

# Phase 5

```
from google.colab import files
uploaded = files.upload()
import pandas as pd
from mlxtend.frequent_patterns import apriori
from mlxtend.frequent_patterns import association_rules
data = pd.read_csv('Assignment_1_data.csv', sep=';')
data.head()
data.fillna(0,inplace=True)
data.head()
transactions = []
basket = pd.pivot_table(data,index='BillNo',columns='Itemname',values='Quantity',
\
                        aggfunc='sum',fill_value=0)
basket.head()
def convert_into_binary(x):
    if x > 0:
        return 1
    else:
        return 0
basket_sets = basket.applymap(convert_into_binary)
frequent_itemsets = apriori(basket_sets, min_support=0.07, use_colnames=True)
frequent_itemsets
rules_mlxtend = association_rules(frequent_itemsets, metric="lift",
min_threshold=1)
rules_mlxtend.head()
rules_mlxtend[ (rules_mlxtend['lift'] >= 4) & (rules_mlxtend['confidence'] >= 0.8)
]
```