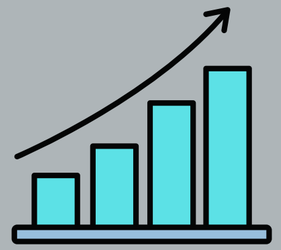
MARKET BASKET INSIGHT



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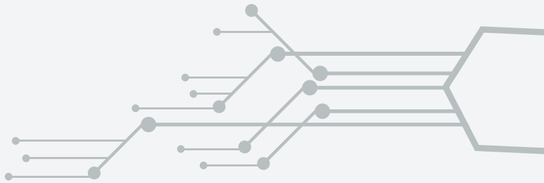
OBJECTIVE

The objective of this project is to analyze the user preferences and to predict the trend in the future purchase.

ABSTRACT

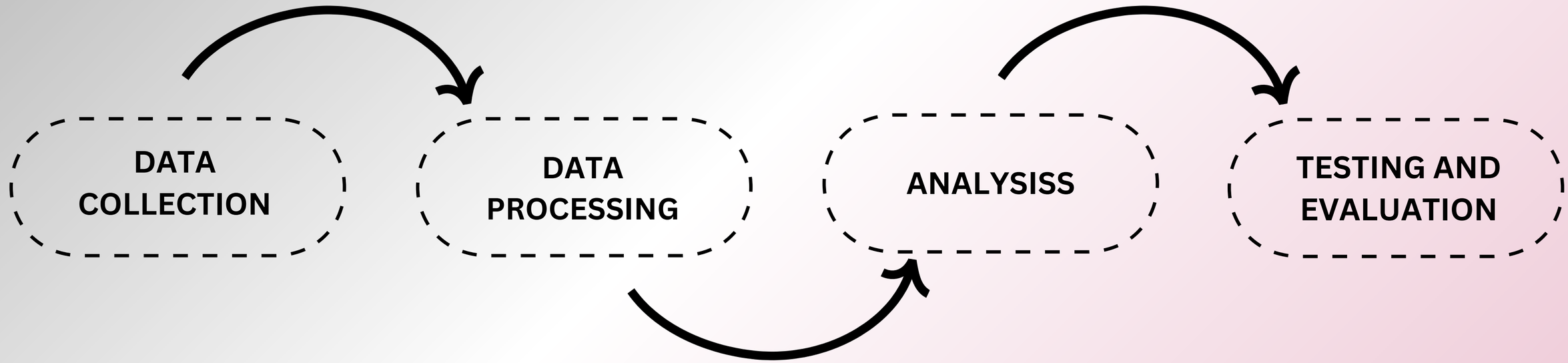
Market basket insight refers to the valuable information obtained from conducting market basket analysis.



These insights can include information about the product association, cross-selling opportunities, and customer preferences.

Market basket insights are the actionable results and statistic guidance that arise from the analysis.

WORK FLOW


DATA COLLECTION
DATA PROCESSING
ANALYSISS
TESTING AND EVALUATION

DATA COLLECTION

Gather transaction details from the retail or e-commerce system. The transaction details should include the list of all items purchased.

DATA PROCESSING

Clean and process the collected data. Remove duplicates, handle missing values, and ensure the data is in the suitable format.

ANALYSIS

The processed data is further analyzed using techniques association rule mining. Common algorithms used for this purpose include apriori and FP-growth .

TEST AND EVALUATION

Monitor and evaluate the implemented strategies on the sales and customer behavior.

IMPLEMENTATION

ASSOCIATION RULE

- **APRIORI ALGORITHM**

Apriori algorithm refers to the algorithm which is used to calculate the association rules between objects.

The association rule describes how two or more objects are related to one another.

- **Components of Apriori algorithm**
  - Support
  - Confidence
  - Lift

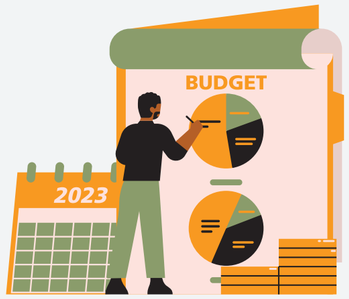
The Apriori Algorithm makes the given assumptions.

- All subsets of a frequent itemset must be frequent.
- The subsets of an infrequent item set must be infrequent.
- Fix a threshold support level. In our case, we have fixed it at 50 percent.

FOR EXAMPLE

The algorithm works in multiple iterations, progressively increasing the size of itemsets it considers. In each iteration, it generates candidate itemsets, prunes those that cannot meet the minimum support threshold, and counts the support of the remaining candidates by scanning the dataset. This process continues until no more frequent itemsets can be discovered.

APPLICATIONS



- RETAIL
- E-COMMERCE
- FINANCE
- MANUFACTURING
- TELECOMMUNICATION

CONCLUSION

In conclusion, this project has delved into the transformative impact of Artificial Intelligence in the field of Market Basket Analysis.

Through the integration of AI techniques such as the Apriori algorithm, machine learning models, and deep learning, we have witnessed how AI-driven approaches have revolutionized the way businesses understand customer behavior and optimize their operations.

Thank you