

Assignment: Conducting RFM Analysis with Your Chosen Dataset

Objective:

Your task is to find a suitable dataset and conduct a complete RFM (Recency, Frequency, Monetary) analysis. This assignment will help you understand customer behavior and segment customers based on their purchasing patterns. It's an essential skill for anyone looking to excel in data analysis, marketing, and customer relationship management. [Code Template](#) ➞

Reference Doc: <https://drlee.io/dive-into-customer-behavior-rfm-analysis-in-python-29e1179a2942> ➞

Requirements:

1. Find a Suitable Dataset:

- Look for a dataset that contains at least the following information:
 - Customer Identifier (e.g., Customer ID)
 - Transaction/Purchase Date
 - Transaction Value (e.g., Purchase Amount)
- Recommended sources for datasets include [Kaggle](#), [UCI Machine Learning Repository](#), or any other reputable data source.
- Ensure that the dataset is publicly available and free to use.

2. Data Preparation:

- Clean the dataset by handling missing values and ensuring correct data types.
- You may need to calculate the 'Total' transaction value if it's not directly available in the dataset.

3. RFM Analysis:

- **Recency (R):** Calculate how recently each customer made a purchase.
- **Frequency (F):** Determine how often each customer makes a purchase.
- **Monetary Value (M):** Compute the total amount each customer spends.
- Use Python (preferably in a Jupyter Notebook) for the analysis. Libraries like Pandas, NumPy, and Matplotlib will be helpful.

4. Customer Segmentation:

- Apply k-means clustering to segment customers based on their RFM values.
- Determine the optimal number of clusters.

5. Data Visualization:

- Visualize the RFM segments using scatter plots or other appropriate visualizations.
- Interpret the characteristics of each cluster.

6. Insights and Recommendations:

- Provide insights into customer behavior based on your analysis.
- Suggest marketing strategies for different customer segments.

7. Documentation and Presentation:

- Document your analysis process, code, and insights in a clear and understandable manner.
- Present your findings in a report or a presentation format.

Deliverables:

- A Jupyter / Colab Notebook containing the analysis with well-commented code.
- A report or presentation summarizing the findings and insights from your RFM analysis.

Evaluation Criteria:

- Completeness and correctness of the RFM analysis.
- Quality of the dataset chosen and the rationale behind the choice.
- Clarity and creativity in data visualization.
- Depth of insights and applicability of the recommendations.
- Overall presentation and documentation of the work.

Submission Guidelines:

- Submit your Jupyter / Colab Notebook along with your report or presentation.
- Ensure that any dataset used is properly cited.
- Share any references or resources used during your analysis.