

SAGE University, iNurture, Indore

Institute of Computer Application

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Synopsis on Major Project (BCA VI Semester)

“ Market Basket Analysis”

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3. Topic : Market Basket Analysis

4. Team Members : One

5. Start Date : 10th January 2025 and Duration 3 Months

6. Aim & Objectives :

1. Customer Segmentation and Behaviour Analysis.
2. Sales and Revenue Analysis.
3. Product Performance Evaluation.

7. Introduction :

Market basket analysis is a data mining technique used by retailers to understand the purchasing habits of their customers. It aims to determine which products are frequently bought together and to identify associations between different items. Think of it like analyzing what items people put in their shopping baskets (physical or online).

8. Technical Details (process and working) : Data Collection and Preparation.

Transaction Data:

The core data source is the transactional database.

Every order placed on Blinkit is recorded, including:

1. Customer ID
2. Order ID
3. Rating
4. List of products purchased (item IDs) Quantity of each product.

Data Cleaning:

1. Data is cleaned to handle inconsistencies, missing values, and errors.
2. Product IDs are standardized.
3. Duplicate transactions are removed.

Real-time or Batch Processing:

Batch Processing: The analysis can be performed periodically (e.g., daily or weekly) to update the association rules.

Near Real-time Processing:

If the company has the need, and resources, some of the processing could be performed in a near real time fashion, so that suggestions can be very up to date.

9. Technology used : Power Bi and Microsoft Excel

10. Current status of development : Initial Stage

11. Advantages/ benefits :

Enhanced Customer Experience & Increased Sales: Personalized Recommendations:

By understanding which items are frequently bought together, Blinkit can provide highly relevant product recommendations to customers. This increases the likelihood of customers adding more items to their carts. "Frequently bought together" sections during browsing or checkout.

12. Limitations

Data Dependency and Quality:

Data Volume: Market basket analysis requires a large volume of transactional data to generate statistically significant and reliable results. Small datasets may lead to misleading or inaccurate associations.

Data Quality: Inaccurate or incomplete transaction data can skew the analysis and produce flawed results.

Data Skewness: If certain products are consistently purchased more than others, the analysis may be biased towards those products, overlooking less popular but potentially valuable associations.

13. Anything else want to mention

I would like to mention that the project is halfway done, next month the other half is done. We will add machine learning and write a research paper.

Signature:

Student

Date:

Place:

