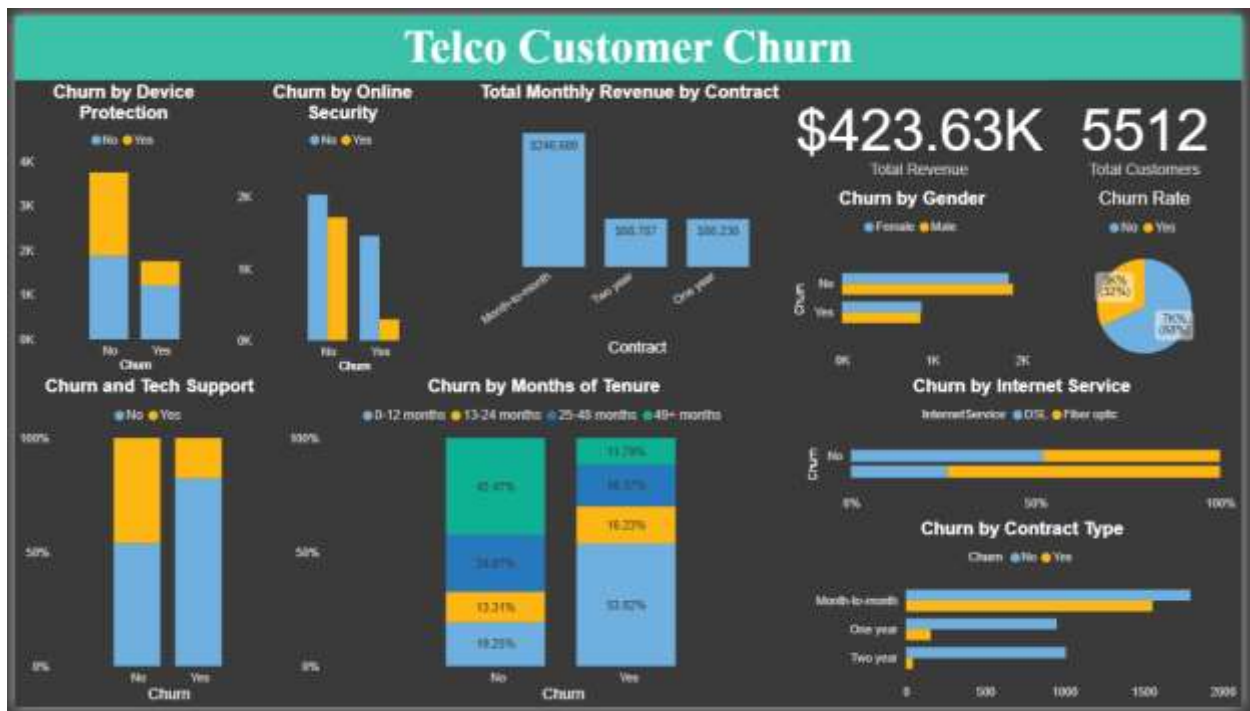
- Churn by Device Protection
- Churn by Online Security
- Total Monthly Revenue by Contract
- Churn and Tech Support
- Churn by Months of Tenure
- Total Revenue

- Churn by Gender
- Churn Rate
- Churn by Internet Service
- Churn by Contract Type

VI.   Key Insights / Findings

- 32% churn rate (high risk)
- Churn rates are nearly the same for male and female customers.
- Customers with month-to-month contract churn the most.
- Customers with device protection, online security, and tech support churn less.
- Churn is highest among short tenure (0-12 months).
- The total revenue is $423.63K.
- Fiber optic customers churn more than DSL users.

VII.   Recommendations

- Offer discounts or incentives for long-term contracts.
- Promote device protection and online security bundles.
- Implement proactive support for new customers within the first 12-months.

VIII.   Limitations / Next Step

- Could add customer income/location data for deeper churn segmentation.
- Conduct training or seminars for employees to help them provide high-quality customer care.

IX.   Conclusion

There is a 32% churn rate among customers, which is already considered a high risk to the business. To reduce churn, the company should implement discounts and promote device protection and online security bundles, particularly for customers with long-term contracts. Additionally, proactive customer care should be provided to new customers, as they are evidently at the highest risk of churning.