### 📌 ****Telco Customer Churn Analysis Summary****

#### 🔹 ****1. Data Cleaning & Preparation****

* **Dataset Size**: 7043 rows × 21 columns.
* Replaced blank entries in TotalCharges with 0 to avoid type conversion issues and converted it to float.
* Transformed SeniorCitizen column from 0/1 → No/Yes for clarity.

#### 🔹 ****2. Overall Churn Rate****

* 📊 A **pie chart** revealed that **26.54% of customers have churned** while **73.46% have stayed**.

#### 🔹 ****3. Key Churn Drivers Identified****

Based on count plots and histograms, the following factors significantly influenced churn:

##### 👵 **Senior Citizens**

* Churn rate for senior citizens is **much higher** than for non-seniors.
* Bar charts with % stacking showed a **disproportionate exit rate** among them.

##### 📆 **Contract Type**

* **Month-to-month contract** customers are at the highest risk:
  + A large majority of churned customers were using this type.
  + In contrast, **1- and 2-year contract holders** had **significantly lower churn**.

##### 💳 **Payment Method**

* Customers using **Electronic Check** had the **highest churn rate** among all payment methods.
* Automatic payment methods (like Bank Transfer or Credit Card) showed **reduced churn**.

##### 🌐 **Internet & Support Services**

* Customers using **Fiber Optic internet** churned more than those using DSL.
* **Lack of OnlineSecurity and TechSupport** was strongly associated with churn:
  + Users without TechSupport had **higher churn**, possibly due to unresolved issues.

##### ⏳ **Tenure**

* Histogram analysis showed:
  + Customers with **1–2 months tenure** had **the highest churn rate**.
  + Churn probability **decreased steadily** as tenure increased.

#### 🔹 ****4. Feature-Wise Churn Analysis****

Your analysis used **9 stacked bar charts** comparing churn rates across features:

* **StreamingTV**, **OnlineSecurity**, **DeviceProtection**, etc.
* Key finding: Services like **OnlineBackup and TechSupport** play a crucial role in customer retention.

### 📌 ****Insights Recap****

| **Feature** | **Key Insight** |
| --- | --- |
| Churn Rate | **26.54%** of customers churned |
| Contract Type | **Month-to-month** users have highest churn |
| Senior Citizens | More likely to churn |
| Payment Method | **Electronic Check** → High churn |
| Internet Service | **Fiber Optic** users churn more |
| Tech Support | Lack of support = higher churn |
| Tenure | New users (0–2 months) churn more |