

2020-08-25-102724

August 25, 2020

#Generating Frequent Itemsets

```
[13]: #Loading dataset
dataset = [['Milk', 'Onion', 'Nutmeg', 'Kidney Beans', 'Eggs', 'Yogurt'],
           ['Dill', 'Onion', 'Nutmeg', 'Kidney Beans', 'Eggs', 'Yogurt'],
           ['Milk', 'Apple', 'Kidney Beans', 'Eggs'],
           ['Milk', 'Unicorn', 'Corn', 'Kidney Beans', 'Yogurt'],
           ['Corn', 'Onion', 'Onion', 'Kidney Beans', 'Ice cream', 'Eggs']]

dataset
```

```
[13]: [['Milk', 'Onion', 'Nutmeg', 'Kidney Beans', 'Eggs', 'Yogurt'],
       ['Dill', 'Onion', 'Nutmeg', 'Kidney Beans', 'Eggs', 'Yogurt'],
       ['Milk', 'Apple', 'Kidney Beans', 'Eggs'],
       ['Milk', 'Unicorn', 'Corn', 'Kidney Beans', 'Yogurt'],
       ['Corn', 'Onion', 'Onion', 'Kidney Beans', 'Ice cream', 'Eggs']]
```

```
[14]: !pip install mlxtend
```

```
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: mlxtend in /usr/local/lib/python3.8/dist-packages
(0.17.2)
Requirement already satisfied: matplotlib>=3.0.0 in
/usr/local/lib/python3.8/dist-packages (from mlxtend) (3.3.1)
Requirement already satisfied: setuptools in /usr/local/lib/python3.8/dist-
packages (from mlxtend) (49.6.0)
Requirement already satisfied: scikit-learn>=0.20.3 in
/usr/local/lib/python3.8/dist-packages (from mlxtend) (0.23.2)
Requirement already satisfied: pandas>=0.24.2 in /usr/local/lib/python3.8/dist-
packages (from mlxtend) (1.1.0)
Requirement already satisfied: numpy>=1.16.2 in /usr/local/lib/python3.8/dist-
packages (from mlxtend) (1.18.5)
Requirement already satisfied: joblib>=0.13.2 in /usr/local/lib/python3.8/dist-
packages (from mlxtend) (0.16.0)
Requirement already satisfied: scipy>=1.2.1 in /usr/local/lib/python3.8/dist-
packages (from mlxtend) (1.4.1)
Requirement already satisfied: python-dateutil>=2.1 in
/usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (2.8.1)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/lib/python3/dist-
```

packages (from matplotlib>=3.0.0->mlxtend) (1.0.1)
Requirement already satisfied: certifi>=2020.06.20 in
/usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend)
(2020.6.20)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.3 in
/usr/local/lib/python3.8/dist-packages (from matplotlib>=3.0.0->mlxtend) (2.4.7)
Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.8/dist-
packages (from matplotlib>=3.0.0->mlxtend) (7.2.0)
Requirement already satisfied: cycler>=0.10 in /usr/lib/python3/dist-packages
(from matplotlib>=3.0.0->mlxtend) (0.10.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in
/usr/local/lib/python3.8/dist-packages (from scikit-learn>=0.20.3->mlxtend)
(2.0.0)
Requirement already satisfied: pytz>=2017.2 in /usr/lib/python3/dist-packages
(from pandas>=0.24.2->mlxtend) (2019.3)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.8/dist-
packages (from python-dateutil>=2.1->matplotlib>=3.0.0->mlxtend) (1.15.0)

```
[19]: #Encoding the transaction
import pandas as pd
from mlxtend.preprocessing import TransactionEncoder

te = TransactionEncoder()
te_ary = te.fit(dataset).transform(dataset)
df = pd.DataFrame(te_ary, columns=te.columns_)
df
```

```
[19]:   Apple  Corn  Dill  Eggs  Ice cream  Kidney Beans  Milk  Nutmeg  Onion  \
0  False  False  False  True      False              True   True   True   True
1  False  False   True  True      False              True  False   True   True
2   True  False  False  True      False              True   True  False  False
3  False   True  False  False     False              True   True  False  False
4  False   True  False  True       True              True  False  False   True

      Unicorn  Yogurt
0     False    True
1     False    True
2     False  False
3      True    True
4     False  False
```

```
[18]: #Applying fp-growth

from mlxtend.frequent_patterns import fpgrowth

fpgrowth(df, min_support=0.6)
```

```
[18]:      support  itemsets
      0      1.0      (5)
      1      0.8      (3)
      2      0.6     (10)
      3      0.6      (8)
      4      0.6      (6)
      5      0.8     (3, 5)
      6      0.6    (10, 5)
      7      0.6     (8, 3)
      8      0.6     (8, 5)
      9      0.6   (8, 3, 5)
     10      0.6     (5, 6)
```

```
[17]: from mlxtend.frequent_patterns import fpgrowth

      fpgrowth(df, min_support=0.6, use_colnames=True)
```

```
[17]:      support      itemsets
      0      1.0   (Kidney Beans)
      1      0.8      (Eggs)
      2      0.6   (Yogurt)
      3      0.6   (Onion)
      4      0.6   (Milk)
      5      0.8 (Kidney Beans, Eggs)
      6      0.6 (Kidney Beans, Yogurt)
      7      0.6   (Onion, Eggs)
      8      0.6 (Onion, Kidney Beans)
      9      0.6 (Onion, Kidney Beans, Eggs)
     10      0.6   (Milk, Kidney Beans)
```

```
[0]:
```