ARTIFICIAL INTELLIGENCE

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❖ Market Basket Analysis :-

Retailers utilize market basket analysis, a data mining approach, to boost sales by better understanding client buying habits. Identifying product groups and items that are most likely to be bought together, includes evaluating big data sets, such as purchase history.

• Purpose of Market Basket Analysis

Finding items that buyers desire to buy is the major goal of market basket analysis. Market basket analysis may help sales and marketing teams develop more effective product placement, pricing, cross-sell, and up-sell tactics.

• Types Of Market Basket Analysis

Predictive Market Basket Analysis

This kind employs supervised learning methods like regression and classification. In essence, it seeks to imitate the market to examine what factors influence events. In essence, it determines cross-selling by taking into account things bought in a particular order.

● Differential Market Basket Analysis

For competition analysis, this kind of analysis is useful. To identify intriguing patterns in consumer behavior, it compares purchase histories across brands, periods, seasons, days of the week, etc.

How Does Market Basket Analysis Work?

The IF, THEN construct is used in association rule mining to replicate market basket analysis. When a customer buys bread, he is likely to also buy butter. Examples of association rules include the following: "Bread" -> "Butter"

Learn the following definitions to better understand market basket analysis:

- **Antecedent**

The entities or "itemsets" produced from the data are called antecedents. To put it another way, it's the IF element on the left. In the situation before, bread serves as the antecedent.

- **Consequent**

The term "consequent" refers to an item or group of items that are encountered along with the antecedent. The THEN part of the sentence is displayed on the right-hand side. The result in the aforementioned case is butter.

Metrics For Market Basket Analysis In Data Mining

You can put a lot of interesting controls on your association rules. These consist of

Support

Confidence

Lift

Consider the following scenario: A well-known e-commerce site handled 4000 transactions. They are trying to determine how many transactions, how much lift, trust, and support there is for the two things, a phone, and a phone cover, out of 5000. The phone has 500 transactions, the phone case has 800 transactions, and the two together have 1000 transactions.

- Benefits Of Market Basket Analysis

Gaining market share: Once a business reaches its peak growth, finding new ways to do so might be difficult. Market basket analysis may be used to integrate gentrification and demographic data to locate the sites of new businesses or geo-targeted marketing.

Campaigns and promotions: MBA is used to identify the goods that work well together as well as the products that serve as the cornerstones of their product range.

Behavior analysis.