Project Summary: Telecommunication Customer Churn Analysis

Analysed customer churn in a telecommunication company. Aim was to identify key factors contributing to customer churn and help the business reduce churn rates. The dataset included demographic details such as **gender**, **SeniorCitizen**, and **Dependents**, along with service-related attributes like **PhoneService**, **InternetService**, **Contract type**, and **MonthlyCharges**.

Key steps involved:

- **Data Cleaning**: Transformed the `TotalCharges` column from a string format to a numerical one, handling missing or zero values.
- **Exploratory Data Analysis (EDA)**: Generated insights through various visualisations, including:
  - **Churn Rate**: Explored the proportion of customers who churned, segmented by seniority, contract type, and other features.
  - **Service Usage**: Analysed features like `InternetService`, `StreamingMovies`, and `TechSupport` to understand their influence on customer churn.
  - **Financial Metrics**: Investigated correlations between `MonthlyCharges` and `TotalCharges` with churn.

Notable Findings:

- Customers with **Monthly Contracts** had a significantly higher churn rate compared to those with longer contracts.
- **Senior Citizens** were more likely to churn compared to younger customers.
- Customers without **Tech Support** or **Streaming Services** also exhibited a higher churn rate.

Visualised these insights using bar charts, pie charts, and histograms, providing a clear understanding of customer behaviour and contributing factors.

This analysis can be a powerful tool for the business to target at-risk customers and reduce churn through targeted interventions.