PROJECT TITLE:

Customer Churn Analysis and Prediction

DESCRIPTION:

A data-driven machine learning project that identifies key factors behind customer churn in a telecom company.The project aims to analyse patterns and predict whether a customer is likely to leave the company, helping the business make informed decisions to reduce churn.

FEATURES:

1. Data cleaning, handling missing values, and encoding.
2. Exploratory Data Analysis (EDA) to find insights using visualisations.
3. Feature selection and transformation.
4. Machine learning model building and evaluation.
5. Churn prediction using the best-performing model.

TECHNOLOGIES USED:

1. Python
2. Pandas, NumPy
3. Matplotlib, Seaborn

Tasks 5: Customer Retention Strategies

DESCRIPTION:

We proposed customer retention strategies such as improving onboarding, offering loyalty rewards, enhancing support, analysing churn patterns, and encouraging long-term contracts to reduce customer churn and improve satisfaction.

Code Snippet:

```python
import pandas as pd

df=pd.read_csv("cleaned_customer_churn.csv")
df['ChurnBinary']=df['Churn_Yes'].map({"Yes":1,"No":0})
correlation=df.corr(numeric_only=True)
['ChurnBinary'].sort_values(ascending=False)
print("Top Features correlated with churn:")
print(correlation.drop("ChurnBinary").head(5))
print("\nData Drive Retention Stragies:")
print("-- High 'MonthlyChurn' correlates with higher churn -> offer discounts or value added bundles")
print("-- Low 'tenure' customers churn more -> improve onboarding and provide loyalty incentives")
print("-- Promote 'One year' or 'Two year' instead of 'month-to-month' plans.")
print("-- Improve service for 'Fiber optic' internet users if correlated with churn.")
print("-- Offer targeted support customers with high service-related issues.")
df['LTV']=df['MonthlyCharges']*df['tenure']
print("\nLifetime Value (LTV) calculated as MonthlyCharges x Tenure")
```

```
print("Sample LTVs:")
print(df[["customerID","MonthlyCharges","tenure","LTV"]].head())
ltv_thresold=df["LTV"].quantile(0.75)
high_value_churners=df[(df["Churn_Yes"]=="Yes")&(df['LTV']>ltv_thr
esold)]
print("\nHigh-Value Customers at risk of Churning:")
print(high_value_churners[['customerID','Contract_One
year','Contract_Two year','tenure','MonthlyCharges','LTV']])
```

OUTPUT: