

****Project diary****

Project Diary: Market Basket Analysis

February 10, 2024: Project Kickoff

Today marks the beginning of our project on market basket analysis. Our goal is to delve into customer purchase behaviors at our retail store over the next two months. We aim to uncover patterns in the items customers buy together to optimize product placement and marketing strategies.

February 15, 2024: Data Collection

We've started collecting transaction data from our store's POS system. Each transaction includes details such as the items purchased, transaction timestamp, and customer ID (anonymized for privacy). We're ensuring data integrity and completeness to generate meaningful insights.

February 25, 2024: Data Preprocessing

After cleaning and preprocessing the data, we've organized it into a suitable format for analysis. This involved handling missing values, encoding categorical variables, and structuring the data into transactional format—essential for market basket analysis.

March 5, 2024: Exploratory Data Analysis (EDA)

Our EDA revealed interesting trends in customer purchasing behavior. We identified popular items, frequent item combinations, and peak shopping hours. These insights will guide our subsequent analysis and strategy formulation.

March 15, 2024: Market Basket Analysis Implementation

Using association rule mining techniques such as Apriori and FP-Growth, we've started mining frequent itemsets and association rules from the transaction data. These rules will help us identify which items are commonly purchased together and the strength of their associations.

March 25, 2024: Rule Evaluation and Interpretation

We've evaluated the generated association rules based on metrics like support, confidence, and lift. This step is crucial for filtering out meaningful rules that can drive actionable insights. We're interpreting the rules to understand the relationships between products and their implications for our business.

April 5, 2024: Strategy Formulation

Armed with valuable insights from our analysis, we're devising strategies to enhance customer experience and boost sales. This includes optimizing product placement, creating targeted marketing campaigns, and developing personalized recommendations for customers.

April 13, 2024: Project Conclusion

As we wrap up the project, we're documenting our findings, recommendations, and the implementation plan for stakeholders. Market basket analysis has provided invaluable insights into customer behavior, enabling us to make data-driven decisions that will positively impact our business's performance.