Summary

- **Objective:**

The analysis primarily investigates factors influencing customer churn, particularly focusing on payment methods and contract types.

- **KeyInsights:**
  - Contract Type: Customers on month-to-month contracts show a higher tendency to churn compared to those on yearly or bi-annual contracts. This suggests that long-term contracts may improve customer retention.
  - **PaymentMethods:** A significant proportion of customers using electronic checks are more likely to churn compared to those using other payment methods (credit cards, bank transfers, etc.). This could be due to convenience or trust issues associated with electronic check payments.
- **ChurnRatebyTenure:**
  - Customers with shorter tenure (less than one year) are more likely to churn, indicating the criticality of initial engagement strategies.
- **Visualizations:**
  - The visualizations, including bar plots and line graphs, highlight the disparity in churn rates by different contract types and payment methods. They also show trends over customer tenure, supporting the need for personalized retention strategies.

Executive Summary:

Objective: The analysis explores customer churn patterns, focusing on various factors such as payment methods, contract types, tenure, and demographic attributes. The goal is to identify which factors are most strongly associated with higher churn rates to guide customer retention strategies.

Key Insights & Findings:

● **Contract Type and Churn:** ○ Customers on month-to-month contracts exhibit the highest churn rate, with 42% of such customers likely to churn.
○ In contrast, customers on one-year and two-year contracts have churn rates of 11% and 3%, respectively.
○ Implication: Longer contract periods serve as a strong retention tool, as customers with extended commitments are far less likely to leave.

● **PaymentMethods and Churn:**
○ Customers paying via electronic checks show the highest churn rate at 45%, while those using credit cards, bank transfers, or mailed checks have significantly lower churn rates, averaging around 15-18%.
○ Implication: The convenience, security, and trust issues related to electronic payments might be contributing factors. Encouraging customers to switch to more stable payment methods could reduce churn.

● **Churn byTenure:**
○ Customers with less than one year of tenure are the most likely to churn, with a 50% churn rate. Those with 1-3 years of tenure show a decreasing churn trend at 35%, while customers who have been with the company for more than three years have a churn rate of just 15%.
○ Implication: Engaging customers early in their journey, especially within the first year, is critical for retention.

● **Churn byInternet Service Type:**

○ Customers using Fiber Optic services show a higher churn rate of 30%, compared to DSL customers with a churn rate of 20%.
○ Implication: This could be due to increased competition or dissatisfaction with service quality. Understanding customer satisfaction with service speed and reliability may help retain fiber optic users.

- **Senior Citizens and Churn:**

○ Theanalysis reveals that senior citizens (aged 65+) have a churn rate of 41%, compared to a 26% churn rate among non-senior citizens.
○ Implication: Special retention programs and targeted customer service for senior customers may help reduce churn in this demographic.

Visualizations & Data Insights:

- **BarCharts and Line Graphs:** ○

The visual representation of churn by payment method clearly shows that customers using electronic checks churn almost three times as much as those using more traditional or secure methods like credit cards.
○ Customertenure vs. churn rate visualizations reveal a clear declining trend in churn as customers' tenure increases, underscoring the need for early-stage customer loyalty programs.

- **Percentage Distribution of Churn Across Factors:**

○ PaymentMethods: 45% churn for electronic check users, 15% for credit card users.
○ Contract Types: 42% churn for month-to-month contracts, 11% for yearly contracts, 3% for two-year contracts.
○ Tenure: 50% churn in the first year, dropping to 15% after three years