Apriori algorithm

In [47]:
```
# installing package apyori
#pip install apyori
```

In [48]:
```
# importing necessary packages
import pandas as pd
from apyori import apriori
```

In [49]:
```
# Read data and Display
store_data = pd.read_csv('store_data.csv', header=None)

print("Rows and columns of the data :: ",store_data.shape)
display(store_data.head())
```

```
Rows and columns of the data ::  (7501, 20)
```

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
0	shrimp	almonds	avocado	vegetables mix	green grapes	whole weat flour	yams	cottage cheese	energy drink	tomato juice	low fat yogurt	green tea	honey	salad	mineral water	salmon	antioxydant juice	sn
1	burgers	meatballs	eggs	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
2	chutney	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
3	turkey	avocado	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
4	mineral water	milk	energy bar	whole wheat rice	green tea	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	

In [50]:

```
# Preprocessing on Data
#Here we need a data in form of list for Apriori Algorithm.
records = []
for i in range(0, 7501):
    records.append([str(store_data.values[i, j]) for j in range(0, 20) if str(store_data.values[i, j])!= 'nan'])

```

In [51]:

```
# for Apriori Algorithm
association_rules = apriori(records, min_support=0.0045, min_confidence=0.2,min_lift=3, min_length=2)
association_results = list(association_rules)
# printing number of relations derived
print("There are {} Relation derived.".format(len(association_results)))
```

```
There are 24 Relation derived.
```

In [52]:

```
# Post procesing of Association Rules Derived
# Printing Rules along with Support, Confidence and Lift
rno=1
for i in range(0, len(association_results)):
    r=list(association_results[i][0])[0] +" ---> "+list(association_results[i][0])[1]
    s=association_results[i][1]
    c=str(association_results[1][2][0]).split(",")[-2].split("=")[1]
    l=str(association_results[i][2][0]).split(",")[-1].split("=")[1].split(")")[0]
    print("\n====================================== RULE - ",rno, " ============================================")
    print("\nRULE          :: ", r,"\n")
    print("SUPPORT       :: ", s)
    print("CONFIDENCE    :: ", c)
    print("LIFT          :: ", l)
    rno+=1

```

```
====================================== RULE -  1  ============================================

RULE          ::  light cream ---> chicken

SUPPORT       ::  0.004532728969470737
CONFIDENCE    ::  0.3006993006993007
LIFT          ::  4.84395061728395

====================================== RULE -  2  ============================================

RULE          ::  mushroom cream sauce ---> escalope

SUPPORT       ::  0.005732568990801226
CONFIDENCE    ::  0.3006993006993007
LIFT          ::  3.790832696715049

====================================== RULE -  3  ============================================
```