Customer Churn Analysis – Project Summary

This project is a comprehensive Data Analysis case study on **Customer Churn Prediction** in the telecom industry. The dataset consists of 7,043 customer records with 21 attributes, including demographics, service details, and account information. The primary objective of this analysis is to uncover key factors contributing to customer churn and provide data-driven insights to help reduce customer attrition.

■ Methodology

- Data Cleaning: Replaced missing values, corrected data types, and standardized categorical features (e.g., converted SeniorCitizen 0/1 into Yes/No).
- Exploratory Data Analysis (EDA): Conducted descriptive statistics, churn distribution, and feature correlation analysis.
- Visualization: Applied Seaborn and Matplotlib to build churn comparison charts such as tenure vs churn, contract type vs churn, and payment method vs churn.

■ Key Insights

- Customers with **month-to-month contracts** have the highest churn rate compared to yearly contracts.
- Electronic check users are **more likely to churn**, while those paying via bank transfer or credit card are more stable.
- New customers with **tenure between 1–2 months** are at a higher risk of leaving, whereas long-tenure customers show loyalty.
- Senior citizens and customers without dependents are slightly more prone to churn than others.

■ Conclusion & Recommendations

The project successfully identified churn-driving factors such as contract type, payment method, and tenure length. To minimize churn, businesses should focus on converting customers to long-term contracts, encourage reliable payment methods, and implement onboarding programs for new customers. These strategies can significantly enhance **customer retention and business profitability**.