

CODE:

```
import numpy as np
from apyori import apriori
import pandas as pd

print("Apriori Algorithm")

data=pd.read_csv('Market_Basket_Optimisation.csv', header = None)

print("Data:")
print(data[:5])
print("Data Size : ",data.shape)

records=[]

for i in range(0,22):
    records.append([str(data.values[i,j]) for j in range(0,6)])

association_rules=apriori(records, min_support = 0.005, min_confidence = 0.5, min_lift = 3, min_length = 2)
association_result=list(association_rules)

print("Number of Association Rules Found : ",len(association_result))
print("First 10 Association Rules : ")
for i in range(0,10):
    print((i+1)," ",association_result[i].items)
```

OUTPUT:

```
Terminal File Edit View Search Terminal Help
(base) srushti@srushti-Inspiron-15-3567:~/BE Sem1/LP2/DMW3$ python aprioriAlgo.py
Apriori Algorithm
Data:
 0      1      2      3      4      ...      15      16      17      18      19
0  shrimp  almonds  avocado  vegetables mix  green grapes  ...  salmon  antioxydant juice  frozen smoothie  spinach  olive oil
1  burgers  meatballs  eggs  NaN  NaN  ...  NaN  NaN  NaN  NaN  NaN
2  chutney  NaN  NaN  NaN  NaN  ...  NaN  NaN  NaN  NaN  NaN
3  turkey  avocado  NaN  NaN  NaN  ...  NaN  NaN  NaN  NaN  NaN
4  mineral water  milk  energy bar  whole wheat rice  green tea  ...  NaN  NaN  NaN  NaN  NaN

[5 rows x 20 columns]
Data Size : (7501, 20)
Number of Association Rules Found : 399
First 10 Association Rules :
1 frozenset({'avocado', 'almonds'})
2 frozenset({'green grapes', 'almonds'})
3 frozenset({'shrimp', 'almonds'})
4 frozenset({'vegetables mix', 'almonds'})
5 frozenset({'whole wheat flour', 'almonds'})
6 frozenset({'avocado', 'green grapes'})
7 frozenset({'avocado', 'shrimp'})
8 frozenset({'avocado', 'vegetables mix'})
9 frozenset({'avocado', 'whole wheat flour'})
10 frozenset({'fresh tuna', 'black tea'})
(base) srushti@srushti-Inspiron-15-3567:~/BE Sem1/LP2/DMW3$
```

Apriori Algorithm

Data:

	0	1	2	3	4	...	15	16	17	18	19
0	shrimp	almonds	avocado	vegetables mix	green grapes	...	salmon	antioxydant juice	frozen smoothie	spinach	olive oil
1	burgers	meatballs	eggs	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN
2	chutney	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN
3	turkey	avocado	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN

[4 rows x 20 columns]

Data Size : (7501, 20)

Number of Association Rules Found : 399

First 10 Association Rules :

- 1 frozenset({'avocado', 'almonds'})
- 2 frozenset({'green grapes', 'almonds'})
- 3 frozenset({'shrimp', 'almonds'})
- 4 frozenset({'vegetables mix', 'almonds'})
- 5 frozenset({'whole weat flour', 'almonds'})
- 6 frozenset({'avocado', 'green grapes'})
- 7 frozenset({'avocado', 'shrimp'})
- 8 frozenset({'avocado', 'vegetables mix'})
- 9 frozenset({'avocado', 'whole weat flour'})
- 10 frozenset({'fresh tuna', 'black tea'})