In [2]:

```python
#Roll No-33238
import numpy as np
import pandas as pd
from apyori import apriori
```

In [3]:

```python
My_Data=pd.read_csv('Market_Basket_Optimisation.csv',header=None)
```

In [4]:

```python
My_Data
```

Out[4]:

	0	1	2	3	4	5	6	7	8	9
0	shrimp	almonds	avocado	vegetables mix	green grapes	whole weat flour	yams	cottage cheese	energy drink	tomato juice
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
...	...	...	...	...	...	...	...	...	...	..
7496	butter	light mayo	fresh bread	NaN	NaN	NaN	NaN	NaN	NaN	NaN
7497	burgers	frozen vegetables	eggs	french fries	magazines	green tea	NaN	NaN	NaN	NaN
7498	chicken	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
7499	escalope	green tea	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
7500	eggs	frozen smoothie	yogurt cake	low fat yogurt	NaN	NaN	NaN	NaN	NaN	NaN

7501 rows × 20 columns

In [9]:

```python
records=[]
for i in range(0,7501):
    records.append([str(My_Data.values[i,j]) for j in range(0,20)])
```

In [10]:

```python
asso_rule=apriori(records, min_support=0.0045, min_confidence=0.2, min_lift=3, min_
asso_result=list(asso_rule)
```

```
print(len(asso_result))
```

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```
for i in range(0,len(asso_result)):
    print(asso_result[i][0])
```

```
frozenset({'light cream', 'chicken'})
frozenset({'escalope', 'mushroom cream sauce'})
frozenset({'escalope', 'pasta'})
frozenset({'ground beef', 'herb & pepper'})
frozenset({'ground beef', 'tomato sauce'})
frozenset({'olive oil', 'whole wheat pasta'})
frozenset({'shrimp', 'pasta'})
frozenset({'nan', 'light cream', 'chicken'})
frozenset({'shrimp', 'frozen vegetables', 'chocolate'})
frozenset({'ground beef', 'spaghetti', 'cooking oil'})
frozenset({'nan', 'escalope', 'mushroom cream sauce'})
frozenset({'nan', 'escalope', 'pasta'})
frozenset({'ground beef', 'frozen vegetables', 'spaghetti'})
frozenset({'olive oil', 'milk', 'frozen vegetables'})
frozenset({'mineral water', 'shrimp', 'frozen vegetables'})
frozenset({'olive oil', 'frozen vegetables', 'spaghetti'})
frozenset({'shrimp', 'frozen vegetables', 'spaghetti'})
frozenset({'tomatoes', 'frozen vegetables', 'spaghetti'})
frozenset({'grated cheese', 'ground beef', 'spaghetti'})
frozenset({'ground beef', 'mineral water', 'herb & pepper'})
frozenset({'ground beef', 'nan', 'herb & pepper'})
frozenset({'ground beef', 'spaghetti', 'herb & pepper'})
frozenset({'ground beef', 'milk', 'olive oil'})
frozenset({'ground beef', 'tomato sauce', 'nan'})
frozenset({'ground beef', 'shrimp', 'spaghetti'})
frozenset({'milk', 'olive oil', 'spaghetti'})
frozenset({'olive oil', 'soup', 'mineral water'})
frozenset({'nan', 'olive oil', 'whole wheat pasta'})
frozenset({'nan', 'shrimp', 'pasta'})
frozenset({'pancakes', 'olive oil', 'spaghetti'})
frozenset({'nan', 'shrimp', 'frozen vegetables', 'chocolate'})
frozenset({'ground beef', 'spaghetti', 'nan', 'cooking oil'})
frozenset({'ground beef', 'frozen vegetables', 'nan', 'spaghetti'})
frozenset({'mineral water', 'milk', 'frozen vegetables', 'spaghetti'})
frozenset({'olive oil', 'nan', 'milk', 'frozen vegetables'})
frozenset({'mineral water', 'nan', 'shrimp', 'frozen vegetables'})
frozenset({'olive oil', 'nan', 'frozen vegetables', 'spaghetti'})
frozenset({'nan', 'shrimp', 'frozen vegetables', 'spaghetti'})
frozenset({'tomatoes', 'nan', 'frozen vegetables', 'spaghetti'})
frozenset({'grated cheese', 'ground beef', 'nan', 'spaghetti'})
frozenset({'ground beef', 'mineral water', 'nan', 'herb & pepper'})
frozenset({'ground beef', 'spaghetti', 'nan', 'herb & pepper'})
frozenset({'ground beef', 'milk', 'olive oil', 'nan'})
frozenset({'ground beef', 'shrimp', 'nan', 'spaghetti'})
frozenset({'nan', 'milk', 'olive oil', 'spaghetti'})
frozenset({'olive oil', 'nan', 'soup', 'mineral water'})
frozenset({'nan', 'pancakes', 'olive oil', 'spaghetti'})
frozenset({'nan', 'spaghetti', 'milk', 'frozen vegetables', 'mineral w
ater'})
```

In [ ]: