**NAANMUDHALVAN**

**AI\_Phase5 :**

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Document Of Project

pip install pandas mlxtend matplotlib

# Import necessary libraries

import pandas as pd

from mlxtend.frequent\_patterns import apriori

from mlxtend.frequent\_patterns import association\_rules

import matplotlib.pyplot as plt

# Sample transaction data

data = {

www.kaggle.com/datasets/aslanahmedov/market-basket-analysis

}

# Create a DataFrame from the transaction data

df = pd.DataFrame(data)

# Perform one-hot encoding to create the transaction-item matrix

basket = pd.get\_dummies(df, columns=['Item'], prefix='', prefix\_sep='')

# Group transactions by TransactionID and sum the one-hot encoded items

basket = basket.groupby('TransactionID').sum()

# Apply Apriori algorithm to find frequent itemsets

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

# Generate association rules

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

# Display the frequent itemsets and association rules

print("Frequent Itemsets:")

print(frequent\_itemsets)

print("\nAssociation Rules:")

print(rules)

# Visualize the association rules

plt.figure(figsize=(10, 5))

plt.scatter(rules['support'], rules['confidence'], alpha=0.5)

plt.xlabel('Support')

plt.ylabel('Confidence')

plt.title('Support vs. Confidence')

plt.show()