**Write a Python Programme to read the dataset (“Iris.csv”). dataset download from**

**(https://www.kaggle.com/datasets/saurabh00007/iriscsv ) and apply Apriori algorithm.**

pip install mlxtend

import pandas as pd

from mlxtend.frequent\_patterns import apriori, association\_rules

data = pd.read\_csv('C:/Users/HP/Downloads/Iris.csv')

data.drop(['Id', 'Species'], axis=1, inplace=True)

# Convert the data into a format suitable for the Apriori algorithm

data\_binarized = data.apply(lambda x: pd.Series(1, index=x[x > 0].index), axis=1).fillna(0)

frequent\_itemsets = apriori(data\_binarized, min\_support=0.1, use\_colnames=True)

rules = association\_rules(frequent\_itemsets, metric="lift", min\_threshold=1)

print(frequent\_itemsets)

print(rules)

Output:

support itemsets

0 1.0 (SepalLengthCm)

1 1.0 (SepalWidthCm)

2 1.0 (PetalLengthCm)

3 1.0 (PetalWidthCm)

4 1.0 (SepalLengthCm, SepalWidthCm)

5 1.0 (SepalLengthCm, PetalLengthCm)

6 1.0 (SepalLengthCm, PetalWidthCm)

7 1.0 (PetalLengthCm, SepalWidthCm)

8 1.0 (SepalWidthCm, PetalWidthCm)

9 1.0 (PetalLengthCm, PetalWidthCm

Write a Python Programme to apply Apriori algorithm on Groceries dataset. Dataset

can be downloaded from

(https://github.com/amankharwal/Website-data/blob/master/Groceries\_dataset.csv ). Also

display support and confidence for each rule.

Ans

import pandas as pd

from mlxtend.frequent\_patterns import apriori, association\_rules

url =

'https://raw.githubusercontent.com/amankharwal/Website-data/master/Groceries\_dataset.csv'

data = pd.read\_csv(url)

basket = data.groupby(['Member\_number',

'itemDescription'])['itemDescription'].count().unstack().reset\_index().fillna(0).set\_index('Member\_

number')

basket = basket.applymap(lambda x: 1 if x > 0 else 0)

frequent\_itemsets = apriori(basket, min\_support=0.01, use\_colnames=True)

rules = association\_rules(frequent\_itemsets, metric="confidence", min\_threshold=0.2)

print(rules[['antecedents', 'consequents', 'support', 'confidence']])

Output:

antecedents consequents \

0 (UHT-milk) (bottled water)

1 (UHT-milk) (other vegetables)

2 (UHT-milk) (pip fruit)

3 (UHT-milk) (rolls/buns)

4 (UHT-milk) (root vegetables)

... ... ...

5839 (rolls/buns, yogurt, other vegetables) (soda, whole milk)

5840 (soda, whole milk, yogurt) (rolls/buns, other vegetables)

5841 (soda, rolls/buns, whole milk) (yogurt, other vegetables)

5842 (soda, rolls/buns, yogurt) (whole milk, other vegetables)

5843 (rolls/buns, whole milk, yogurt) (soda, other vegetables)

support confidence

0 0.021293 0.271242

1 0.038994 0.496732

2 0.017188 0.218954

3 0.031042 0.395425

4 0.021036 0.267974

... ... ...

5839 0.013597 0.259804

5840 0.013597 0.250000

5841 0.013597 0.208661

5842 0.013597 0.321212

5843 0.013597 0.206226

[5844 rows x 4 columns