MARKET BASKET INSIGHTS

Artificial Intelligence – PHASE-3

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CODING OF MARKET BASKET INSIGHTS

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Market basket analysis is a technique used in data mining and data analysis to identify patterns and relationships between items that are frequently purchased together. One of the most common algorithms for market basket analysis is the Apriori algorithm. Here's some basic Python code to perform market basket analysis using the Apriori algorithm:

# Import the required libraries

from mlxtend.frequent\_patterns import apriori

from mlxtend.frequent\_patterns import association\_rules

# Create a sample dataset (list of lists)

dataset = [['item1', 'item2', 'item3'],

['item2', 'item3', 'item4'],

['item1', 'item2'],

['item2', 'item5']]

# Convert the dataset into a one-hot encoded DataFrame

import pandas as pd

from mlxtend.preprocessing import TransactionEncoder

te = TransactionEncoder()

te\_ary = te.fit(dataset).transform(dataset)

df = pd.DataFrame(te\_ary, columns=te.columns\_)

# Find frequent item sets using Apriori

frequent\_itemsets = apriori(df, min\_support=0.5, use\_colnames=True)

# Find association rules

association\_rules = association\_rules(frequent\_itemsets, metric="lift", min\_threshold=1.0)

# Display the frequent item sets and association rules

print("Frequent Item Sets:")

print(frequent\_itemsets)

print("\nAssociation Rules:")

print(association\_rules)

This code uses the mlxtend library to perform Apriori-based market basket analysis. You can replace the sample dataset with your own data. The key steps include data preprocessing, finding frequent item sets, and discovering association rules based on a minimum support and lift threshold.