

MARKET BASKET ANALYSIS FOR RETAILERS

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HOOK STORY

Every morning, a supermarket manager noticed something curious — whenever customers bought bread, they almost always picked up milk too. At first, he thought it was just coincidence, but when he dug into months of transaction data, a pattern emerged: bread and milk were a perfect pair.

Curious, he decided to experiment — placing butter near the bread and milk section. Within a week, sales of butter skyrocketed! What seemed like a small observation turned into a powerful insight that boosted overall profits.

This wasn't a coincidence - it was Market Basket Analysis { MBA } in action. By analyzing purchase behaviors, Manager unlocked smarter product placements and irresistible bundles.



Market Basket Analysis

Market Basket Analysis [MBA] is a data mining technique used to identify relationships between items frequently purchased together. It helps businesses understand customer buying patterns by analyzing transaction data and uncovering associations between products

- **Association Rule Mining** - Extracts relationships between items
- **Apriori Algorithm** - Finds frequent itemsets based on minimum support and confidence.

Why MBA is Important ?

Key Techniques in MBA :

Support : Support measures item popularity. It's the percentage of transactions containing an item.

Formula : $\text{Support}(A) = (\text{Transactions with } A) / (\text{Total Transactions})$

Confidence : Confidence is the likelihood of buying Y given X.

Formula : $\text{Confidence } [X \rightarrow Y] = \text{Support}(X,Y) / \text{Support}(X)$.

Lift : Lift shows how much likely Y is bought with X.

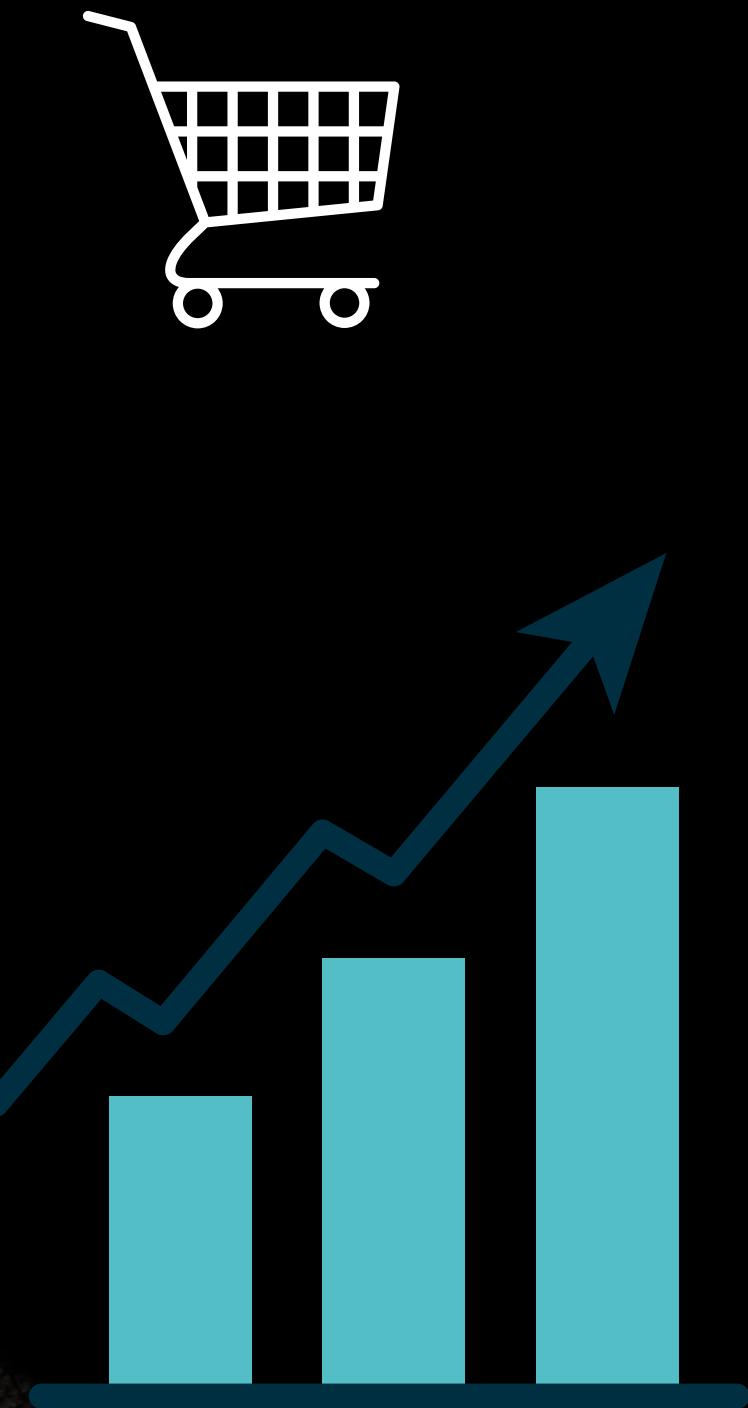
Formula : $\text{Lift } [X \rightarrow Y] = \text{Confidence}(X \rightarrow Y) / \text{Support}(Y)$.

Steps in Market Basket Analysis



Real World Application

1. Retail.
2. E-Commerce
3. Marketing
4. Netflix





8. Conclusion

- Market Basket Analysis helps discover hidden buying patterns.
- Apriori algorithm provides data-driven insights for marketing and layout decisions.
- The approach can be extended to online retail, recommendation systems, and loyalty programs.

References :

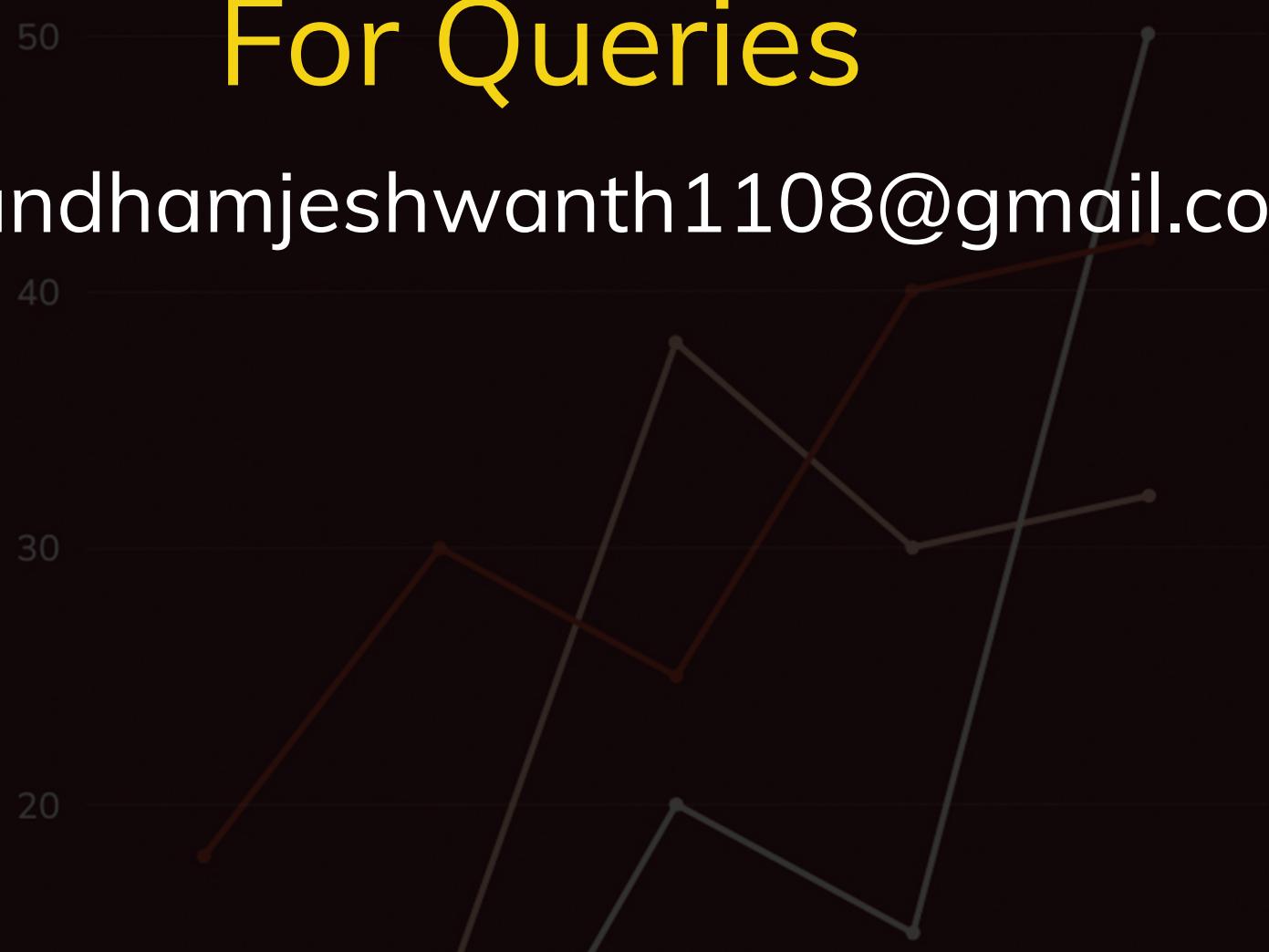
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THANK YOU

GROUND

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THE INDUSTRY'S HISTORY