**CUSTOMER CHURN PROJECT**

**Problem Statement**

The problem at hand is to analyze **customer churn** for a telecommunications company. The company is experiencing a high rate of customer churn, resulting in significant **revenue loss**. The management wants to identify the **key factors contributing** to customer churn and develop strategies to reduce churn rate and increase customer retention. The **dataset** provided includes information about customers, such as demographics, service usage, contract details, and customer churn status.

AIM: The challenge is to analyze this dataset using data analytics techniques and uncover insights that can help the company understand the drivers of churn and take proactive measures to retain customers.

The project aims to answer the following questions

1. What are the primary factors influencing customer churn? Are there any specific patterns or correlations in the data that indicate churn-prone customers?

2. Can we identify any demographic or behavioral characteristics that differentiate churned customers from those who continue to be active?

3. Are there any **specific services or contract terms** that contribute significantly to customer churn? Are there opportunities to modify or enhance these offerings to reduce churn?

4. Can we build a predictive model that accurately forecasts customer churn? What are the key features or variables that contribute most to the predictive accuracy of the model?

**(Decision Tree Algorithm)**

The outcome of this project will enable the telecommunications company to gain a deeper understanding of customer churn and develop **data-driven strategies** to improve customer retention. The insights derived from the analysis will guide decision-making processes and aid in the development of targeted retention programs, leading to increased customer satisfaction and reduced revenue loss due to churn.

**DATASET**

To create a dataset for customer churn analysis in a telecommunications company, we can include various relevant features that capture customer information, service usage, contract details, and churn status. Here's an example of a dataset that can be used for customer churn analysis

1. Customer ID A unique identifier for each customer.

2. Gender The gender of the customer (Male/Female).

3. Age The age of the customer.

4. Marital Status Whether the customer is married or single.

5. Dependents The number of dependents the customer has.

6. Contract Type The type of contract the customer has (e.g., monthly, yearly).

7. Internet Service The type of internet service the customer has subscribed to (e.g., DSL, fiber optic).

8. Phone Service Whether the customer has a phone service or not.

9. Multiple Lines Whether the customer has multiple phone lines or not.

10. Online Security Whether the customer has opted for online security services.

11. Online Backup Whether the customer has opted for online backup services.

12. Device Protection Whether the customer has opted for device protection services.

13. Tech Support Whether the customer has opted for technical support services.

14. Streaming TV Whether the customer has subscribed to streaming TV services.

15. Streaming Movies Whether the customer has subscribed to streaming movie services.

16. Monthly Charges The monthly charges for the customer's services.

17. Total Charges The total charges incurred by the customer.

18. Churn Status Whether the customer has churned or not (Yes/No).

Questions to find the solution of churn analysis(MySQL and Power BI/Tableau)

1. Identify the total number of customers and the churn rate
2. Find the average age of churned customers
3. Discover the most common contract types among churned customers
4. Analyze the distribution of monthly charges among churned customers
5. Create a query to identify the contract types that are most prone to churn
6. Identify customers with high total charges who have churned
7. Calculate the total charges distribution for churned and non-churned customers
8. Calculate the average monthly charges for different contract types among churned customers
9. Identify customers who have both online security and online backup services and have not churned
10. Determine the most common combinations of services among churned customers
11. Identify the average total charges for customers grouped by gender and marital status
12. Calculate the average monthly charges for different age groups among churned customers
13. Determine the average age and total charges for customers with multiple lines and online backup
14. Identify the contract types with the highest churn rate among senior citizens (age 65 and over)
15. Calculate the average monthly charges for customers who have multiple lines and streaming TV
16. Identify the customers who have churned and used the most online services
17. Calculate the average age and total charges for customers with different combinations of streaming services
18. Identify the gender distribution among customers who have churned and are on yearly contracts
19. Calculate the average monthly charges and total charges for customers who have churned, grouped by contract type and internet service type
20. Find the customers who have churned and are not using online services, and their average total charges
21. Calculate the average monthly charges and total charges for customers who have churned, grouped by the number of dependents
22. Identify the customers who have churned, and their contract duration in months (for monthly contracts)
23. Determine the average age and total charges for customers who have churned, grouped by internet service and phone service
24. Create a view to find the customers with the highest monthly charges in each contract type
25. Create a view to identify customers who have churned and the average monthly charges compared to the overall average
26. Create a view to find the customers who have churned and their cumulative total charges over time
27. Stored Procedure to Calculate Churn Rate
28. Stored Procedure to Identify High-Value Customers at Risk of Churning.