PREDICTING CUSTOMER CHURN USING LOGISTIC REGRESSION

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Outline

- Title Name
- Outline
- Abstract
- Problem Statement
- Proposed Solution
- Short Video
- Implementation
- Output Screenshots
- References

Abstract:

- Customer churn prediction is vital for improving customer retention strategies.
- This project employs logistic regression to predict customer churn using a real-world dataset.
- Steps include data preprocessing, model training, and evaluation, followed by actionable insights for business decision-making.

Problem Statement

- Customer churn is a critical issue for businesses, directly impacting revenue and growth.
- Identifying patterns in customer behavior that indicate a higher likelihood of churn is essential.
- The dataset includes customer information, and the goal is to predict whether a customer will churn (Yes) or not (No).

Proposed Solution

- **Loading the Dataset**: Import and explore the customer churn dataset.
  Data Pre-processing:
  Handle missing values.
  Encode categorical variables.
  Address any class imbalance.
- **Feature Splitting**: Divide the data into training and testing subsets.
- **Model Training**: Use logistic regression to train the model.
- **Evaluation**: Assess model performance using:
  - Accuracy
  - Classification Report
  - Confusion Matrix

Short Video

https://drive.google.com/file/d/1BIV7AoA1VfCcNAzE632XUe6Uhd4_VYlu/view?usp=sharing

Implementation

https://github.com/Raksh9a171/Final

Output

```
Class Distribution in Target Variable:
Churn_Yes
False    6
True     4
Name: count, dtype: int64

Accuracy: 1.0

Classification Report:
              precision    recall  f1-score   support

       False       1.00      1.00      1.00         1
        True       1.00      1.00      1.00         1

    accuracy                           1.00         2
   macro avg       1.00      1.00      1.00         2
weighted avg       1.00      1.00      1.00         2
```