**Telco Customer Churn: EDA Summary Report**

1. **Objective**: To understand customer churn patterns by exploring demographic, service, and usage characteristics in the Telco dataset.

2. **Dataset Overview**

Rows: ~7,000 customers

Columns: 21 columns including demographics, services, pricing, and churn status

Target Variable: Churn (Yes/No)

3. **Data Quality**

No significant missing values.

TotalCharges initially stored as an object, correctly converted to float.

Minor anomalies addressed.

4. **Univariate Analysis**

***Categorical Features***:

Churn Rate: ~27% customers churn.

Gender: Almost equal distribution across churn status.

Senior Citizens have a higher churn rate.

Customers without Dependents, without Partner, or those with Fiber optic connections tend to churn more.

***Numeric Features:***

Tenure: Customers with longer tenures churn less.

Monthly Charges: Higher charges slightly correlate with higher churn.

Total Charges: Similar trend as Monthly Charges.

**5. Bivariate Insights**

***Contract Type vs Churn:***  
Month-to-month contract holders churn significantly more.

***Internet Service vs Churn:***  
Customers with Fiber optic connections churn at higher rates.

***Services vs Churn:***  
Lack of services (Online Security, Tech Support, etc.) relates to higher churn.

***Payment Method vs Churn:***  
Customers using electronic checks have a higher churn rate.

**6. Multivariate Insights**

Customers with Fiber optic internet and no Tech Support have the highest churn rates.

Longer tenures and lower charges generally relate to lower churn, regardless of service or contract.

***Strong correlations:***

Tenure vs Churn: Negative (-0.35) — longer tenures reduce churn.

Monthly Charges vs Churn: Positive (0.19).

Total Charges vs Churn: Negative (-0.20).

**7. Key Takeaways**

***High Risk Group:***

Month-to-month contract holders.

Customers with Fiber optic internet and no Tech Support.

Customers paying via Electronic Checks.

***Low Risk Group:***

Customers with long tenures.

Customers with additional services (Online Security, Tech Support).

Actionable Insights:

Focus on incentives for long-term contract signups.

Enhance service support offerings for fiber optic customers.

Evaluate pricing structure for high-churn groups.