Objective:

To predict customer churn (i.e., customers who are likely to leave the company) using a decision tree classifier, enabling the telecom company to implement targeted retention strategies.

Data Collection:

The dataset contains customer information from a telecom company, including:

* CustomerID: Unique identifier for each customer
* Gender: Male/Female
* Age: Customer's age
* Tenure: Number of months the customer has been with the company
* MonthlyCharges: Monthly charges paid by the customer
* TotalCharges: Total charges paid by the customer
* Contract: Type of contract (Month-to-month, One year, Two year)
* Churn: Whether the customer has churned (Yes/No)

**Taks to be completed:**

**Data Preprocessing:**

* Handle missing values, if any.
* Convert categorical variables into numerical (e.g., using one-hot encoding).
* Scale the numerical features if necessary.

**Exploratory Data Analysis (EDA):**

* Analyze the distribution of key variables (e.g., Age, Tenure, MonthlyCharges).
* Examine the relationship between features and the target variable (Churn).

**Feature Selection:**

* Select relevant features that may influence churn (e.g., Tenure, MonthlyCharges, Contract type).

**Model Building:**

* Split the data into training and testing sets.
* Train a decision tree classifier on the training data.

**Model Evaluation:**

* Evaluate the model on the testing set using metrics such as accuracy, precision, recall, and F1-score.