CUSTOMER CHURN ANALYSIS – SUMMARY & FINAL RECOMMENDATIONS

By – Vani Goel

Email Id- vanigoel.110@gmail.com

SUMMARY:

This project focuses on predicting customer churn in the telecom industry using machine learning techniques and data-driven insights. A binary classification approach was adopted using Decision Tree, Random Forest, and XGBoost models, with SMOTE applied to handle class imbalance. The model's performance was assessed using accuracy, confusion matrix, and classification reports.

To understand feature impact, SHAP analysis was used, revealing key churn drivers such as:

- Contract type (especially month-to-month),
- Tenure,
- Monthly charges, and
- Customer support interactions.

Based on model outputs, customers were segmented into three groups:

- **At Risk**: High likelihood of churn.
- **Loyal**: Long-tenure customers with low churn risk.
- **Dormant**: Low engagement or activity levels.

FINAL RECOMMENDATIONS:

1. **Engage At-Risk Customers**
   Reach out with personalized offers, discounts, or contract upgrades to prevent churn.
2. **Reward Loyal Users**
   Implement loyalty programs or offer perks to maintain satisfaction and retention.
3. **Resolve Common Complaints**
   Analyze and address frequently reported issues to enhance user experience.
4. **Reactivate Dormant Users**
   Design targeted campaigns (emails, offers) to re-engage users with low activity.

5. **Monitor Churn Drivers**
   Continuously track key features influencing churn and update models regularly to adapt to new patterns.

These strategies, combined with continuous monitoring and customer feedback loops, can significantly improve customer retention and business sustainability in the telecom sector.