

## prac6

March 27, 2025

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

Requirement already satisfied: apyori in /usr/local/lib/python3.11/dist-packages (1.1.2)

```
[ ]: #import requires libraries
import numpy as np
import pandas as pd
from apyori import apriori
```

```
[ ]: #Load the dataset
store_data = pd.read_csv('Day1.csv',header=None)
```

```
[ ]: #have a look at the dataset
print(store_data)
```

	0	1	2	3	4	5
0	Wine	Chips	Bread	Butter	Milk	Apple
1	Wine	NaN	Bread	Butter	Milk	NaN
2	NaN	NaN	Bread	Butter	Milk	NaN
3	NaN	Chips	NaN	NaN	NaN	Apple
4	Wine	Chips	Bread	Butter	Milk	Apple
5	Wine	Chips	NaN	NaN	Milk	NaN
6	Wine	Chips	Bread	Butter	NaN	Apple
7	Wine	Chips	NaN	NaN	Milk	NaN
8	Wine	NaN	Bread	NaN	NaN	Apple
9	Wine	NaN	Bread	Butter	Milk	NaN
10	NaN	Chips	Bread	Butter	NaN	Apple
11	Wine	NaN	NaN	Butter	Milk	Apple
12	Wine	Chips	Bread	Butter	Milk	NaN
13	Wine	NaN	Bread	NaN	Milk	Apple
14	Wine	NaN	Bread	Butter	Milk	Apple
15	Wine	Chips	Bread	Butter	Milk	Apple
16	NaN	Chips	Bread	Butter	Milk	Apple
17	NaN	Chips	NaN	Butter	Milk	Apple
18	Wine	Chips	Bread	Butter	Milk	Apple
19	Wine	NaN	Bread	Butter	Milk	Apple

20	Wine	Chips	Bread	NaN	Milk	Apple
21	NaN	Chips	NaN	NaN	NaN	NaN

```
[ ]: #find the shape of the dataset
store_data.shape
```

```
[ ]: (22, 6)
```

### Convert the pandas dataframe into a list of lists

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

```
[ ]: records
```

```
[ ]: [['Wine', 'Chips', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'nan', 'Bread', 'Butter', 'Milk', 'nan'],
      ['nan', 'nan', 'Bread', 'Butter', 'Milk', 'nan'],
      ['nan', 'Chips', 'nan', 'nan', 'nan', 'Apple'],
      ['Wine', 'Chips', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'Chips', 'nan', 'nan', 'Milk', 'nan'],
      ['Wine', 'Chips', 'Bread', 'Butter', 'nan', 'Apple'],
      ['Wine', 'Chips', 'nan', 'nan', 'Milk', 'nan'],
      ['Wine', 'nan', 'Bread', 'nan', 'nan', 'Apple'],
      ['Wine', 'nan', 'Bread', 'Butter', 'Milk', 'nan'],
      ['nan', 'Chips', 'Bread', 'Butter', 'nan', 'Apple'],
      ['Wine', 'nan', 'nan', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'Chips', 'Bread', 'Butter', 'Milk', 'nan'],
      ['Wine', 'nan', 'Bread', 'nan', 'Milk', 'Apple'],
      ['Wine', 'nan', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'Chips', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['nan', 'Chips', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['nan', 'Chips', 'nan', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'Chips', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'nan', 'Bread', 'Butter', 'Milk', 'Apple'],
      ['Wine', 'Chips', 'Bread', 'nan', 'Milk', 'Apple'],
      ['nan', 'Chips', 'nan', 'nan', 'nan', 'nan']]
```

### Build the Apriori Model

```
[ ]: #Building the first apriori model
association_rules = apriori(records, min_support=0.50, min_confidence=0.7,
    ↪min_lift=1.2, min_length=2)
association_results = list(association_rules)
```

```
[ ]: #print the number of rules
print(len(association_results))
```

1

```
[ ]: #have a glance on the rule  
      print(association_results[0])
```

```
RelationRecord(items=frozenset({'Butter', 'Milk', 'Bread'}), support=0.5,  
ordered_statistics=[OrderedStatistic(items_base=frozenset({'Butter'}),  
items_add=frozenset({'Milk', 'Bread'}), confidence=0.7333333333333334,  
lift=1.241025641025641), OrderedStatistic(items_base=frozenset({'Milk',  
'Bread'}), items_add=frozenset({'Butter'}), confidence=0.8461538461538461,  
lift=1.241025641025641)])
```

**The support value for the first rule is 0.5.** The number is calculated by dividing the number of transactions containing 'Milk', 'Bread' and 'Butter' by the total number of transactions

```
[ ]:
```