```python
In [1]: import pandas as pd
        import numpy as np
```

```python
In [2]: df = pd.read_csv("D:\Summer Training Video\ML\market_basket.csv" , header = Nor
```

```python
In [3]: df.head()
```

Out[3]:

	0	1	2	3	4	5	6	7	8	9	10
0	shrimp	almonds	avocado	vegetables mix	green grapes	whole weat flour	yams	cottage cheese	energy drink	tomato juice	low fat yogurt	gr
1	burgers	meatballs	eggs	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	N
2	chutney	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	N
3	turkey	avocado	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	N
4	mineral water	milk	energy bar	whole wheat rice	green tea	NaN	NaN	NaN	NaN	NaN	NaN	N

```python
In [4]: df.shape
```

Out[4]: (7501, 20)

```python
In [5]: # pip install apyori
```

```python
In [6]: # Data Processing
        transactions = []
        for i in range(0,7501):
            transactions.append([str(df.values[i,j]) for j in range(0,20)])

        # Traninig the dataset
        from apyori import apriori
        rules = apriori(transactions ,
                    min_support = 0.003 ,      # (3 items * 7 days in week)/(Total R
                    min_confidence = 0.2 ,
                    min_left = 3 ,
                    min_length = 2)

        # Visualizing the results

        a = list(rules)
        result = [list(a[i][0]) for i in range(0 , len(a))]
```

```
In [7]:  a
```

```
Out[7]:  [RelationRecord(items=frozenset({'mineral water'}), support=0.2383682175709
         9053, ordered_statistics=[OrderedStatistic(items_base=frozenset(), items_ad
         d=frozenset({'mineral water'}), confidence=0.23836821757099053, lift=1.
         0)]),
          RelationRecord(items=frozenset({'nan'}), support=0.9998666844420744, order
         ed_statistics=[OrderedStatistic(items_base=frozenset(), items_add=frozenset
         ({'nan'}), confidence=0.9998666844420744, lift=1.0)]),
          RelationRecord(items=frozenset({'burgers', 'almonds'}), support=0.00519930
         6759098787, ordered_statistics=[OrderedStatistic(items_base=frozenset({'alm
         onds'}), items_add=frozenset({'burgers'}), confidence=0.25490196078431376,
         lift=2.923577382023146)]),
          RelationRecord(items=frozenset({'almonds', 'chocolate'}), support=0.005999
         200106652446, ordered_statistics=[OrderedStatistic(items_base=frozenset({'a
         lmonds'}), items_add=frozenset({'chocolate'}), confidence=0.294117647058823
         54, lift=1.7950988369310295)]),
          RelationRecord(items=frozenset({'almonds', 'eggs'}), support=0.00653246233
         8354886, ordered_statistics=[OrderedStatistic(items_base=frozenset({'almond
         s'}), items_add=frozenset({'eggs'}), confidence=0.3202614379084967, lift=1.
         7821076007059597)]),
```

```
In [9]:  result
```

```
Out[9]:  [['mineral water'],
          ['nan'],
          ['burgers', 'almonds'],
          ['almonds', 'chocolate'],
          ['almonds', 'eggs'],
          ['almonds', 'french fries'],
          ['green tea', 'almonds'],
          ['milk', 'almonds'],
          ['almonds', 'mineral water'],
          ['nan', 'almonds'],
          ['almonds', 'spaghetti'],
          ['nan', 'antioxydant juice'],
          ['nan', 'asparagus'],
          ['chocolate', 'avocado'],
          ['french fries', 'avocado'],
          ['milk', 'avocado'],
          ['mineral water', 'avocado'],
          ['nan', 'avocado'],
          ['spaghetti', 'avocado'],
```

```
In [ ]:
```