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ANALYSIS AND AI-ML SCIKIT-LEARN PROJECT

# Customer Churn Analysis

## This project will lead to some scikit-learn for basic predictive modelling in future ML projects.

### ABOUT PROJECT

In this project, I'll share my experiences publicly with how to work with real world data, showing off the critical analysis skills and finally to enhance my portfolio which demonstrates the business value as business intelligence manager.

Also, the following objectives will be used to analyze customer churn rates and trends for related dataset.

- Structured Dataset
- Clear Business Value
- Simple to Sophisticated Scalability
- ML - Featured

**WHAT IS EXACTLY CUSTOMER CHURN IN REAL WORLD BUSINESS?**

Simply, customer churn refers to when customers stop doing business with a company or service. Depending on this, Customer Churn Rate, it’s essentially the rate at which customers leave over a given time period.

Churn is a critical business metric because :

1. It's typically more expensive to acquire new customers than to retain existing ones
2. Long-term customers often spend more and cost less to serve
3. High churn can indicate underlying problems with your product, service, or customer experience

**TRENDS AND INSIGHTS WITH PREDICTIVE ANALYSIS**

In this project, I would mostly be looking for patterns that help predict which customer’s behaviours that are likely to leave. For instance, I might discover that customers who call related customer services, for example, more than twice in a month are 3x more likely to cancel their service the following month.

Main objectives for customer churn analysis :

1. Identify at-risk customers before they leave
2. Understand why customers are leaving
3. Develop targeted retention strategies
4. Optimize their customer experience

**PROJECT WORK PLAN / GENERAL SCOPE**

1- **Data Collection** : This project will be created with Kaggle’s Telco Customer Churn dataset. Additionally, the dataset will be shared at the end of project documentation. (Index Section)
2- **Exploratory analysis** : Instead of a fully predictive type of analysis, I will also share customer demographics, service usage, and additional churn patterns if any.
3- **Visualization** : A dashboard will show the key churn factors
4- **Basic Prediction** : A simple model will be created to identify at-risk customers upon our analysis.

5- **Recommendations** : Finally, the project will develop business strategies to reduce customer churn.

**TOOLS / METHODS**

The following tools and methods will be used in this project.

- Python with pandas, matplotlib, and seaborn for analysis.
- SQL / PostgreSQL
- Excel or Tableau for visualization.
- Eventually scikit-learn for basic predictive modeling.
- AI Toolkit / Claude 3.7 Sonnet / DeepSeek R1
- Kaggle Public Datasets