In [36]:
```
import pandas as pd
```

In [3]:
```
market=pd.read_csv('Market_Basket_Optimisation.csv',header=None)
market.head()
```

Out[3]:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
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	mir w
1	burgers	meatballs	eggs	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	
3	turkey	avocado	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	

In [4]:
```
market.values[0,1]
```

Out[4]:
```
'almonds'
```

In [13]:
```
len(market)
```

Out[13]:
```
7501
```

In [37]:
```
product=[]
for i in range(0,len(market)):
 product.append([str(market.values[i,j]) for j in range(0,len(market.columns))])
```

In [16]:
```
product[0]
```

Out[16]:
```
['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',
 'frozen smoothie',
 'spinach',
 'olive oil']
```

In [38]:
```
!pip install apyori
```

```
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: apyori in c:\users\administrator\appdata\roaming\python\python39
\site-packages (1.1.2)
```

In [40]:
```
from apyori import apriori
```

In [22]:
```
(3*7)/len(market)
```

Out[22]:
```
0.0027996267164378083
```

In [41]:
```
rules=apriori(product,min_support=0.0027,min_confidence=0.2,min_lift=3,min_length=2,max_length=2
```

In [33]:
```
results=list(rules)
results
```

Out[33]:
```
[RelationRecord(items=frozenset({'chicken', 'extra dark chocolate'}), support=0.0027996267164378083, ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark chocolate'}), items_add=frozenset({'chicken'}), confidence=0.23333333333333334, lift=3.8894074074074076)]),
 RelationRecord(items=frozenset({'chicken', 'light cream'}), support=0.004532728969470737, ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'chicken'}), confidence=0.29059829059829057, lift=4.84395061728395)]),
 RelationRecord(items=frozenset({'escalope', 'mushroom cream sauce'}), support=0.005732568990801226, ordered_statistics=[OrderedStatistic(items_base=frozenset({'mushroom cream sauce'}), items_add=frozenset({'escalope'}), confidence=0.3006993006993007, lift=3.790832696715049)]),
 RelationRecord(items=frozenset({'pasta', 'escalope'}), support=0.005865884548726837, ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'escalope'}), confidence=0.3728813559322034, lift=4.700811850163794)]),
 RelationRecord(items=frozenset({'honey', 'fromage blanc'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fromage blanc'}), items_add=frozenset({'honey'}), confidence=0.2450980392156863, lift=5.164270764485569)]),
 RelationRecord(items=frozenset({'ground beef', 'herb & pepper'}), support=0.015997866951073192, ordered_statistics=[OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.3234501347708895, lift=3.2919938411349285)]),
 RelationRecord(items=frozenset({'ground beef', 'tomato sauce'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}), items_add=frozenset({'ground beef'}), confidence=0.3773584905660377, lift=3.840659481324083)]),
 RelationRecord(items=frozenset({'olive oil', 'light cream'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'olive oil'}), confidence=0.20512820512820515, lift=3.1147098515519573)]),
 RelationRecord(items=frozenset({'olive oil', 'whole wheat pasta'}), support=0.007998933475536596, ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'olive oil'}), confidence=0.2714932126696833, lift=4.122410097642296)]),
 RelationRecord(items=frozenset({'pasta', 'shrimp'}), support=0.005065991201173177, ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'shrimp'}), confidence=0.3220338983050847, lift=4.506672147735896)])]
```

In [34]:
```
results[0]
```

Out[34]:
```
RelationRecord(items=frozenset({'chicken', 'extra dark chocolate'}), support=0.0027996267164378083, ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark chocolate'}), items_add=frozenset({'chicken'}), confidence=0.23333333333333334, lift=3.8894074074074076)])
```

In [35]:
```
results[0][0]
```

Out[35]:
```
frozenset({'chicken', 'extra dark chocolate'})
```

In [ ]:
```

```