

Industry Standard Documentation

Business Requirements Document (BRD):

Business Problem: Lack of understanding of different customer profiles leading to untargeted marketing strategies. This leads to poor customer satisfaction, inefficient resource utilisation as well as missed opportunities for sales growth.

Impact :

Low customer retention

Missed revenue opportunities from high value customers

Business Objectives :

To improve customer satisfaction thereby boost sale by gaining understanding of different customer segments.

Increase marketing efficiency and customer retention.

primary **Objective:** To understand customer preferences and optimize mall layout for improved customer experience.

Secondary Objectives: ☐ Increase sales through targeted marketing campaigns.

enhance customer satisfaction by offering personalized services.

Functional Requirements :

- Data Cleaning : Collect demographic data, purchasing behavior, and visit frequency.

Preprocess the customer's history data to prove useful for analysis

- Data Analysis:

Perform clustering to segment customers and predictive analytics to forecast trends.

Analyse trends in data to develop understanding of the customer base.

- Clustering :

Divide the customers into certain segments i.e. clusters by applying K-Means clustering.

Determine optimal number of clusters using elbow method and silhouette scores.

- Visualization : Present results through interactive dashboards and monthly reports

Create and present visuals of features and customer segments using matplotlib and seaborn

Present detailed report of findings, including insights, conclusions and recommendable actions.

Integration: Integrate with existing CRM systems and POS data for real-time updates....

Non-functional Requirements :

- Performance :

Ensure that the algorithm runs smoothly within a reasonable time frame and can handle the size of customer dataset

- Scalability:

Design the solution to accommodate future growth in data volume.

- Usability :

Create easy to understand visualizations ensuring that it can be interpreted easily.

Security:

Implement data encryption and access controls to protect customer information..