### **📊 Customer Churn Analysis Project**

A complete data-driven analysis using Python, Seaborn, and Matplotlib to uncover churn behavior in a telco customer base.

## **🔍 Project Objective**

To understand **why customers churn** and what characteristics are common among them — using visual storytelling and data exploration.

## **🛠 Tools & Libraries Used**

* Python 3.x
* Pandas, NumPy for data manipulation
* Matplotlib, Seaborn for data visualization
* Jupyter Notebook

## **📈 Key Insights**

### **1. Churn Rate Overview:**

* Total Customers: 7,043
* Churned Customers: 1,869 (**26.54%**)
* Retained Customers: 5,174 (**73.46%**)  
   🔹 *1 in 4 customers are leaving — this is a significant issue.*

### **2. Churn by Gender:**

* Churn behavior is **similar across genders**
* Gender does **not significantly influence** customer churn

### **3. Senior Citizens Churn More:**

* Senior Citizens have a churn rate of **41%**
* Non-Senior Customers churn at **24%** 🔹 *Senior citizens are 70% more likely to churn — services may need to be tailored better.*

### **4. Tenure vs. Churn:**

* Customers with **tenure < 10 months** are more likely to churn
* Long-tenure customers (1+ year) rarely leave  
   🔹 *Early-stage customer experience is critical for retention.*

## **📊 Visual Highlights**

* Pie charts, bar plots, and histograms used to explain churn distribution
* Clear and colorful Seaborn plots make insights easy to understand

## **✅ Conclusion**

Churn is heavily influenced by **tenure length** and **age group**, but not gender. Businesses must:

* Improve onboarding experience during the first year
* Focus on senior citizen support
* Use data to personalize retention strategies

## **🚀 Future Work**

* Predict churn using ML classification models (Logistic Regression, Random Forest, etc.)
* Explore impact of service types and billing methods

## **🙌 About the Author**

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