Telco Customer Churn EDA– Summary Report

- **Project Goal**

  The primary objective of this exploratory data analysis is to understand the **factors contributing to customer churn** in a telecom company and provide **data-driven insights** to help **reduce churn rates** and improve **customer retention**.

- **Dataset Overview**
  - **Source**: IBM Sample Telco Customer Churn Dataset

  - **Total Records**: 7,043 customers

  - **Features**: 21 columns including demographic info, service usage, billing, and churn label

  - **Target Variable**: Churn (Yes/No) – indicating whether the customer has left the service

- **Key Fields**

Column Name	Description
customerID	Unique customer identifier
gender	Male or Female
SeniorCitizen	Indicates if customer is a senior (1 = Yes, 0 = No)
Partner	Whether customer has a partner
tenure	Months with the company
PhoneService	Whether the customer has phone service
InternetService	Type of internet (DSL, Fiber optic, None)
Contract	Type of contract (Month-to-month, One year, Two year)
PaymentMethod	Mode of payment (Mailed check, Electronic check, etc.)
MonthlyCharges	Monthly bill amount
TotalCharges	Total amount billed
Churn	Whether customer churned (Yes/No)

- **Key Findings**

1. Overall Churn Rate

- **26.54%** (1,869 out of 7,043 customers) have churned.

- Indicates a **significant churn problem**, affecting over **1 in 4** customers.

2. Senior Citizens Churn More

- Senior Citizens (converted from 0/1 to Yes/No) show:

  - **41% churn** among seniors

  - **24% churn** among non-seniors

- Suggests that **older customers may need more support** or better-targeted services.

3. Tenure vs Churn

- Churn is **heavily concentrated among customers with tenure less than 15 months**.

- Most long-term customers (>50 months) have **very low churn**, indicating **brand loyalty** builds over time.

4. Contract Type Matters

- Customers with:

  - **Month-to-month** contracts: **43% churn**

  - **One-year** contracts: **11% churn**

  - **Two-year** contracts: **3% churn**

- Customers with **longer contracts are significantly more loyal**.

5. Payment Method Impact

- Customers paying via:

- ○ **Electronic check**: Highest churn (~45%)

- ○ **Mailed check**: ~22%

- ○ **Automatic payments (bank transfer, credit card): <10%**

- Indicates **auto-pay users are more stable**, possibly due to convenience and fewer billing issues.

6. Internet Services Influence

- Churn by Internet Service Type:

  - ○ **Fiber Optic**: ~42% churn – highest

  - ○ **DSL**: ~19% churn

  - ○ **No Internet**: ~8% churn

- Fiber optic customers may be experiencing **dissatisfaction or pricing issues**.

7. Security & Support Services

- Services like **OnlineSecurity, OnlineBackup, TechSupport** are associated with **lower churn**.

- Customers without these services are more likely to leave.

- **Insights & Interpretations**

  - ○ **Short-tenure**, **month-to-month**, **fiber optic**, and **electronic check-paying** customers are **high-risk segments**.

  - ○ **Value-added services** (security, backup, tech support) **improve retention**.

  - ○ **Senior citizens** represent a vulnerable group with higher churn – may need simplified plans or better service touchpoints.

- **Suggestions for Stakeholders**

1. Retention Strategy for New Users

- Implement an **onboarding campaign** focused on the **first 12 months**.

- Provide **tutorials, welcome offers, and proactive support** to minimize early churn.

2. Promote Longer Contracts

- Encourage **1- or 2-year plans** by offering:

  - Discounts

  - Free upgrades

  - Loyalty points

- Reduce the number of **month-to-month** plans or revise their value proposition.

3. Senior-Centric Plans

- Develop specialized support and **easy-to-understand plans for seniors**.

- Offer **offline assistance or phone support** to improve satisfaction.

4. Incentivize Auto-Payments

- Provide **discounts or cashback** for users who switch to **auto-payment modes**.

- Highlight the convenience and security of automatic billing.

5. Improve Fiber Optic Experience

- Investigate **customer feedback** for fiber optic users.

- Focus on **network reliability, pricing transparency**, and **issue resolution speed**.

6. Bundle Add-on Services

- Bundle **OnlineSecurity, Backup, and TechSupport** with internet plans.

- Emphasize the **value and peace of mind** these features provide.