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import numpy as np

import pandas as pd

from mlxtend.frequent_patterns import apriori, association_rules

from mlxtend.preprocessing import TransactionEncoder


data = pd.read_csv('EX3.csv', names=['Equipments Used'], header=None)
data = list(data["Equipments Used"].apply(lambda x:x.split(',')))


te = TransactionEncoder()
te_data = te.fit(data).transform(data)
df = pd.DataFrame(te_data, columns=te.columns_)


frq_items = apriori(df, min_support=0.3, use_colnames=True)
print(frq_items)


rules = association_rules(frq_items, metric="confidence", min_threshold=0.5,
num_itemsets=len(frq_items))

rules = rules[['antecedents', 'consequents', 'support', 'confidence', 'lift']]
print(rules)
```