**CUSTOMER CHURN**

**ANALYSIS - TELECOM INDUSTRY**

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# OBJECTIVE

TO PREDICT TELECOM CUSTOMER CHURN AND PROVIDE ACTIONABLE INSIGHTS TO RETAIN USERS IN A COMPETITIVE TELECOM ENVIRONMENT.

## TOOLS & TECHNOLOGIES

•Python (Scikit-learn, ELI5)

•SQLite (for data storage)

•Pandas, NumPy

•Seaborn, Matplotlib

•Jupyter Notebook / VS Code

## PROJECT FEATURES

* Data Preprocessing
* Binary Classification (Churn Prediction)
* Model Explainability with ELI5
* Customer Segmentation:
* At Risk
* Loyal
* Dormant

## SQL-BASED ANALYSIS

* Aggregated call duration and complaint history
* Analyzed recharge frequency patterns
* Identified churn patterns using SQL queries
* Segmented high-risk users with behavior flags

## MACHINE LEARNING MODEL

* Model Used: Random Forest Classifier
* Target Variable: churn (Yes/No)
* Training Features: Tenure, usage, complaints, recharge patterns, etc.
* Interpretability: Used ELI5 for model explanation
* Evaluation: Accuracy Score, Confusion Matrix

## CUSTOMER SEGMENTATION

* At Risk: High complaints, low recharge frequency
* Loyal: Long tenure, consistent activity, low churn probability
* Dormant: Low engagement, low complaints, moderate churn risk

## FINAL RECOMMENDATIONS

* Focus on retaining high-value At-Risk customers
* Offer loyalty rewards to long-term users
* Launch re-engagement campaigns for Dormant customers
* Monitor recharge and complaint frequency closely

## THANK YOU

• Thank You!

Presented by: Thota Vinod Kumar

Customer Churn Prediction & Retention Strategy Project