



# Telecom Customer Retention

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# PROBLEM STATEMENT

- The telecom industry faces a major challenge in retaining customers due to increasing competition and frequent service issues.
- Service disruptions and unaddressed network risks lead to customer dissatisfaction and churn.
- There is a strong need to proactively predict potential risks and retain customers before they choose to leave.



# Project Description

- This **project** aims to utilize Machine Learning to predict customer churn and network-related risks in the telecom sector.
- By analyzing large volumes of customer and network data, we aim to identify early warning signs of dissatisfaction.
- The model helps telecom companies to reduce downtime, mitigate service interruptions, and improve customer satisfaction.
- Our solution allows for proactive risk mitigation, ensuring a seamless and reliable service experience.

# WHO ARE THE END USERS?

- **Telecom Service Providers:** To identify at-risk customers and prevent churn.
- **Network Management Teams:** To predict and fix network issues before customers are affected.
- **Data Science Teams:** To continuously optimize churn prediction and risk analysis.
- **Business Strategists:** To design better retention strategies based on prediction insights.

# TOOLS & TECHNOLOGY

- Programming Language: Python
- Environment: Google Colab
- Libraries & Tools: Pandas, NumPy - Data manipulation
- Matplotlib, Seaborn - Data visualization
- Scikit-learn - ML model building and evaluation
- Machine Learning Techniques: Logistic Regression ,Decision Trees ,Random Forest .
- Model Evaluation (Accuracy, Precision, Recall, F1-score)



# RESULTS

CommandsCodeTextRun all

1.PROJECT INTRODUCTION - EDUNET (VOIS)

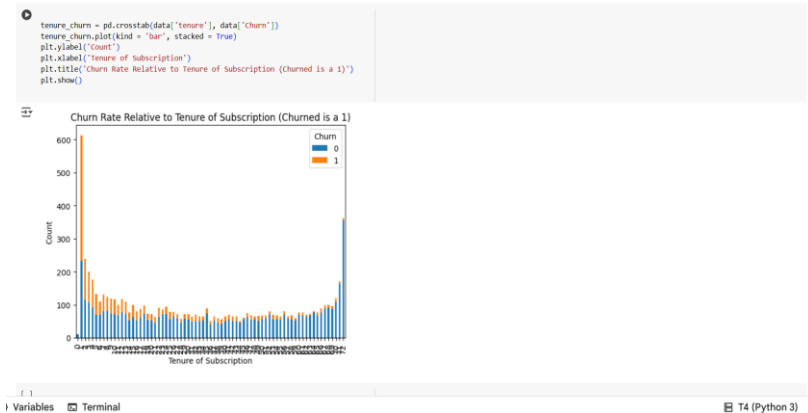
This project is a part of an internship initiative focused on addressing customer churn in the telecom industry using Machine Learning techniques. With rising competition and increasing service-related issues, many telecom users are choosing to leave their service providers. Identifying the reasons behind this behavior is crucial for improving customer retention strategies.

In this project, we use a real-world telecom dataset to build a predictive model that can help identify users who are likely to discontinue the service. By analyzing customer data and uncovering key churn indicators, the goal is to support data-driven decision-making that can enhance user satisfaction and reduce overall churn rates.

```
[ ] import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import missingno as ms
from sklearn import model_selection, metrics
from sklearn.preprocessing import StandardScaler
from sklearn.model_selection import GridSearchCV
from sklearn.model_selection import train_test_split
import matplotlib.pyplot as plt
%matplotlib inline

[ ]
def warn(*args, **kwargs):
```

VariablesTerminalT4 (Python 3)



[PROJECT DEMO LINK](#)  
(CLICK HERE)

# Thank you