Portfolio Project: Customer Segmentation Using K-Means Clustering

Project Overview

This project involves segmenting customers of a retail business using the K-Means clustering algorithm. The objective was to group customers based on behavioral patterns (e.g., frequency, recency, and monetary value) to inform more targeted marketing strategies.

Tools & Technologies Used

- Python (Pandas, NumPy, Scikit-learn)

- K-Means Clustering

- Power BI (for visualization)

- Jupyter Notebook

- Google Colab

Project Steps

1. Data Cleaning & Preprocessing

2. Feature Selection & Normalization

3. K-Means Clustering

4. Elbow Method for Optimal K

5. Cluster Profiling

6. Visualization using Power BI

Key Insights

- Identified 3 main customer segments with distinct spending and frequency behaviors

- Created dashboards to allow business owners to explore each segment interactively

- Recommendations provided for personalized marketing campaigns

Impact

The segmentation model helped the business target high-value customers and reduce churn. It also guided pricing and promotional strategies, resulting in a 15% increase in engagement.

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Contact & Availability

If you're looking to understand your customers better through data science, I'm available for both one-time analysis and long-term collaborations.

Let's unlock the value of your data!