Telco Churn Analysis Project -

1. Dataset Overview

- **Source:** A customer churn dataset with 7,043 entries, including demographic, account, and service details.
- **Key Features:**
  - Demographic data: Gender, Senior Citizen status, Dependents, etc.
  - Service usage: Internet services, phone services, and streaming options.
  - Contract details: Tenure, type of contract, payment method, and billing preferences.
  - Churn label: Indicates whether a customer has churned or not.
- **Data Cleaning:**
  - Blank TotalCharges values replaced with zeros and converted to numerical type.
  - No missing or duplicate values post-cleaning.

2. Key Insights

- **Overall Churn Rate:**
  - **Insight:** 26.54% of customers churned.
  - **Actionable Insight:** A detailed examination of drivers contributing to churn is necessary to mitigate loss.
- **Customer Demographics:**
  - **Senior Citizens:** Higher churn observed compared to non-senior citizens.
    - **Actionable Insight:** Targeted offers or services addressing senior-specific needs may reduce churn.
  - **Gender:** No significant difference in churn rates.
    - **Actionable Insight:** Gender-neutral retention strategies can be applied.
- **Tenure Analysis:**
  - **Insight:** Customers with a tenure of 1-2 months are more likely to churn, whereas long-term customers (tenure >12 months) show higher retention.
  - **Actionable Insight:** Enhance the onboarding experience and early-stage engagement to encourage longer tenure.
- **Contract Type:**

- o **Insight:** Month-to-month contracts exhibit a much higher churn rate compared to one- or two-year contracts.
- o **Actionable Insight:** Incentivize long-term contracts through discounts or bundled services to reduce churn.

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3. Service-Based Analysis

- **Additional Services:**
  - o **Insight:** Customers lacking Online Security, Online Backup, Device Protection, and Tech Support are more likely to churn.
  - o **Actionable Insight:** Promote these services as part of bundled plans to enhance customer value and reduce churn.
- **Internet Service Type:**
  - o **Insight:** Fiber optic service users have higher churn compared to DSL users.
  - o **Actionable Insight:** Address issues related to Fiber optic service pricing or quality.
- **Streaming Services:**
  - o **Insight:** Streaming service users (TV and Movies) show slightly reduced churn rates.
  - o **Actionable Insight:** Market streaming services as a retention tool and offer exclusive content or discounts.

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4. Payment and Billing Insights

- **Payment Methods:**
  - o **Insight:** Electronic check users churn more frequently than those using credit cards or automatic bank transfers.
  - o **Actionable Insight:** Offer incentives for customers to switch to more stable payment methods, like automatic bank transfers.
- **Paperless Billing:**
  - o **Insight:** Paperless billing does not show a significant impact on churn.
  - o **Actionable Insight:** Continue offering flexible billing options without altering strategies.

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5. Visual Insights

- **Charts and Graphs:**
    - Pie charts, histograms, and stacked bar charts effectively highlight churn trends across demographics and service types.
    - Visualizations reveal correlations between service usage, payment methods, and churn rates.

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6. Recommendations

1. **Engage New Customers:** Focus on retaining customers in their first three months through proactive support and incentives.
2. **Long-Term Contracts:** Promote yearly or biennial contracts with discounts to stabilize the customer base.
3. **Enhance Services:** Offer bundled plans for value-added services like security, backup, and streaming.
4. **Review Fiber Plans:** Address concerns regarding fiber optic service pricing or quality to prevent churn.
5. **Incentivize Payment Method Changes:** Encourage users of electronic checks to switch to automatic payments with benefits like discounts or loyalty points.