Mall Customer Segmentation Project

1. Project Objective

Segment mall customers based on demographic and spending data to identify distinct customer groups and provide actionable business recommendations.

2. Business Problem

Malls have customers with different income levels, ages, and spending behavior. A single marketing campaign is not effective for all. The goal is to identify clusters of customers to target marketing effectively.

3. Dataset Description

- 200 customers
- Columns: CustomerID, Gender, Age, Annual Income (k$), Spending Score (1-100)
- Source: Public dataset link

4. Tools & Technologies

- Python 3.x
- pandas, numpy
- matplotlib, seaborn
- scikit-learn (KMeans)

5. Methodology

1. Load CSV data and clean columns
2. Encode categorical variables (Gender)
3. Select features: Gender, Age, Annual Income, Spending Score
4. Scale features using NumPy
5. Apply KMeans clustering
6. Evaluate clusters with Silhouette Score
7. Visualize clusters and interpret results

6. Business Recommendations

1. High Income & High Spending: Promote premium products and loyalty programs.
2. High Income & Low Spending: Incentivize engagement with personalized offers.
3. Middle Income & High Spending: Reward loyalty with bundles or VIP perks.

4. Young High-Spenders: Promote seasonal and trendier products.

5. Low Income & Low Spending: Offer discounts and seasonal campaigns.

7. Conclusion

K-Means clustering segmented mall customers into 5 distinct clusters. Each cluster shows different income and spending behaviors. These insights can be used to design targeted marketing strategies and maximize revenue.

Generated using Python