

Project Title: Customer Segmentation for Credit Card Customers

Dataset: Source: Customer Segmentation - Credit Cards

(<https://www.kaggle.com/code/des137/customer-segmentation-credit-cards>)

Objective: The goal of this project is to:

1. Explore and understand the dataset.
2. Identify the best number of clusters to group the customers.
3. Segment the customers into distinct clusters based on relevant features.
4. Analyze and interpret the characteristics of each customer segment.
5. Provide business insights and strategic recommendations based on the analysis.

Project Phases:

1. Data Exploration and Preprocessing

- Conduct a thorough analysis of the dataset to understand the structure and key features.
- Clean the data and prepare it for further analysis.
- Explore the distributions and relationships between variables.
- Highlight patterns or anomalies found during exploration.
- Derive initial insights from the data that could influence clustering decisions.

2. Determining Optimal Clusters

- Identify how many customer groups (clusters) make the most sense based on the data.
- Justify the chosen number of clusters clearly with evidence and reasoning.

3. Customer Segmentation

- Segment the dataset into the chosen number of customer groups.
- Assign customers to clusters and analyze their shared characteristics.
- Present a clear profile for each cluster (e.g., high spenders, low usage, loyal customers, etc.).

4. Visualization and Analysis

- Visualize the distribution and differences between clusters using charts and graphs.
- Provide a narrative that explains what each visualization reveals.
- For every chart or graph presented, accompany it with a business insight.

5. Business Insights and Recommendations

- Interpret the results from a business perspective.
- Provide actionable insights based on customer segmentation.
- Recommend strategies to target or support different customer groups effectively.

Expected Deliverables:

1. A well-documented report or presentation with:
 - Summary of findings
 - Cluster profiles
 - Key visualizations
 - Business insights and recommendations
2. Clear and structured explanation of customer segmentation results.

Optional for Advanced Students:

- Suggest enhancements or alternative approaches to the analysis.
- Consider developing a simple dashboard to present findings interactively.

Note to Students: Your analysis should go beyond the technical. Ensure that your insights have a clear business application and show understanding of customer behavior.