**Detailed Summary of Customer Churn Analysis**

**Dataset Overview:**

* **Total Records:** 7,043 customers
* **Churn Rate:** ~26.5% (about 1 in 4 customers left)
* **Features:** Include demographic info, account data, service usage, and billing preferences

**Exploratory Data Analysis (EDA)**

**Demographics & Churn:**

* **Gender**:
  + Equal distribution between male and female.
  + No major churn difference (≈26% churn in both).
* **Senior Citizen**:
  + Make up ~16% of customers, but churn at **42%**, compared to 24% for non-seniors.
* **Partner Status**:
  + Customers without partners churn at **33%**, while those with partners churn at **19%**.
* **Dependents**:
  + Customers without dependents churn at **32%** vs **16%** for those with dependents.

**Service Subscription Patterns:**

* **Phone Service**:
  + 90%+ have phone service; churn rate here is similar to overall.
* **Internet Service**:
  + **Fiber optic** users churn at **42%**, **DSL** at 19%, and **No internet** users at only **8%**.
* **Streaming & Security Services**:
  + Customers with tech support, device protection, and online security churn ~10–15% less than those without.

**Contract Type & Billing:**

* **Month-to-Month Contracts**:
  + Account for 55% of customers but show a **churn rate of 43%**.
* **One/Two-Year Contracts**:
  + Have churn rates of **11%** and **3%**, respectively.
* **Paperless Billing**:
  + Churn at **33%**, while those receiving paper bills churn at **19%**.
* **Electronic Check Payment Method**:
  + Churn at **45%**, vs 15–20% for credit card or bank transfer users.

**Financial Metrics:**

* **Monthly Charges**:
  + Churn increases with higher charges:
    - <$50: ~16% churn
    - $50–$70: ~25%
    - $70: ~40%
* **Total Charges**:
  + Customers with low total charges (early tenure) churn the most.

**Key Takeaways:**

1. **High Risk Segments**:
   * Senior citizens, month-to-month contract users, Fiber optic internet users, and those paying electronically are more likely to churn.
2. **Retention Opportunities**:
   * Incentivizing upgrades to long-term contracts can reduce churn by over 30%.
   * Bundling services like tech support and online security helps retain users.
3. **Predictive Variables**:
   * Tenure, contract type, and monthly charges are the top predictors of chur