

Project 10: Market Basket Insights

Phase 1: Problem Definition and Design Thinking

In this part you will need to understand the problem statement and create a document on what have you understood and how will you proceed ahead with solving the problem. Please think on a design and present in form of a document.

Problem Definition: The problem is to perform market basket analysis on a provided dataset to unveil hidden patterns and associations between products. The goal is to understand customer purchasing behavior and identify potential cross-selling opportunities for a retail business. This project involves using association analysis techniques, such as Apriori algorithm, to find frequently co-occurring products and generate insights for business optimization.

Design Thinking:

1. **Data Source:** Choose a dataset containing transaction data, including lists of purchased products.
2. **Data Preprocessing:** Prepare the transaction data by transforming it into a suitable format for association analysis.
3. **Association Analysis:** Utilize the Apriori algorithm to identify frequent itemsets and generate association rules.
4. **Insights Generation:** Interpret the association rules to understand customer behavior and cross-selling opportunities.
5. **Visualization:** Create visualizations to present the discovered associations and insights.
6. **Business Recommendations:** Provide actionable recommendations for the retail business based on the insights