**Business Requirements Document (BRD):**

* **Business Problem:** Lack of understanding of different customer profiles leading to untargeted marketing strategies.
* **Business Objectives:** To improve customer satisfaction and sales by understanding customer segments.
* **Functional Requirements:** Data analysis, clustering, and visualization.

1. **Data Analysis**

**Objective:** To analyze customer data to uncover patterns and trends that can inform segmentation.

**Tasks:** Conduct exploratory data analysis (EDA) to understand data distributions, correlations, and outliers.

**Output:** Insights into customer behaviors, preferences, and characteristics.

1. **Clustering**

**Objective:** Group customers into meaningful segments based on similarities in their attributes or behaviors.

**Tasks:** Apply clustering algorithms (e.g., K-means, hierarchical clustering) to partition customers into distinct groups.

**Output:** Segmented customer groups that can be used for targeted marketing strategies or personalized recommendations.

1. **Visualization**

**Objective:** Present segmentation results visually to facilitate understanding and decision-making.

**Tasks:** Create charts, graphs, and interactive visualizations to illustrate cluster characteristics and differences.

**Output:** Visual representations that highlight customer segments and their distinguishing features.

* **Non-functional Requirements:** Performance, scalability, and usability.

**Performance:** Ensure efficient data processing and analysis to handle large datasets within reasonable timeframes.

**Scalability**: Design systems capable of scaling with increased data volumes and user interactions without performance degradation.

**Usability:** Provide intuitive interfaces and clear visualizations that facilitate easy understanding and navigation for stakeholders and analysts alike.