

23122004

May 17, 2024

```
[1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
[2]: pip install apyori
```

Requirement already satisfied: apyori in
c:\users\user\appdata\local\programs\python\python311\lib\site-packages
(1.1.2)Note: you may need to restart the kernel to use updated packages.

[notice] A new release of pip is available: 23.1.2 -> 24.0

[notice] To update, run: python.exe -m pip install --upgrade pip

```
[3]: from apyori import apriori
```

```
[4]: data = pd.read_csv("store_data.csv")
data.head()
```

```
[4]:
```

	shrimp	almonds	avocado	vegetables mix	green grapes	
0	burgers	meatballs	eggs	NaN	NaN	\
1	chutney	NaN	NaN	NaN	NaN	
2	turkey	avocado	NaN	NaN	NaN	
3	mineral water	milk	energy bar	whole wheat rice	green tea	
4	low fat yogurt	NaN	NaN	NaN	NaN	

	whole weat flour	yams	cottage cheese	energy drink	tomato juice	
0	NaN	NaN	NaN	NaN	NaN	\
1	NaN	NaN	NaN	NaN	NaN	
2	NaN	NaN	NaN	NaN	NaN	
3	NaN	NaN	NaN	NaN	NaN	
4	NaN	NaN	NaN	NaN	NaN	

	low fat yogurt	green tea	honey salad	mineral water	salmon	antioxydant juice	
0	NaN	NaN	NaN	NaN	NaN	NaN	\
1	NaN	NaN	NaN	NaN	NaN	NaN	
2	NaN	NaN	NaN	NaN	NaN	NaN	

3	NaN	NaN	NaN	NaN	NaN	NaN	NaN
4	NaN	NaN	NaN	NaN	NaN	NaN	NaN

	frozen smoothie	spinach	olive oil
0	NaN	NaN	NaN
1	NaN	NaN	NaN
2	NaN	NaN	NaN
3	NaN	NaN	NaN
4	NaN	NaN	NaN

```
[5]: data.shape
```

```
[5]: (7500, 20)
```

```
[6]: data.isnull().sum()
```

```
[6]: shrimp          0
     almonds        1754
     avocado        3112
     vegetables mix  4156
     green grapes    4972
     whole wheat flour 5637
     yams           6132
     cottage cheese  6520
     energy drink    6847
     tomato juice    7106
     low fat yogurt  7245
     green tea       7347
     honey           7414
     salad           7454
     mineral water   7476
     salmon          7493
     antioxydant juice 7497
     frozen smoothie 7497
     spinach         7498
     olive oil       7500
     dtype: int64
```

```
[7]: data.fillna(0, inplace = True)
```

```
[8]: data.head()
```

```
[8]:      shrimp  almonds  avocado  vegetables mix  green grapes
0  burgers  meatballs      eggs          0          0 \
1  chutney         0          0          0          0
2  turkey  avocado          0          0          0
3  mineral water      milk  energy bar  whole wheat rice  green tea
```

	whole	weat	flour	yams	cottage	cheese	energy	drink	tomato	juice	
0			0	0		0		0		0	\
1			0	0		0		0		0	
2			0	0		0		0		0	
3			0	0		0		0		0	
4			0	0		0		0		0	

	low fat yogurt	green tea	honey	salad	mineral water	salmon	antioxydant juice	
0	0	0	0	0	0	0	0	\
1	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	

	frozen	smoothie	spinach	olive	oil
0		0	0		0.0
1		0	0		0.0
2		0	0		0.0
3		0	0		0.0
4		0	0		0.0

```
[9]: # records = []
# for i in range(0, len(data)):
#     records.append([str(data.values[i, j]) for j in range(0,20) if str(data.
#         ↪ values[i, j]) != '0'])
records = data.replace('0', pd.NA).applymap(str).stack().groupby(level=0).
    ↪ apply(list).tolist()
```

[illegible]

```
'0',
'0',
'0',
'0',
'0.0']
```

```
[11]: records[1]
```

[illegible]

```
[12]: association_rules = apriori(records, min_support = 0.004, min_confidence = 0.2,
    min_lift = 2, min_length = 2)
association_rules
```

```
[12]: <generator object apriori at 0x000001FA85441A60>
```

```
[13]: result = list(association_rules)
      result
```

```
[13]: [RelationRecord(items=frozenset({'almonds', 'burgers'}), support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'almonds'}),
items_add=frozenset({'burgers'}), confidence=0.2565789473684211,
lift=2.9424191211974895)]),
RelationRecord(items=frozenset({'black tea', 'milk'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'black tea'}),
items_add=frozenset({'milk'}), confidence=0.2990654205607477,
lift=2.3076035537094732)])]
```

```

RelationRecord(items=frozenset({'french fries', 'body spray'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'body spray'}),
items_add=frozenset({'french fries'}), confidence=0.37209302325581395,
lift=2.1768312592968835)]),
RelationRecord(items=frozenset({'ham', 'burgers'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ham'}),
items_add=frozenset({'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467)]),
RelationRecord(items=frozenset({'cereals', 'milk'}),
support=0.007066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cereals'}),
items_add=frozenset({'milk'}), confidence=0.27461139896373055,
lift=2.118915115460884)]),
RelationRecord(items=frozenset({'light cream', 'chicken'}),
support=0.004533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}),
items_add=frozenset({'chicken'}), confidence=0.2905982905982906,
lift=4.843304843304844)]),
RelationRecord(items=frozenset({'tomato sauce', 'chocolate'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'chocolate'}), confidence=0.3584905660377358,
lift=2.1876967007998527)]),
RelationRecord(items=frozenset({'eggs', 'cider'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cider'}),
items_add=frozenset({'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725)]),
RelationRecord(items=frozenset({'escalope', 'mushroom cream sauce'}),
support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mushroom cream
sauce'}), items_add=frozenset({'escalope'}), confidence=0.30069930069930073,
lift=3.7903273197390845)]),
RelationRecord(items=frozenset({'escalope', 'pasta'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287)]),
RelationRecord(items=frozenset({'extra dark chocolate', 'mineral water'}),
support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark
chocolate'}), items_add=frozenset({'mineral water'}),
confidence=0.47777777777777775, lift=2.0052229061742213)]),
RelationRecord(items=frozenset({'fresh tuna', 'pancakes'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}),

```

```

items_add=frozenset({'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337]]),
  RelationRecord(items=frozenset({'frozen vegetables', 'parmesan cheese'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'parmesan cheese'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2751677852348993,
lift=2.8863753695968457)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'shrimp'}),
support=0.016666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2336448598130841,
lift=2.4508202078295533)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes'}),
support=0.016133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23586744639376217,
lift=2.4741340530814213)]),
  RelationRecord(items=frozenset({'grated cheese', 'ground beef'}),
support=0.011333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}),
items_add=frozenset({'ground beef'}), confidence=0.2162849872773537,
lift=2.201000548955431)]),
  RelationRecord(items=frozenset({'ground beef', 'herb & pepper'}),
support=0.016, ordered_statistics=[OrderedStatistic(items_base=frozenset({'herb
& pepper'}), items_add=frozenset({'ground beef'}),
confidence=0.3234501347708895, lift=3.2915549671393096)]),
  RelationRecord(items=frozenset({'ground beef', 'olive oil'}),
support=0.014133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'ground beef'}), confidence=0.21501014198782958,
lift=2.1880272251135984)]),
  RelationRecord(items=frozenset({'ground beef', 'pepper'}),
support=0.006533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.24623115577889448,
lift=2.505744461793363)]),
  RelationRecord(items=frozenset({'rice', 'ground beef'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'rice'}),
items_add=frozenset({'ground beef'}), confidence=0.23404255319148937,
lift=2.3817084788821847)]),
  RelationRecord(items=frozenset({'ground beef', 'salmon'}),
support=0.008933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'salmon'}),
items_add=frozenset({'ground beef'}), confidence=0.21069182389937105,
lift=2.144082332761578)]),
  RelationRecord(items=frozenset({'spaghetti', 'ground beef'}), support=0.0392,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}),

```

```

items_add=frozenset({'spaghetti'}), confidence=0.39891451831750335,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.225114854517611,
lift=2.2908567284695827))),
RelationRecord(items=frozenset({'tomato sauce', 'ground beef'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'ground beef'}), confidence=0.37735849056603776,
lift=3.840147461662528)]),
RelationRecord(items=frozenset({'light mayo', 'pancakes'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light mayo'}),
items_add=frozenset({'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193)]),
RelationRecord(items=frozenset({'meatballs', 'milk'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'meatballs'}),
items_add=frozenset({'milk'}), confidence=0.2611464968152866,
lift=2.0150192655500514)]),
RelationRecord(items=frozenset({'milk', 'olive oil'}),
support=0.017066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'milk'}), confidence=0.25963488843813387,
lift=2.0033556206646135)]),
RelationRecord(items=frozenset({'milk', 'soup'}), support=0.0152,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}),
items_add=frozenset({'milk'}), confidence=0.3007915567282322,
lift=2.320922505619076)]),
RelationRecord(items=frozenset({'milk', 'whole wheat pasta'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole wheat
pasta'}), items_add=frozenset({'milk'}), confidence=0.334841628959276,
lift=2.583654544438858)]),
RelationRecord(items=frozenset({'nonfat milk', 'mineral water'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'nonfat milk'}),
items_add=frozenset({'mineral water'}), confidence=0.48717948717948717,
lift=2.044681675347596)]),
RelationRecord(items=frozenset({'spaghetti', 'olive oil'}),
support=0.022933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'spaghetti'}), confidence=0.3488843813387424,
lift=2.0035473660341254)]),
RelationRecord(items=frozenset({'whole wheat pasta', 'olive oil'}),
support=0.008, ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole
wheat pasta'}), items_add=frozenset({'olive oil'}),
confidence=0.2714932126696833, lift=4.130221288078346)]),

```

```

    RelationRecord(items=frozenset({'pasta', 'shrimp'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151)]),
    RelationRecord(items=frozenset({'spaghetti', 'pepper'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'spaghetti'}), confidence=0.37185929648241206,
lift=2.1354860058331475)]),
    RelationRecord(items=frozenset({'spaghetti', 'red wine'}),
support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}),
items_add=frozenset({'spaghetti'}), confidence=0.36492890995260663,
lift=2.0956866957462097)]),
    RelationRecord(items=frozenset({'spaghetti', 'tomato sauce'}),
support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'spaghetti'}), confidence=0.44339622641509435,
lift=2.546302984772747)]),
    RelationRecord(items=frozenset({'0', 'almonds', 'burgers'}), support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'almonds'}),
items_add=frozenset({'0', 'burgers'}), confidence=0.2565789473684211,
lift=2.9424191211974895), OrderedStatistic(items_base=frozenset({'0',
'almonds'}), items_add=frozenset({'burgers'}), confidence=0.2582781456953642,
lift=2.9619053405431677)]),
    RelationRecord(items=frozenset({'0', 'black tea', 'milk'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'black tea'}),
items_add=frozenset({'0', 'milk'}), confidence=0.2897196261682243,
lift=2.237793199033658), OrderedStatistic(items_base=frozenset({'0', 'black
tea'}), items_add=frozenset({'milk'}), confidence=0.2924528301886793,
lift=2.2565804798509204)]),
    RelationRecord(items=frozenset({'0', 'french fries', 'body spray'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'body spray'}),
items_add=frozenset({'0', 'french fries'}), confidence=0.37209302325581395,
lift=2.178530581123032), OrderedStatistic(items_base=frozenset({'0', 'body
spray'}), items_add=frozenset({'french fries'}), confidence=0.37209302325581395,
lift=2.1768312592968835)]),
    RelationRecord(items=frozenset({'0', 'ham', 'burgers'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ham'}),
items_add=frozenset({'0', 'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467), OrderedStatistic(items_base=frozenset({'0', 'ham'}),
items_add=frozenset({'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467)]),
    RelationRecord(items=frozenset({'0', 'cereals', 'milk'}),

```



```

support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cereals'}),
items_add=frozenset({'0', 'milk'}), confidence=0.26943005181347146,
lift=2.081076610299728), OrderedStatistic(items_base=frozenset({'0',
'cereals'}), items_add=frozenset({'milk'}), confidence=0.27225130890052357,
lift=2.1007045439855214)]),
RelationRecord(items=frozenset({'0', 'light cream', 'chicken'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}),
items_add=frozenset({'0', 'chicken'}), confidence=0.2905982905982906,
lift=4.843304843304844), OrderedStatistic(items_base=frozenset({'0', 'light
cream'}), items_add=frozenset({'chicken'}), confidence=0.2905982905982906,
lift=4.843304843304844)]),
RelationRecord(items=frozenset({'0', 'tomato sauce', 'chocolate'}),
support=0.0050666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.3584905660377358,
lift=2.1894782127711876), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce'}), items_add=frozenset({'chocolate'}), confidence=0.3584905660377358,
lift=2.1876967007998527)]),
RelationRecord(items=frozenset({'0', 'eggs', 'cider'}),
support=0.0042666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cider'}),
items_add=frozenset({'0', 'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725), OrderedStatistic(items_base=frozenset({'0', 'cider'}),
items_add=frozenset({'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725)]),
RelationRecord(items=frozenset({'0', 'escalope', 'mushroom cream sauce'}),
support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mushroom cream
sauce'}), items_add=frozenset({'0', 'escalope'}),
confidence=0.30069930069930073, lift=3.7903273197390845),
OrderedStatistic(items_base=frozenset({'0', 'mushroom cream sauce'}),
items_add=frozenset({'escalope'}), confidence=0.30069930069930073,
lift=3.7903273197390845)]),
RelationRecord(items=frozenset({'0', 'escalope', 'pasta'}),
support=0.0058666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'0', 'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287), OrderedStatistic(items_base=frozenset({'0', 'pasta'}),
items_add=frozenset({'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287)]),
RelationRecord(items=frozenset({'0', 'extra dark chocolate', 'mineral water'}),
support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark
chocolate'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.47777777777777775, lift=2.0063456513624485),

```

```

OrderedStatistic(items_base=frozenset({'0', 'extra dark chocolate'}),
items_add=frozenset({'mineral water'}), confidence=0.47777777777777775,
lift=2.0052229061742213)),
RelationRecord(items=frozenset({'0', 'fresh tuna', 'pancakes'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337), OrderedStatistic(items_base=frozenset({'0', 'fresh
tuna'}), items_add=frozenset({'pancakes'}), confidence=0.23030303030303031,
lift=2.422542394491904))],
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'parmesan cheese'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'parmesan cheese'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2684563758389262,
lift=2.8199199142744344), OrderedStatistic(items_base=frozenset({'0', 'parmesan
cheese'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2702702702702703, lift=2.835002835002835))],
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp'}),
support=0.016666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2336448598130841,
lift=2.454252729129035), OrderedStatistic(items_base=frozenset({'0', 'shrimp'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2336448598130841,
lift=2.4508202078295533))],
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'tomatoes'}),
support=0.016133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.23586744639376217,
lift=2.4775992268252325), OrderedStatistic(items_base=frozenset({'0',
'tomatoes'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.23586744639376217, lift=2.4741340530814213))],
RelationRecord(items=frozenset({'0', 'grated cheese', 'ground beef'}),
support=0.011333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2162849872773537,
lift=2.201000548955431), OrderedStatistic(items_base=frozenset({'0', 'grated
cheese'}), items_add=frozenset({'ground beef'}), confidence=0.2162849872773537,
lift=2.201000548955431))],
RelationRecord(items=frozenset({'0', 'ground beef', 'herb & pepper'}),
support=0.016, ordered_statistics=[OrderedStatistic(items_base=frozenset({'herb
& pepper'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.3234501347708895, lift=3.2915549671393096),
OrderedStatistic(items_base=frozenset({'0', 'herb & pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.3234501347708895,
lift=3.2915549671393096))],
RelationRecord(items=frozenset({'0', 'ground beef', 'olive oil'}),
support=0.014133333333333333,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.21501014198782958,
lift=2.1880272251135984), OrderedStatistic(items_base=frozenset({'0', 'olive
oil'}), items_add=frozenset({'ground beef'}), confidence=0.2154471544715447,
lift=2.1924744349207397))],
RelationRecord(items=frozenset({'0', 'ground beef', 'pepper'}),
support=0.0065333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.24623115577889448,
lift=2.505744461793363), OrderedStatistic(items_base=frozenset({'0', 'pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.2474747474747475,
lift=2.5183997368529254))],
RelationRecord(items=frozenset({'0', 'ground beef', 'rice'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'rice'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.23404255319148937,
lift=2.3817084788821847), OrderedStatistic(items_base=frozenset({'0', 'rice'}),
items_add=frozenset({'ground beef'}), confidence=0.23404255319148937,
lift=2.3817084788821847))],
RelationRecord(items=frozenset({'0', 'ground beef', 'salmon'}),
support=0.008933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'salmon'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.21069182389937105,
lift=2.144082332761578), OrderedStatistic(items_base=frozenset({'0', 'salmon'}),
items_add=frozenset({'ground beef'}), confidence=0.2120253164556962,
lift=2.15765247410817))],
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef'}),
support=0.0392,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.39891451831750335,
lift=2.292612174238525), OrderedStatistic(items_base=frozenset({'spaghetti'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.225114854517611,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'0', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.39891451831750335,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'0',
'spaghetti'}), items_add=frozenset({'ground beef'}),
confidence=0.22528735632183908, lift=2.292612174238525))],
RelationRecord(items=frozenset({'0', 'tomato sauce', 'ground beef'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.37735849056603776,
lift=3.840147461662528), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce'}), items_add=frozenset({'ground beef'}), confidence=0.37735849056603776,
lift=3.840147461662528))],
RelationRecord(items=frozenset({'0', 'light mayo', 'pancakes'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light mayo'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.20098039215686275,

```

```

lift=2.114099496741193), OrderedStatistic(items_base=frozenset({'0', 'light
mayo'}), items_add=frozenset({'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193))),
RelationRecord(items=frozenset({'0', 'meatballs', 'milk'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'meatballs'}),
items_add=frozenset({'0', 'milk'}), confidence=0.2611464968152866,
lift=2.017094465617559), OrderedStatistic(items_base=frozenset({'0',
'meatballs'}), items_add=frozenset({'milk'}), confidence=0.2611464968152866,
lift=2.0150192655500514)]),
RelationRecord(items=frozenset({'0', 'milk', 'soup'}), support=0.0152,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}),
items_add=frozenset({'0', 'milk'}), confidence=0.3007915567282322,
lift=2.3233127450687348), OrderedStatistic(items_base=frozenset({'0', 'soup'}),
items_add=frozenset({'milk'}), confidence=0.3007915567282322,
lift=2.320922505619076)]),
RelationRecord(items=frozenset({'0', 'milk', 'whole wheat pasta'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole wheat
pasta'}), items_add=frozenset({'0', 'milk'}), confidence=0.334841628959276,
lift=2.586315362713254), OrderedStatistic(items_base=frozenset({'0', 'whole
wheat pasta'}), items_add=frozenset({'milk'}), confidence=0.334841628959276,
lift=2.583654544438858)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'nonfat milk'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'nonfat milk'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.48717948717948717,
lift=2.0458265139116203), OrderedStatistic(items_base=frozenset({'0', 'nonfat
milk'}), items_add=frozenset({'mineral water'}), confidence=0.48717948717948717,
lift=2.044681675347596)]),
RelationRecord(items=frozenset({'0', 'whole wheat pasta', 'olive oil'}),
support=0.008, ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole
wheat pasta'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.2714932126696833, lift=4.138616046793953),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat pasta'}),
items_add=frozenset({'olive oil'}), confidence=0.2714932126696833,
lift=4.130221288078346)]),
RelationRecord(items=frozenset({'0', 'pasta', 'shrimp'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'0', 'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151), OrderedStatistic(items_base=frozenset({'0', 'pasta'}),
items_add=frozenset({'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'pepper'}),
support=0.009733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),

```

```

items_add=frozenset({'0', 'spaghetti'}), confidence=0.3668341708542714,
lift=2.108242361231445), OrderedStatistic(items_base=frozenset({'0', 'pepper'}),
items_add=frozenset({'spaghetti'}), confidence=0.3686868686868687,
lift=2.1172676226275002))),
RelationRecord(items=frozenset({'0', 'red wine', 'spaghetti'}),
support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.36492890995260663,
lift=2.097292585934521), OrderedStatistic(items_base=frozenset({'0', 'red
wine'}), items_add=frozenset({'spaghetti'}), confidence=0.36492890995260663,
lift=2.0956866957462097)]),
RelationRecord(items=frozenset({'0', 'tomato sauce', 'spaghetti'}),
support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.44339622641509435,
lift=2.548254174799393), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce'}), items_add=frozenset({'spaghetti'}), confidence=0.44339622641509435,
lift=2.546302984772747)]),
RelationRecord(items=frozenset({'almonds', 'burgers', '0.0'}), support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'almonds'}),
items_add=frozenset({'burgers', '0.0'}), confidence=0.2565789473684211,
lift=2.9424191211974895), OrderedStatistic(items_base=frozenset({'almonds',
'0.0'}), items_add=frozenset({'burgers'}), confidence=0.2565789473684211,
lift=2.9424191211974895)]),
RelationRecord(items=frozenset({'black tea', 'milk', '0.0'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'black tea'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.2990654205607477,
lift=2.3076035537094732), OrderedStatistic(items_base=frozenset({'black tea',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.2990654205607477,
lift=2.3076035537094732)]),
RelationRecord(items=frozenset({'french fries', 'body spray', '0.0'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'body spray'}),
items_add=frozenset({'french fries', '0.0'}), confidence=0.37209302325581395,
lift=2.1768312592968835), OrderedStatistic(items_base=frozenset({'body spray',
'0.0'}), items_add=frozenset({'french fries'}), confidence=0.37209302325581395,
lift=2.1768312592968835)]),
RelationRecord(items=frozenset({'ham', 'burgers', '0.0'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ham'}),
items_add=frozenset({'burgers', '0.0'}), confidence=0.21105527638190955,
lift=2.420358674104467), OrderedStatistic(items_base=frozenset({'ham', '0.0'}),
items_add=frozenset({'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467)]),
RelationRecord(items=frozenset({'cereals', 'milk', '0.0'}),
support=0.007066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cereals'}),

```

```

items_add=frozenset({'milk', '0.0'}), confidence=0.27461139896373055,
lift=2.118915115460884), OrderedStatistic(items_base=frozenset({'cereals',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.27461139896373055,
lift=2.118915115460884))),
RelationRecord(items=frozenset({'light cream', 'chicken', '0.0'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}),
items_add=frozenset({'chicken', '0.0'}), confidence=0.2905982905982906,
lift=4.843304843304844), OrderedStatistic(items_base=frozenset({'light cream',
'0.0'}), items_add=frozenset({'chicken'}), confidence=0.2905982905982906,
lift=4.843304843304844)]),
RelationRecord(items=frozenset({'tomato sauce', 'chocolate', '0.0'}),
support=0.0050666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.3584905660377358,
lift=2.1876967007998527), OrderedStatistic(items_base=frozenset({'tomato sauce',
'0.0'}), items_add=frozenset({'chocolate'}), confidence=0.3584905660377358,
lift=2.1876967007998527)]),
RelationRecord(items=frozenset({'eggs', 'cider', '0.0'}),
support=0.0042666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cider'}),
items_add=frozenset({'eggs', '0.0'}), confidence=0.4050632911392405,
lift=2.2536904180595725), OrderedStatistic(items_base=frozenset({'cider',
'0.0'}), items_add=frozenset({'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725)]),
RelationRecord(items=frozenset({'escalope', 'mushroom cream sauce', '0.0'}),
support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mushroom cream
sauce'}), items_add=frozenset({'escalope', '0.0'}),
confidence=0.30069930069930073, lift=3.7903273197390845),
OrderedStatistic(items_base=frozenset({'mushroom cream sauce', '0.0'}),
items_add=frozenset({'escalope'}), confidence=0.30069930069930073,
lift=3.7903273197390845)]),
RelationRecord(items=frozenset({'escalope', 'pasta', '0.0'}),
support=0.0058666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'escalope', '0.0'}), confidence=0.37288135593220345,
lift=4.700185158809287), OrderedStatistic(items_base=frozenset({'pasta',
'0.0'}), items_add=frozenset({'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287)]),
RelationRecord(items=frozenset({'extra dark chocolate', 'mineral water',
'0.0'}), support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark
chocolate'}), items_add=frozenset({'mineral water', '0.0'}),
confidence=0.47777777777777775, lift=2.0052229061742213),
OrderedStatistic(items_base=frozenset({'extra dark chocolate', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.47777777777777775,

```

```

lift=2.0052229061742213))),
  RelationRecord(items=frozenset({'fresh tuna', 'pancakes', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}),
items_add=frozenset({'0.0', 'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337), OrderedStatistic(items_base=frozenset({'fresh tuna',
'0.0'}), items_add=frozenset({'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'parmesan cheese',
'0.0'}), support=0.005466666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'parmesan cheese'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.2751677852348993, lift=2.8863753695968457),
OrderedStatistic(items_base=frozenset({'parmesan cheese', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2751677852348993,
lift=2.8863753695968457)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', '0.0'}),
support=0.016666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.2336448598130841, lift=2.4508202078295533),
OrderedStatistic(items_base=frozenset({'shrimp', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2336448598130841,
lift=2.4508202078295533)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', '0.0'}),
support=0.016133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.23586744639376217, lift=2.4741340530814213),
OrderedStatistic(items_base=frozenset({'tomatoes', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23586744639376217,
lift=2.4741340530814213)]),
  RelationRecord(items=frozenset({'grated cheese', 'ground beef', '0.0'}),
support=0.011333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.2162849872773537,
lift=2.201000548955431), OrderedStatistic(items_base=frozenset({'grated cheese',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.2162849872773537,
lift=2.201000548955431)]),
  RelationRecord(items=frozenset({'ground beef', 'herb & pepper', '0.0'}),
support=0.016, ordered_statistics=[OrderedStatistic(items_base=frozenset({'herb
& pepper'}), items_add=frozenset({'ground beef', '0.0'}),
confidence=0.3234501347708895, lift=3.2915549671393096),
OrderedStatistic(items_base=frozenset({'herb & pepper', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.3234501347708895,
lift=3.2915549671393096)]),
  RelationRecord(items=frozenset({'ground beef', 'olive oil', '0.0'}),

```

```

support=0.014133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.21501014198782958,
lift=2.1880272251135984), OrderedStatistic(items_base=frozenset({'olive oil',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.21501014198782958,
lift=2.1880272251135984)],
RelationRecord(items=frozenset({'pepper', 'ground beef', '0.0'}),
support=0.0065333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.24623115577889448,
lift=2.505744461793363), OrderedStatistic(items_base=frozenset({'pepper',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.24623115577889448,
lift=2.505744461793363)]),
RelationRecord(items=frozenset({'rice', 'ground beef', '0.0'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'rice'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.23404255319148937,
lift=2.3817084788821847), OrderedStatistic(items_base=frozenset({'rice',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.23404255319148937,
lift=2.3817084788821847)]),
RelationRecord(items=frozenset({'ground beef', 'salmon', '0.0'}),
support=0.0089333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'salmon'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.21069182389937105,
lift=2.144082332761578), OrderedStatistic(items_base=frozenset({'salmon',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.21069182389937105,
lift=2.144082332761578)]),
RelationRecord(items=frozenset({'spaghetti', 'ground beef', '0.0'}),
support=0.0392,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.39891451831750335,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'spaghetti'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.225114854517611,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'ground beef',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.39891451831750335,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'spaghetti',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.225114854517611,
lift=2.2908567284695827)]),
RelationRecord(items=frozenset({'tomato sauce', 'ground beef', '0.0'}),
support=0.0053333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.37735849056603776,
lift=3.840147461662528), OrderedStatistic(items_base=frozenset({'tomato sauce',
'0.0'}), items_add=frozenset({'ground beef'}), confidence=0.37735849056603776,
lift=3.840147461662528)]),
RelationRecord(items=frozenset({'light mayo', 'pancakes', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light mayo'}),

```



```

items_add=frozenset({'0.0', 'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193), OrderedStatistic(items_base=frozenset({'light mayo',
'0.0'}), items_add=frozenset({'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193))),
RelationRecord(items=frozenset({'meatballs', 'milk', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'meatballs'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.2611464968152866,
lift=2.0150192655500514), OrderedStatistic(items_base=frozenset({'meatballs',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.2611464968152866,
lift=2.0150192655500514)]),
RelationRecord(items=frozenset({'milk', 'olive oil', '0.0'}),
support=0.017066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.25963488843813387,
lift=2.0033556206646135), OrderedStatistic(items_base=frozenset({'olive oil',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.25963488843813387,
lift=2.0033556206646135)]),
RelationRecord(items=frozenset({'milk', 'soup', '0.0'}), support=0.0152,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.3007915567282322,
lift=2.320922505619076), OrderedStatistic(items_base=frozenset({'soup', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.3007915567282322,
lift=2.320922505619076)]),
RelationRecord(items=frozenset({'milk', 'whole wheat pasta', '0.0'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole wheat
pasta'}), items_add=frozenset({'milk', '0.0'}), confidence=0.334841628959276,
lift=2.583654544438858), OrderedStatistic(items_base=frozenset({'whole wheat
pasta', '0.0'}), items_add=frozenset({'milk'}), confidence=0.334841628959276,
lift=2.583654544438858)]),
RelationRecord(items=frozenset({'nonfat milk', 'mineral water', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'nonfat milk'}),
items_add=frozenset({'mineral water', '0.0'}), confidence=0.48717948717948717,
lift=2.044681675347596), OrderedStatistic(items_base=frozenset({'nonfat milk',
'0.0'}), items_add=frozenset({'mineral water'}), confidence=0.48717948717948717,
lift=2.044681675347596)]),
RelationRecord(items=frozenset({'spaghetti', 'olive oil', '0.0'}),
support=0.022933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.3488843813387424,
lift=2.0035473660341254), OrderedStatistic(items_base=frozenset({'olive oil',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.3488843813387424,
lift=2.0035473660341254)]),
RelationRecord(items=frozenset({'whole wheat pasta', 'olive oil', '0.0'}),
support=0.008, ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole

```

```

wheat pasta'}), items_add=frozenset({'olive oil', '0.0'}),
confidence=0.2714932126696833, lift=4.130221288078346),
OrderedStatistic(items_base=frozenset({'whole wheat pasta', '0.0'}),
items_add=frozenset({'olive oil'}), confidence=0.2714932126696833,
lift=4.130221288078346))),
RelationRecord(items=frozenset({'pasta', 'shrimp', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'shrimp', '0.0'}), confidence=0.3220338983050848,
lift=4.514493901473151), OrderedStatistic(items_base=frozenset({'pasta',
'0.0'}), items_add=frozenset({'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151)]),
RelationRecord(items=frozenset({'spaghetti', 'pepper', '0.0'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.37185929648241206,
lift=2.1354860058331475), OrderedStatistic(items_base=frozenset({'pepper',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.37185929648241206,
lift=2.1354860058331475)]),
RelationRecord(items=frozenset({'spaghetti', 'red wine', '0.0'}),
support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.36492890995260663,
lift=2.0956866957462097), OrderedStatistic(items_base=frozenset({'red wine',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.36492890995260663,
lift=2.0956866957462097)]),
RelationRecord(items=frozenset({'spaghetti', 'tomato sauce', '0.0'}),
support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.44339622641509435,
lift=2.546302984772747), OrderedStatistic(items_base=frozenset({'tomato sauce',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.44339622641509435,
lift=2.546302984772747)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'burgers'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'milk'}), confidence=0.3203125,
lift=2.4715470679012346)]),
RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'burgers'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'spaghetti'}), confidence=0.375,
lift=2.153522205206738)]),
RelationRecord(items=frozenset({'french fries', 'eggs', 'burgers'}),
support=0.009066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'french fries',
'burgers'}), items_add=frozenset({'eggs'}), confidence=0.412121212121217,

```

```

lift=2.292959266253035), OrderedStatistic(items_base=frozenset({'eggs', 'french
fries'}), items_add=frozenset({'burgers'}), confidence=0.2490842490842491,
lift=2.8564707463790033))),
  RelationRecord(items=frozenset({'eggs', 'green tea', 'burgers'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'green
tea'}), items_add=frozenset({'burgers'}), confidence=0.23560209424083772,
lift=2.7018588789086895))),
  RelationRecord(items=frozenset({'eggs', 'ground beef', 'burgers'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'burgers'}), confidence=0.2,
lift=2.293577981651376))),
  RelationRecord(items=frozenset({'eggs', 'burgers', 'pancakes'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'eggs'}), confidence=0.3924050632911392,
lift=2.1832625924952107))),
  RelationRecord(items=frozenset({'french fries', 'milk', 'burgers'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'french
fries'}), items_add=frozenset({'burgers'}), confidence=0.2359550561797753,
lift=2.7059066075662304))),
  RelationRecord(items=frozenset({'spaghetti', 'french fries', 'burgers'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'french
fries'}), items_add=frozenset({'burgers'}), confidence=0.2028985507246377,
lift=2.3268182422550194))),
  RelationRecord(items=frozenset({'frozen vegetables', 'mineral water',
'burgers'}), support=0.0049333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.20218579234972675, lift=2.1208299896824485)]),
  RelationRecord(items=frozenset({'milk', 'ground beef', 'burgers'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'milk'}), confidence=0.34444444444444444,
lift=2.657750342935528), OrderedStatistic(items_base=frozenset({'milk',
'burgers'}), items_add=frozenset({'ground beef'}),
confidence=0.23134328358208955, lift=2.3542396565341543)]),
  RelationRecord(items=frozenset({'mineral water', 'ground beef', 'burgers'}),
support=0.0053333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'ground beef'}),
confidence=0.21857923497267756, lift=2.2243477100340323)]),
  RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'burgers'}),
support=0.0054666666666666665,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'spaghetti'}), confidence=0.4555555555555555,
lift=2.6161306789178154), OrderedStatistic(items_base=frozenset({'spaghetti',
'burgers'}), items_add=frozenset({'ground beef'}),
confidence=0.25465838509316774, lift=2.5915032404325076))],
RelationRecord(items=frozenset({'mineral water', 'milk', 'burgers'}),
support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'milk'}), confidence=0.28415300546448086,
lift=2.1925386224111176)]),
RelationRecord(items=frozenset({'spaghetti', 'milk', 'burgers'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'burgers'}),
items_add=frozenset({'spaghetti'}), confidence=0.35820895522388063,
lift=2.0570958378094217), OrderedStatistic(items_base=frozenset({'spaghetti',
'burgers'}), items_add=frozenset({'milk'}), confidence=0.298136645962733,
lift=2.300437083045779)]),
RelationRecord(items=frozenset({'spaghetti', 'burgers', 'pancakes'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'spaghetti'}), confidence=0.4177215189873418,
lift=2.3988601779518097), OrderedStatistic(items_base=frozenset({'spaghetti',
'burgers'}), items_add=frozenset({'pancakes'}), confidence=0.2049689440993789,
lift=2.156054811704547)]),
RelationRecord(items=frozenset({'spaghetti', 'cake', 'chocolate'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake',
'chocolate'}), items_add=frozenset({'spaghetti'}),
confidence=0.3823529411764706, lift=2.195748130799027)]),
RelationRecord(items=frozenset({'cake', 'mineral water', 'milk'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'milk'}),
items_add=frozenset({'mineral water'}), confidence=0.48,
lift=2.0145495243424736)]),
RelationRecord(items=frozenset({'spaghetti', 'cake', 'pancakes'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'pancakes'}),
items_add=frozenset({'spaghetti'}), confidence=0.34831460674157305,
lift=2.0002753067088803), OrderedStatistic(items_base=frozenset({'spaghetti',
'cake'}), items_add=frozenset({'pancakes'}), confidence=0.22794117647058823,
lift=2.39769820971867)]),
RelationRecord(items=frozenset({'green tea', 'chocolate', 'chicken'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'green tea'}), confidence=0.2727272727272727,
lift=2.066115702479339), OrderedStatistic(items_base=frozenset({'green tea',
'chicken'}), items_add=frozenset({'chocolate'}), confidence=0.3370786516853933,

```

```

lift=2.0570300143534985))),
  RelationRecord(items=frozenset({'milk', 'chocolate', 'chicken'}),
support=0.004533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'milk'}), confidence=0.30909090909090914,
lift=2.384960718294052)]),
  RelationRecord(items=frozenset({'mineral water', 'chocolate', 'chicken'}),
support=0.0076,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'mineral water'}),
confidence=0.5181818181818182, lift=2.174797781960625),
OrderedStatistic(items_base=frozenset({'mineral water', 'chicken'}),
items_add=frozenset({'chocolate'}), confidence=0.3333333333333333,
lift=2.034174125305126)]),
  RelationRecord(items=frozenset({'eggs', 'milk', 'chicken'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'chicken'}),
items_add=frozenset({'milk'}), confidence=0.28703703703703703,
lift=2.2147919524462734)]),
  RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'chicken'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'chicken'}), items_add=frozenset({'spaghetti'}), confidence=0.5070422535211268,
lift=2.911804671828829), OrderedStatistic(items_base=frozenset({'spaghetti',
'chicken'}), items_add=frozenset({'ground beef'}),
confidence=0.27906976744186046, lift=2.839923006531823)]),
  RelationRecord(items=frozenset({'mineral water', 'milk', 'chicken'}),
support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'milk'}), confidence=0.29239766081871343,
lift=2.2561547902678507)]),
  RelationRecord(items=frozenset({'spaghetti', 'milk', 'chicken'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'chicken'}),
items_add=frozenset({'spaghetti'}), confidence=0.36936936936936937,
lift=2.1211870369603907), OrderedStatistic(items_base=frozenset({'spaghetti',
'chicken'}), items_add=frozenset({'milk'}), confidence=0.3178294573643411,
lift=2.452387788305101)]),
  RelationRecord(items=frozenset({'mineral water', 'chicken', 'pancakes'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'pancakes'}), confidence=0.21052631578947364,
lift=2.214512438178194), OrderedStatistic(items_base=frozenset({'chicken',
'pancakes'}), items_add=frozenset({'mineral water'}),
confidence=0.5294117647058822, lift=2.2219296224365515)]),
  RelationRecord(items=frozenset({'cookies', 'chocolate', 'french fries'}),
support=0.004,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'cookies',
'chocolate'}), items_add=frozenset({'french fries'}),
confidence=0.38461538461538464, lift=2.2500900036001443)]),
RelationRecord(items=frozenset({'eggs', 'cooking oil', 'chocolate'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'chocolate'}), confidence=0.3863636363636364,
lift=2.3577927361491238)]),
RelationRecord(items=frozenset({'cooking oil', 'chocolate', 'milk'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cooking oil',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.3235294117647059,
lift=2.4963689179375455), OrderedStatistic(items_base=frozenset({'cooking oil',
'milk'}), items_add=frozenset({'chocolate'}), confidence=0.38372093023255816,
lift=2.34166556285125)]),
RelationRecord(items=frozenset({'eggs', 'milk', 'chocolate'}), support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.27710843373493976,
lift=2.1381823590658935)]),
RelationRecord(items=frozenset({'eggs', 'chocolate', 'olive oil'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'chocolate'}), confidence=0.3333333333333333,
lift=2.034174125305126)]),
RelationRecord(items=frozenset({'escalope', 'mineral water', 'chocolate'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope', 'mineral
water'}), items_add=frozenset({'chocolate'}), confidence=0.328125,
lift=2.002390154597234)]),
RelationRecord(items=frozenset({'frozen smoothie', 'milk', 'chocolate'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.2767857142857143,
lift=2.1356922398589067)]),
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'ground
beef'}), support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'ground beef'}), confidence=0.25,
lift=2.5440976933514245), OrderedStatistic(items_base=frozenset({'chocolate',
'ground beef'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2485549132947977, lift=2.6072193702251507),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}),
items_add=frozenset({'chocolate'}), confidence=0.3385826771653543,
lift=2.0662083634989075)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'chocolate'}),
support=0.008,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',

```

```

'chocolate'}), items_add=frozenset({'milk'}), confidence=0.3488372093023256,
lift=2.691645133505599), OrderedStatistic(items_base=frozenset({'milk',
'chocolate'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24896265560165975, lift=2.6114963874299972),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}),
items_add=frozenset({'chocolate'}), confidence=0.33898305084745767,
lift=2.068651652852671))),
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'olive
oil'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24390243902439024, lift=2.558417192563534),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}),
items_add=frozenset({'chocolate'}), confidence=0.3529411764705882,
lift=2.153831426793663)]),
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'chocolate'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'shrimp'}), confidence=0.23255813953488372,
lift=3.260160834601174), OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.29629629629629634, lift=3.1080031080031083)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables',
'chocolate'}), support=0.007866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.20068027210884354, lift=2.1050378193235333)]),
RelationRecord(items=frozenset({'herb & pepper', 'chocolate', 'ground beef'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'herb &
pepper'}), items_add=frozenset({'ground beef'}), confidence=0.4411764705882353,
lift=4.489584164737808)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'ground beef'}),
support=0.006133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'milk'}), confidence=0.26589595375722547,
lift=2.051666309855135)]),
RelationRecord(items=frozenset({'mineral water', 'chocolate', 'ground beef'}),
support=0.010933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'ground beef'}),
confidence=0.20759493670886076, lift=2.1125671985297907)]),
RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'ground beef'}),
support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.3988439306358382,
lift=2.290451362763236), OrderedStatistic(items_base=frozenset({'spaghetti',

```

```

'chocolate'}), items_add=frozenset({'ground beef'}),
confidence=0.23469387755102042, lift=2.388336610085011)]),
  RelationRecord(items=frozenset({'mineral water', 'milk', 'chocolate'}),
support=0.014,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.2658227848101266,
lift=2.0511017346460387)]),
  RelationRecord(items=frozenset({'milk', 'chocolate', 'olive oil'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'milk'}), confidence=0.31707317073170727,
lift=2.4465522433002107)]),
  RelationRecord(items=frozenset({'shrimp', 'milk', 'chocolate'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.3037037037037037,
lift=2.343392775491541)]),
  RelationRecord(items=frozenset({'milk', 'chocolate', 'soup'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'milk'}), confidence=0.39473684210526316,
lift=3.045808966861599)]),
  RelationRecord(items=frozenset({'spaghetti', 'milk', 'chocolate'}),
support=0.010933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'milk'}), confidence=0.2789115646258503,
lift=2.15209540606366)]),
  RelationRecord(items=frozenset({'mineral water', 'chocolate', 'olive oil'}),
support=0.008266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.5040650406504065,
lift=2.115549974749887)]),
  RelationRecord(items=frozenset({'mineral water', 'chocolate', 'soup'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.5526315789473685,
lift=2.3193826760521903)]),
  RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'olive oil'}),
support=0.007066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.4308943089430894,
lift=2.4745078997497476)]),
  RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'salmon'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'salmon'}), items_add=frozenset({'spaghetti'}), confidence=0.375,
lift=2.153522205206738)]),
  RelationRecord(items=frozenset({'spaghetti', 'shrimp', 'chocolate'}),

```



```

support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'spaghetti'}),
confidence=0.3555555555555556, lift=2.0418580908626853)]),
RelationRecord(items=frozenset({'spaghetti', 'tomatoes', 'chocolate'}),
support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes',
'chocolate'}), items_add=frozenset({'spaghetti'}),
confidence=0.35238095238095235, lift=2.0236272150514107)]),
RelationRecord(items=frozenset({'cookies', 'green tea', 'french fries'}),
support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cookies', 'french
fries'}), items_add=frozenset({'green tea'}), confidence=0.35000000000000003,
lift=2.651515151515152), OrderedStatistic(items_base=frozenset({'cookies',
'green tea'}), items_add=frozenset({'french fries'}),
confidence=0.3888888888888889, lift=2.2750910036401457)]),
RelationRecord(items=frozenset({'eggs', 'cooking oil', 'milk'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'milk'}), confidence=0.34090909090909094,
lift=2.6304713804713806)]),
RelationRecord(items=frozenset({'mineral water', 'eggs', 'cooking oil'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'mineral water'}), confidence=0.5454545454545455,
lift=2.2892608231164475)]),
RelationRecord(items=frozenset({'spaghetti', 'eggs', 'cooking oil'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.3522727272727273,
lift=2.0230057079214814)]),
RelationRecord(items=frozenset({'spaghetti', 'cooking oil', 'ground beef'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cooking oil',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.5714285714285714, lift=3.281557646029315),
OrderedStatistic(items_base=frozenset({'spaghetti', 'cooking oil'}),
items_add=frozenset({'ground beef'}), confidence=0.30252100840336127,
lift=3.0785719986773534)]),
RelationRecord(items=frozenset({'mineral water', 'cooking oil', 'pancakes'}),
support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'cooking oil'}), items_add=frozenset({'pancakes'}),
confidence=0.2317880794701987, lift=2.4381635287889063),
OrderedStatistic(items_base=frozenset({'cooking oil', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.5932203389830509,
lift=2.4897328161012213)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'cooking oil'}),

```

```

support=0.0076,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'cooking oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.37748344370860926, lift=2.1677839416650606),
OrderedStatistic(items_base=frozenset({'spaghetti', 'cooking oil'}),
items_add=frozenset({'mineral water'}), confidence=0.4789915966386554,
lift=2.0103172774425944)]),
RelationRecord(items=frozenset({'frozen vegetables', 'eggs', 'ground beef'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'eggs'}), items_add=frozenset({'ground beef'}), confidence=0.20245398773006135,
lift=2.060250892775387), OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'frozen vegetables'}), confidence=0.22,
lift=2.3076923076923075)]),
RelationRecord(items=frozenset({'frozen vegetables', 'eggs', 'milk'}),
support=0.007333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'eggs'}), items_add=frozenset({'milk'}), confidence=0.3374233128834356,
lift=2.6035749450882375), OrderedStatistic(items_base=frozenset({'eggs',
'milk'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.23809523809523808, lift=2.4975024975024973)]),
RelationRecord(items=frozenset({'mineral water', 'eggs', 'grated cheese'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'grated
cheese'}), items_add=frozenset({'mineral water'}),
confidence=0.4852941176470588, lift=2.036768820566839)]),
RelationRecord(items=frozenset({'spaghetti', 'eggs', 'grated cheese'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'grated
cheese'}), items_add=frozenset({'spaghetti'}), confidence=0.47058823529411764,
lift=2.7024592379064947)]),
RelationRecord(items=frozenset({'eggs', 'ground beef', 'herb & pepper'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'herb & pepper'}), confidence=0.20666666666666667,
lift=4.177897574123989), OrderedStatistic(items_base=frozenset({'eggs', 'herb &
pepper'}), items_add=frozenset({'ground beef'}), confidence=0.32978723404255317,
lift=3.3560437656976236)]),
RelationRecord(items=frozenset({'eggs', 'milk', 'ground beef'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'milk'}), confidence=0.29333333333333333,
lift=2.263374485596708)]),
RelationRecord(items=frozenset({'mineral water', 'eggs', 'ground beef'}),
support=0.010133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'mineral water'}), confidence=0.5066666666666666,

```

```

lift=2.1264689423614995)]),
  RelationRecord(items=frozenset({'spaghetti', 'eggs', 'ground beef'}),
support=0.008933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.44666666666666666,
lift=2.565084226646248), OrderedStatistic(items_base=frozenset({'spaghetti',
'eggs'}), items_add=frozenset({'ground beef'}), confidence=0.24452554744525545,
lift=2.488387524883875)]),
  RelationRecord(items=frozenset({'spaghetti', 'eggs', 'herb & pepper'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'herb &
pepper'}), items_add=frozenset({'spaghetti'}), confidence=0.38297872340425526,
lift=2.1993418265941154)]),
  RelationRecord(items=frozenset({'eggs', 'milk', 'shrimp'}),
support=0.0042666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'shrimp'}),
items_add=frozenset({'milk'}), confidence=0.30188679245283023,
lift=2.329373398555789)]),
  RelationRecord(items=frozenset({'mineral water', 'eggs', 'olive oil'}),
support=0.0058666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.4888888888888889,
lift=2.0518559970154824)]),
  RelationRecord(items=frozenset({'mineral water', 'eggs', 'soup'}),
support=0.0049333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'soup'}),
items_add=frozenset({'mineral water'}), confidence=0.5441176470588235,
lift=2.2836498897264557)]),
  RelationRecord(items=frozenset({'spaghetti', 'eggs', 'olive oil'}),
support=0.0050666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.42222222222222217,
lift=2.4247064828994382)]),
  RelationRecord(items=frozenset({'escalope', 'mineral water', 'milk'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope', 'milk'}),
items_add=frozenset({'mineral water'}), confidence=0.5172413793103449,
lift=2.1708507805414587)]),
  RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'french fries'}),
support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'french fries'}), items_add=frozenset({'milk'}), confidence=0.30069930069930073,
lift=2.3202106535439873), OrderedStatistic(items_base=frozenset({'milk', 'french
fries'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24157303370786518, lift=2.533982871061523)]),
  RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'french fries'}),
support=0.0056,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'french fries'}), items_add=frozenset({'spaghetti'}),
confidence=0.40384615384615385, lift=2.31917775945341),
OrderedStatistic(items_base=frozenset({'spaghetti', 'french fries'}),
items_add=frozenset({'ground beef'}), confidence=0.2028985507246377,
lift=2.064774939531591)]),
RelationRecord(items=frozenset({'spaghetti', 'french fries', 'pancakes'}),
support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'french
fries'}), items_add=frozenset({'pancakes'}), confidence=0.20772946859903382,
lift=2.1850925869463587)]),
RelationRecord(items=frozenset({'mineral water', 'milk', 'fresh bread'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'fresh bread'}), items_add=frozenset({'milk'}), confidence=0.3,
lift=2.314814814814815)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'frozen
smoothie'}), support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'frozen smoothie'}), items_add=frozenset({'spaghetti'}),
confidence=0.4133333333333333, lift=2.3736600306278715),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen smoothie'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.26495726495726496,
lift=2.7792720100412405)]),
RelationRecord(items=frozenset({'mineral water', 'frozen smoothie', 'milk'}),
support=0.0061333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'frozen smoothie'}), items_add=frozenset({'milk'}),
confidence=0.304635761589404, lift=2.350584580165154)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen smoothie', 'milk'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie',
'milk'}), items_add=frozenset({'spaghetti'}), confidence=0.3925233644859813,
lift=2.2541540839547163), OrderedStatistic(items_base=frozenset({'spaghetti',
'frozen smoothie'}), items_add=frozenset({'milk'}),
confidence=0.358974358974359, lift=2.769863880974992)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'ground beef'}),
support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'milk'}), confidence=0.3385826771653543,
lift=2.6125206571400796), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'milk'}), items_add=frozenset({'ground beef'}),
confidence=0.24293785310734464, lift=2.472230526872571),
OrderedStatistic(items_base=frozenset({'milk', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2606060606060606,
lift=2.733630006357279)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water', 'ground

```

```

beef'}), support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'mineral water'}),
confidence=0.5433070866141732, lift=2.2802479852301616),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}),
items_add=frozenset({'ground beef'}), confidence=0.2574626865671642,
lift=2.620040908078333), OrderedStatistic(items_base=frozenset({'mineral water',
'ground beef'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2247557003257329, lift=2.357577276144051)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'ground
beef'}), support=0.008666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.5118110236220472, lift=2.939190411305784),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen vegetables'}),
items_add=frozenset({'ground beef'}), confidence=0.3110047846889952,
lift=3.164906221394116), OrderedStatistic(items_base=frozenset({'spaghetti',
'ground beef'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.22108843537414966, lift=2.3191094619666046)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water', 'milk'}),
support=0.011066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'mineral water'}), items_add=frozenset({'milk'}),
confidence=0.30970149253731344, lift=2.3896720103187765),
OrderedStatistic(items_base=frozenset({'mineral water', 'milk'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23055555555555557,
lift=2.4184149184149186)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'olive oil'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'milk'}), items_add=frozenset({'olive oil'}), confidence=0.20338983050847456,
lift=3.094165778526489), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.4235294117647058, lift=3.26797385620915),
OrderedStatistic(items_base=frozenset({'milk', 'olive oil'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.28124999999999994,
lift=2.9501748251748245)]),
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'milk'}),
support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'milk'}), confidence=0.28,
lift=2.160493827160494), OrderedStatistic(items_base=frozenset({'shrimp',
'milk'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.26515151515151514, lift=2.781309599491417)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'soup'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',

```

```

'soup'}), items_add=frozenset({'milk'}), confidence=0.5,
lift=3.858024691358025), OrderedStatistic(items_base=frozenset({'milk',
'soup'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2631578947368421, lift=2.760397497239602)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'milk'}),
support=0.008266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'milk'}), items_add=frozenset({'spaghetti'}), confidence=0.35028248587570626,
lift=2.011576297142264), OrderedStatistic(items_base=frozenset({'spaghetti',
'frozen vegetables'}), items_add=frozenset({'milk'}),
confidence=0.2966507177033493, lift=2.288971587217201),
OrderedStatistic(items_base=frozenset({'spaghetti', 'milk'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2330827067669173,
lift=2.4449234975550764)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'tomatoes'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.29523809523809524,
lift=3.096903096903097)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water', 'olive
oil'}), support=0.006533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'olive oil'}), items_add=frozenset({'mineral water'}),
confidence=0.5764705882352941, lift=2.419434477764245),
OrderedStatistic(items_base=frozenset({'mineral water', 'olive oil'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23786407766990292,
lift=2.4950777377961844)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water',
'shrimp'}), support=0.0072,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'mineral water'}), items_add=frozenset({'shrimp'}),
confidence=0.20149253731343283, lift=2.824661738038778),
OrderedStatistic(items_base=frozenset({'mineral water', 'shrimp'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.3068181818181818,
lift=3.2183725365543547)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water', 'soup'}),
support=0.005066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.6333333333333333,
lift=2.6580861779518745), OrderedStatistic(items_base=frozenset({'mineral
water', 'soup'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.21965317919075145, lift=2.3040543271757143)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'mineral
water'}), support=0.012,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral
water'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.20089285714285715, lift=2.107267732267732)]),

```

```

RelationRecord(items=frozenset({'frozen vegetables', 'mineral water',
'tomatoes'}), support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24043715846994534, lift=2.5220680958385873)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water',
'turkey'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'turkey'}), items_add=frozenset({'mineral water'}), confidence=0.5,
lift=2.098489087856743), OrderedStatistic(items_base=frozenset({'mineral water',
'turkey'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2291666666666667, lift=2.403846153846154)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water', 'whole
wheat rice'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'whole wheat rice'}), items_add=frozenset({'mineral water'}),
confidence=0.4852941176470588, lift=2.036768820566839),
OrderedStatistic(items_base=frozenset({'mineral water', 'whole wheat rice'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2185430463576159,
lift=2.292409577177789)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'olive
oil'}), support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'olive oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.5058823529411764, lift=2.905143680749482),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen vegetables'}),
items_add=frozenset({'olive oil'}), confidence=0.20574162679425836,
lift=3.1299436124887174), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'frozen vegetables'}), confidence=0.25,
lift=2.622377622377622)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'shrimp'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'spaghetti'}), confidence=0.36,
lift=2.0673813169984685), OrderedStatistic(items_base=frozenset({'spaghetti',
'frozen vegetables'}), items_add=frozenset({'shrimp'}),
confidence=0.21531100478468898, lift=3.0183785717479763),
OrderedStatistic(items_base=frozenset({'spaghetti', 'shrimp'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2830188679245283,
lift=2.968729383823723)]),
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'tomatoes'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'tomatoes'}), confidence=0.24000000000000002,
lift=3.5087719298245617), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'tomatoes'}), items_add=frozenset({'shrimp'}),
confidence=0.24793388429752067, lift=3.475708658376458),

```

```

OrderedStatistic(items_base=frozenset({'shrimp', 'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.35714285714285715,
lift=3.746253746253746)),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'tomatoes'}),
support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen
vegetables'}), items_add=frozenset({'tomatoes'}),
confidence=0.23923444976076555, lift=3.497579674864993),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}),
items_add=frozenset({'spaghetti'}), confidence=0.4132231404958678,
lift=2.3730272233683065), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.3184713375796178, lift=3.340608436149837))],
RelationRecord(items=frozenset({'mineral water', 'grated cheese', 'ground
beef'}), support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'grated cheese'}), items_add=frozenset({'ground beef'}),
confidence=0.2900763358778626, lift=2.9519301480108133)]),
RelationRecord(items=frozenset({'spaghetti', 'grated cheese', 'ground beef'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4705882352941176, lift=2.7024592379064947),
OrderedStatistic(items_base=frozenset({'spaghetti', 'grated cheese'}),
items_add=frozenset({'ground beef'}), confidence=0.3225806451612903,
lift=3.282706701098612)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'grated
cheese'}), support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'grated cheese'}), items_add=frozenset({'spaghetti'}),
confidence=0.3587786259541985, lift=2.0603673006558108)]),
RelationRecord(items=frozenset({'spaghetti', 'green tea', 'ground beef'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'green tea', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.43243243243243246,
lift=2.483340921319482), OrderedStatistic(items_base=frozenset({'spaghetti',
'green tea'}), items_add=frozenset({'ground beef'}),
confidence=0.2412060301507538, lift=2.4546068197159476)]),
RelationRecord(items=frozenset({'spaghetti', 'green tea', 'olive oil'}),
support=0.004533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'green tea', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.4594594594594594,
lift=2.6385497289019497)]),
RelationRecord(items=frozenset({'mineral water', 'ground beef', 'herb &
pepper'}), support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.390625,

```



```

lift=3.975152645861601))),
  RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'herb & pepper'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'herb
& pepper'}), items_add=frozenset({'spaghetti'}), confidence=0.4,
lift=2.2970903522205206), OrderedStatistic(items_base=frozenset({'spaghetti',
'herb & pepper'}), items_add=frozenset({'ground beef'}),
confidence=0.3934426229508197, lift=4.003825878061259))],
  RelationRecord(items=frozenset({'low fat yogurt', 'mineral water', 'ground
beef'}), support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'low fat yogurt',
'ground beef'}), items_add=frozenset({'mineral water'}), confidence=0.5,
lift=2.098489087856743), OrderedStatistic(items_base=frozenset({'low fat
yogurt', 'mineral water'}), items_add=frozenset({'ground beef'}),
confidence=0.20111731843575417, lift=2.0466484237017046))],
  RelationRecord(items=frozenset({'spaghetti', 'low fat yogurt', 'ground beef'}),
support=0.004, ordered_statistics=[OrderedStatistic(items_base=frozenset({'low
fat yogurt', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4166666666666667, lift=2.392802450229709),
OrderedStatistic(items_base=frozenset({'spaghetti', 'low fat yogurt'}),
items_add=frozenset({'ground beef'}), confidence=0.2631578947368421,
lift=2.677997571948868))],
  RelationRecord(items=frozenset({'mineral water', 'milk', 'ground beef'}),
support=0.011066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'mineral water'}), confidence=0.503030303030303,
lift=2.1112072035407237), OrderedStatistic(items_base=frozenset({'mineral
water', 'ground beef'}), items_add=frozenset({'milk'}),
confidence=0.2703583061889251, lift=2.086098041581212),
OrderedStatistic(items_base=frozenset({'mineral water', 'milk'}),
items_add=frozenset({'ground beef'}), confidence=0.23055555555555557,
lift=2.346223428312981))],
  RelationRecord(items=frozenset({'milk', 'ground beef', 'olive oil'}),
support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'olive oil'}), confidence=0.22424242424242424,
lift=3.411395906324912), OrderedStatistic(items_base=frozenset({'ground beef',
'olive oil'}), items_add=frozenset({'milk'}), confidence=0.3490566037735849,
lift=2.6933379920801306), OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'ground beef'}), confidence=0.28906249999999994,
lift=2.941612957937584))],
  RelationRecord(items=frozenset({'milk', 'ground beef', 'soup'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'soup'}), items_add=frozenset({'milk'}), confidence=0.410958904109589,
lift=3.170979198376459), OrderedStatistic(items_base=frozenset({'milk',
'soup'}), items_add=frozenset({'ground beef'}), confidence=0.2631578947368421,
lift=2.677997571948868))],

```

```

RelationRecord(items=frozenset({'spaghetti', 'milk', 'ground beef'}),
support=0.009733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.44242424242424244,
lift=2.540721147153), OrderedStatistic(items_base=frozenset({'spaghetti',
'milk'}), items_add=frozenset({'ground beef'}), confidence=0.2744360902255639,
lift=2.7927688964609625)]),
RelationRecord(items=frozenset({'mineral water', 'ground beef', 'olive oil'}),
support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'ground beef'}),
confidence=0.24271844660194175, lift=2.469997760535364)]),
RelationRecord(items=frozenset({'mineral water', 'ground beef', 'pancakes'}),
support=0.007466666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'pancakes'}), items_add=frozenset({'mineral water'}),
confidence=0.5137614678899083, lift=2.1562456682564703),
OrderedStatistic(items_base=frozenset({'mineral water', 'pancakes'}),
items_add=frozenset({'ground beef'}), confidence=0.2213438735177866,
lift=2.252481752216281)]),
RelationRecord(items=frozenset({'mineral water', 'shrimp', 'ground beef'}),
support=0.005066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'ground beef'}),
confidence=0.21590909090909088, lift=2.1971752806216847)]),
RelationRecord(items=frozenset({'mineral water', 'ground beef', 'soup'}),
support=0.005066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.5205479452054794,
lift=2.184728365439897), OrderedStatistic(items_base=frozenset({'mineral water',
'soup'}), items_add=frozenset({'ground beef'}), confidence=0.21965317919075145,
lift=2.2352765860659916)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'ground beef'}),
support=0.017066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4169381107491857, lift=2.3943612791875135),
OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral water'}),
items_add=frozenset({'ground beef'}), confidence=0.28571428571428575,
lift=2.907540220973057)]),
RelationRecord(items=frozenset({'mineral water', 'tomatoes', 'ground beef'}),
support=0.005466666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'ground beef'}),
confidence=0.2240437158469945, lift=2.279956402784883)]),
RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'olive oil'}),
support=0.006133333333333333,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.4339622641509434,
lift=2.492126325522263), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'ground beef'}),
confidence=0.2674418604651163, lift=2.7215928812596637))],
RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'pancakes'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'pancakes'}), items_add=frozenset({'spaghetti'}),
confidence=0.44036697247706424, lift=2.5289068097840595),
OrderedStatistic(items_base=frozenset({'spaghetti', 'pancakes'}),
items_add=frozenset({'ground beef'}), confidence=0.25396825396825395,
lift=2.5844801964204946)]),
RelationRecord(items=frozenset({'spaghetti', 'shrimp', 'ground beef'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.5232558139534884,
lift=3.004914704939635), OrderedStatistic(items_base=frozenset({'spaghetti',
'shrimp'}), items_add=frozenset({'ground beef'}), confidence=0.2830188679245283,
lift=2.8801105962468956)]),
RelationRecord(items=frozenset({'spaghetti', 'tomatoes', 'ground beef'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.477272727272724,
lift=2.7408464429903936), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'ground beef'}),
confidence=0.267515923566879, lift=2.722346576325091)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'herb &
pepper'}), support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'herb & pepper'}), items_add=frozenset({'spaghetti'}), confidence=0.3515625,
lift=2.018927067381317)]),
RelationRecord(items=frozenset({'spaghetti', 'low fat yogurt', 'milk'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'low fat
yogurt'}), items_add=frozenset({'milk'}), confidence=0.2894736842105263,
lift=2.2335932423651723)]),
RelationRecord(items=frozenset({'mineral water', 'milk', 'olive oil'}),
support=0.008533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.5,
lift=2.098489087856743), OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'milk'}), confidence=0.31067961165048547,
lift=2.3972192256981906)]),
RelationRecord(items=frozenset({'mineral water', 'milk', 'salmon'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',

```

```

'salmon'}), items_add=frozenset({'milk'}), confidence=0.25984251968503935,
lift=2.004957713619131))),
  RelationRecord(items=frozenset({'mineral water', 'shrimp', 'milk'}),
support=0.007866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'milk'}), confidence=0.3352272727272727,
lift=2.5866301907968574)]),
  RelationRecord(items=frozenset({'mineral water', 'milk', 'soup'}),
support=0.008533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'soup'}),
items_add=frozenset({'mineral water'}), confidence=0.5614035087719299,
lift=2.3561982740847647), OrderedStatistic(items_base=frozenset({'mineral
water', 'soup'}), items_add=frozenset({'milk'}), confidence=0.36994219653179194,
lift=2.8544922571897526)]),
  RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'milk'}),
support=0.015733333333333332,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral
water'}), items_add=frozenset({'milk'}), confidence=0.2633928571428571,
lift=2.0323522927689592)]),
  RelationRecord(items=frozenset({'mineral water', 'milk', 'tomatoes'}),
support=0.006533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'milk'}), confidence=0.2677595628415301,
lift=2.0660460095797073)]),
  RelationRecord(items=frozenset({'mineral water', 'turkey', 'milk'}),
support=0.006133333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'turkey', 'milk'}),
items_add=frozenset({'mineral water'}), confidence=0.5411764705882353,
lift=2.271305836268475), OrderedStatistic(items_base=frozenset({'mineral water',
'turkey'}), items_add=frozenset({'milk'}), confidence=0.3194444444444445,
lift=2.4648491083676274)]),
  RelationRecord(items=frozenset({'spaghetti', 'milk', 'olive oil'}),
support=0.0072,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.42187499999999994,
lift=2.42271248085758), OrderedStatistic(items_base=frozenset({'spaghetti',
'milk'}), items_add=frozenset({'olive oil'}), confidence=0.20300751879699247,
lift=3.0883496774390333), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'milk'}), confidence=0.313953488372093,
lift=2.422480620155039)]),
  RelationRecord(items=frozenset({'spaghetti', 'milk', 'soup'}),
support=0.004533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'soup'}), items_add=frozenset({'milk'}), confidence=0.31775700934579443,
lift=2.451828775816315)]),
  RelationRecord(items=frozenset({'spaghetti', 'milk', 'tomatoes'}),
support=0.005866666666666667,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'tomatoes'}),
items_add=frozenset({'spaghetti'}), confidence=0.41904761904761906,
lift=2.4064756070881645), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'milk'}), confidence=0.2802547770700637,
lift=2.162459699614689))],
RelationRecord(items=frozenset({'spaghetti', 'turkey', 'milk'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'turkey', 'milk'}),
items_add=frozenset({'spaghetti'}), confidence=0.4235294117647058,
lift=2.432213314115845), OrderedStatistic(items_base=frozenset({'spaghetti',
'turkey'}), items_add=frozenset({'milk'}), confidence=0.29032258064516125,
lift=2.240143369175627))],
RelationRecord(items=frozenset({'spaghetti', 'milk', 'whole wheat pasta'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'whole wheat
pasta'}), items_add=frozenset({'spaghetti'}), confidence=0.40540540540540543,
lift=2.328132113737014), OrderedStatistic(items_base=frozenset({'spaghetti',
'whole wheat pasta'}), items_add=frozenset({'milk'}),
confidence=0.45454545454545453, lift=3.5072951739618405))],
RelationRecord(items=frozenset({'mineral water', 'shrimp', 'olive oil'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.55,
lift=2.308337996642418))],
RelationRecord(items=frozenset({'mineral water', 'soup', 'olive oil'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'soup'}), items_add=frozenset({'olive oil'}), confidence=0.2254335260115607,
lift=3.4295161157945335), OrderedStatistic(items_base=frozenset({'soup', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.582089552238806,
lift=2.443017147057104))],
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'olive oil'}),
support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.3737864077669903, lift=2.1465528776817973))],
RelationRecord(items=frozenset({'mineral water', 'tomatoes', 'olive oil'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'olive
oil'}), items_add=frozenset({'mineral water'}), confidence=0.5740740740740741,
lift=2.4093763601318163))],
RelationRecord(items=frozenset({'mineral water', 'soup', 'pancakes'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.627450980392157,
lift=2.6333980710359137))],
RelationRecord(items=frozenset({'mineral water', 'whole wheat rice',

```

```

'pancakes'})), support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'whole wheat rice'}), items_add=frozenset({'pancakes'}),
confidence=0.20529801324503313, lift=2.1595162683558886),
OrderedStatistic(items_base=frozenset({'whole wheat rice', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.5961538461538463,
lift=2.5020446816753483)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'red wine'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water', 'red
wine'}), items_add=frozenset({'spaghetti'}), confidence=0.36585365853658536,
lift=2.1009972733724274)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'salmon'}),
support=0.0068,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'salmon'}), items_add=frozenset({'spaghetti'}), confidence=0.40157480314960625,
lift=2.306134015024538), OrderedStatistic(items_base=frozenset({'spaghetti',
'salmon'}), items_add=frozenset({'mineral water'}),
confidence=0.504950495049505, lift=2.119266207538493)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'shrimp'}),
support=0.0085333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'spaghetti'}), confidence=0.36363636363636365,
lift=2.0882639565641097)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'soup'}),
support=0.0074666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.5233644859813084,
lift=2.1965493256070583)]),
RelationRecord(items=frozenset({'spaghetti', 'mineral water', 'tomatoes'}),
support=0.0093333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'spaghetti'}), confidence=0.3825136612021858,
lift=2.1966711018502245)]),
RelationRecord(items=frozenset({'spaghetti', 'olive oil', 'pancakes'}),
support=0.0050666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil',
'pancakes'}), items_add=frozenset({'spaghetti'}), confidence=0.4691358024691358,
lift=2.694118314332709), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'pancakes'}), confidence=0.2209302325581395,
lift=2.3239505528556053), OrderedStatistic(items_base=frozenset({'spaghetti',
'pancakes'}), items_add=frozenset({'olive oil'}),
confidence=0.20105820105820105, lift=3.0586947422647217)]),
RelationRecord(items=frozenset({'spaghetti', 'tomatoes', 'olive oil'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'olive
oil'}), items_add=frozenset({'spaghetti'}), confidence=0.6111111111111112,

```

```

lift=3.50944359367024), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'olive oil'}),
confidence=0.21019108280254778, lift=3.1976331055154326)]),
RelationRecord(items=frozenset({'spaghetti', 'shrimp', 'tomatoes'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'tomatoes'}), items_add=frozenset({'spaghetti'}),
confidence=0.35714285714285715, lift=2.050973528768322)]),
RelationRecord(items=frozenset({'0', 'almonds', 'burgers', '0.0'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'almonds'}),
items_add=frozenset({'0', 'burgers', '0.0'}), confidence=0.2565789473684211,
lift=2.9424191211974895), OrderedStatistic(items_base=frozenset({'0',
'almonds'}), items_add=frozenset({'burgers', '0.0'}),
confidence=0.2582781456953642, lift=2.9619053405431677),
OrderedStatistic(items_base=frozenset({'almonds', '0.0'}),
items_add=frozenset({'0', 'burgers'}), confidence=0.2565789473684211,
lift=2.9424191211974895), OrderedStatistic(items_base=frozenset({'0', 'almonds',
'0.0'}), items_add=frozenset({'burgers'}), confidence=0.2582781456953642,
lift=2.9619053405431677)]),
RelationRecord(items=frozenset({'0', 'black tea', 'milk', '0.0'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'black tea'}),
items_add=frozenset({'0', 'milk', '0.0'}), confidence=0.2897196261682243,
lift=2.237793199033658), OrderedStatistic(items_base=frozenset({'0', 'black
tea'}), items_add=frozenset({'milk', '0.0'}), confidence=0.2924528301886793,
lift=2.2565804798509204), OrderedStatistic(items_base=frozenset({'black tea',
'0.0'}), items_add=frozenset({'0', 'milk'}), confidence=0.2897196261682243,
lift=2.237793199033658), OrderedStatistic(items_base=frozenset({'0', 'black
tea', '0.0'}), items_add=frozenset({'milk'}), confidence=0.2924528301886793,
lift=2.2565804798509204)]),
RelationRecord(items=frozenset({'0', 'french fries', 'body spray', '0.0'}),
support=0.0042666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'body spray'}),
items_add=frozenset({'0', 'french fries', '0.0'}),
confidence=0.37209302325581395, lift=2.178530581123032),
OrderedStatistic(items_base=frozenset({'0', 'body spray'}),
items_add=frozenset({'french fries', '0.0'}), confidence=0.37209302325581395,
lift=2.1768312592968835), OrderedStatistic(items_base=frozenset({'body spray',
'0.0'}), items_add=frozenset({'0', 'french fries'}),
confidence=0.37209302325581395, lift=2.178530581123032),
OrderedStatistic(items_base=frozenset({'0', 'body spray', '0.0'}),
items_add=frozenset({'french fries'}), confidence=0.37209302325581395,
lift=2.1768312592968835)]),
RelationRecord(items=frozenset({'0', 'ham', 'burgers', '0.0'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ham'}),
items_add=frozenset({'0', 'burgers', '0.0'}), confidence=0.21105527638190955,

```

```

lift=2.420358674104467), OrderedStatistic(items_base=frozenset({'0', 'ham'}),
items_add=frozenset({'burgers', '0.0'}), confidence=0.21105527638190955,
lift=2.420358674104467), OrderedStatistic(items_base=frozenset({'ham', '0.0'}),
items_add=frozenset({'0', 'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467), OrderedStatistic(items_base=frozenset({'0', 'ham',
'0.0'}), items_add=frozenset({'burgers'}), confidence=0.21105527638190955,
lift=2.420358674104467))),
RelationRecord(items=frozenset({'0', 'cereals', 'milk', '0.0'}),
support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cereals'}),
items_add=frozenset({'0', 'milk', '0.0'}), confidence=0.26943005181347146,
lift=2.081076610299728), OrderedStatistic(items_base=frozenset({'0',
'cereals'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.27225130890052357, lift=2.1007045439855214),
OrderedStatistic(items_base=frozenset({'cereals', '0.0'}),
items_add=frozenset({'0', 'milk'}), confidence=0.26943005181347146,
lift=2.081076610299728), OrderedStatistic(items_base=frozenset({'0', 'cereals',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.27225130890052357,
lift=2.1007045439855214)]),
RelationRecord(items=frozenset({'0', 'light cream', 'chicken', '0.0'}),
support=0.004533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}),
items_add=frozenset({'0', 'chicken', '0.0'}), confidence=0.2905982905982906,
lift=4.843304843304844), OrderedStatistic(items_base=frozenset({'0', 'light
cream'}), items_add=frozenset({'chicken', '0.0'}),
confidence=0.2905982905982906, lift=4.843304843304844),
OrderedStatistic(items_base=frozenset({'light cream', '0.0'}),
items_add=frozenset({'0', 'chicken'}), confidence=0.2905982905982906,
lift=4.843304843304844), OrderedStatistic(items_base=frozenset({'0', 'light
cream', '0.0'}), items_add=frozenset({'chicken'}),
confidence=0.2905982905982906, lift=4.843304843304844)]),
RelationRecord(items=frozenset({'0', 'tomato sauce', 'chocolate', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'chocolate', '0.0'}), confidence=0.3584905660377358,
lift=2.1894782127711876), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce'}), items_add=frozenset({'chocolate', '0.0'}),
confidence=0.3584905660377358, lift=2.1876967007998527),
OrderedStatistic(items_base=frozenset({'tomato sauce', '0.0'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.3584905660377358,
lift=2.1894782127711876), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce', '0.0'}), items_add=frozenset({'chocolate'}),
confidence=0.3584905660377358, lift=2.1876967007998527)]),
RelationRecord(items=frozenset({'0', 'eggs', 'cider', '0.0'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cider'}),
items_add=frozenset({'0', 'eggs', '0.0'}), confidence=0.4050632911392405,

```



```

lift=2.2536904180595725), OrderedStatistic(items_base=frozenset({'0', 'cider'}),
items_add=frozenset({'eggs', '0.0'}), confidence=0.4050632911392405,
lift=2.2536904180595725), OrderedStatistic(items_base=frozenset({'cider',
'0.0'}), items_add=frozenset({'0', 'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725), OrderedStatistic(items_base=frozenset({'0', 'cider',
'0.0'}), items_add=frozenset({'eggs'}), confidence=0.4050632911392405,
lift=2.2536904180595725))),
RelationRecord(items=frozenset({'0', 'escalope', 'mushroom cream sauce',
'0.0'}), support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mushroom cream
sauce'}), items_add=frozenset({'0', 'escalope', '0.0'}),
confidence=0.30069930069930073, lift=3.7903273197390845),
OrderedStatistic(items_base=frozenset({'0', 'mushroom cream sauce'}),
items_add=frozenset({'escalope', '0.0'}), confidence=0.30069930069930073,
lift=3.7903273197390845), OrderedStatistic(items_base=frozenset({'mushroom cream
sauce', '0.0'}), items_add=frozenset({'0', 'escalope'}),
confidence=0.30069930069930073, lift=3.7903273197390845),
OrderedStatistic(items_base=frozenset({'0', 'mushroom cream sauce', '0.0'}),
items_add=frozenset({'escalope'}), confidence=0.30069930069930073,
lift=3.7903273197390845)]),
RelationRecord(items=frozenset({'0', 'escalope', 'pasta', '0.0'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'0', 'escalope', '0.0'}), confidence=0.37288135593220345,
lift=4.700185158809287), OrderedStatistic(items_base=frozenset({'0', 'pasta'}),
items_add=frozenset({'escalope', '0.0'}), confidence=0.37288135593220345,
lift=4.700185158809287), OrderedStatistic(items_base=frozenset({'pasta',
'0.0'}), items_add=frozenset({'0', 'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287), OrderedStatistic(items_base=frozenset({'0', 'pasta',
'0.0'}), items_add=frozenset({'escalope'}), confidence=0.37288135593220345,
lift=4.700185158809287)]),
RelationRecord(items=frozenset({'0', 'extra dark chocolate', 'mineral water',
'0.0'}), support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'extra dark
chocolate'}), items_add=frozenset({'0', 'mineral water', '0.0'}),
confidence=0.47777777777777775, lift=2.0063456513624485),
OrderedStatistic(items_base=frozenset({'0', 'extra dark chocolate'}),
items_add=frozenset({'mineral water', '0.0'}), confidence=0.47777777777777775,
lift=2.0052229061742213), OrderedStatistic(items_base=frozenset({'extra dark
chocolate', '0.0'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.47777777777777775, lift=2.0063456513624485),
OrderedStatistic(items_base=frozenset({'0', 'extra dark chocolate', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.47777777777777775,
lift=2.0052229061742213)]),
RelationRecord(items=frozenset({'0', 'fresh tuna', 'pancakes', '0.0'}),
support=0.005066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}),

```

```

items_add=frozenset({'0', '0.0', 'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337), OrderedStatistic(items_base=frozenset({'0', 'fresh
tuna'}), items_add=frozenset({'0.0', 'pancakes'}),
confidence=0.23030303030303031, lift=2.422542394491904),
OrderedStatistic(items_base=frozenset({'fresh tuna', '0.0'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.2275449101796407,
lift=2.3935299107255337), OrderedStatistic(items_base=frozenset({'0', 'fresh
tuna', '0.0'}), items_add=frozenset({'pancakes'}),
confidence=0.23030303030303031, lift=2.422542394491904)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'parmesan cheese',
'0.0'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'parmesan cheese'}),
items_add=frozenset({'0', 'frozen vegetables', '0.0'}),
confidence=0.2684563758389262, lift=2.8199199142744344),
OrderedStatistic(items_base=frozenset({'0', 'parmesan cheese'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.2702702702702703, lift=2.835002835002835),
OrderedStatistic(items_base=frozenset({'parmesan cheese', '0.0'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2684563758389262,
lift=2.8199199142744344), OrderedStatistic(items_base=frozenset({'0', 'parmesan
cheese', '0.0'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2702702702702703, lift=2.835002835002835)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp', '0.0'}),
support=0.016666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}),
items_add=frozenset({'0', 'frozen vegetables', '0.0'}),
confidence=0.2336448598130841, lift=2.454252729129035),
OrderedStatistic(items_base=frozenset({'0', 'shrimp'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.2336448598130841, lift=2.4508202078295533),
OrderedStatistic(items_base=frozenset({'shrimp', '0.0'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2336448598130841,
lift=2.454252729129035), OrderedStatistic(items_base=frozenset({'0', 'shrimp',
'0.0'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2336448598130841, lift=2.4508202078295533)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'tomatoes', '0.0'}),
support=0.016133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}),
items_add=frozenset({'0', 'frozen vegetables', '0.0'}),
confidence=0.23586744639376217, lift=2.4775992268252325),
OrderedStatistic(items_base=frozenset({'0', 'tomatoes'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.23586744639376217, lift=2.4741340530814213),
OrderedStatistic(items_base=frozenset({'tomatoes', '0.0'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.23586744639376217,
lift=2.4775992268252325), OrderedStatistic(items_base=frozenset({'0',
'tomatoes', '0.0'}), items_add=frozenset({'frozen vegetables'}),

```

```

confidence=0.23586744639376217, lift=2.4741340530814213))),
  RelationRecord(items=frozenset({'0', 'grated cheese', 'ground beef', '0.0'}),
support=0.011333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}),
items_add=frozenset({'0', 'ground beef', '0.0'}), confidence=0.2162849872773537,
lift=2.201000548955431), OrderedStatistic(items_base=frozenset({'0', 'grated
cheese'}), items_add=frozenset({'ground beef', '0.0'}),
confidence=0.2162849872773537, lift=2.201000548955431),
OrderedStatistic(items_base=frozenset({'grated cheese', '0.0'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2162849872773537,
lift=2.201000548955431), OrderedStatistic(items_base=frozenset({'0', 'grated
cheese', '0.0'}), items_add=frozenset({'ground beef'}),
confidence=0.2162849872773537, lift=2.201000548955431))],
  RelationRecord(items=frozenset({'0', 'ground beef', 'herb & pepper', '0.0'}),
support=0.016, ordered_statistics=[OrderedStatistic(items_base=frozenset({'herb
& pepper'}), items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.3234501347708895, lift=3.2915549671393096),
OrderedStatistic(items_base=frozenset({'0', 'herb & pepper'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.3234501347708895,
lift=3.2915549671393096), OrderedStatistic(items_base=frozenset({'herb &
pepper', '0.0'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.3234501347708895, lift=3.2915549671393096),
OrderedStatistic(items_base=frozenset({'0', 'herb & pepper', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.3234501347708895,
lift=3.2915549671393096)]),
  RelationRecord(items=frozenset({'0', 'ground beef', 'olive oil', '0.0'}),
support=0.014133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.21501014198782958, lift=2.1880272251135984),
OrderedStatistic(items_base=frozenset({'0', 'olive oil'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.2154471544715447,
lift=2.1924744349207397), OrderedStatistic(items_base=frozenset({'olive oil',
'0.0'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.21501014198782958, lift=2.1880272251135984),
OrderedStatistic(items_base=frozenset({'0', 'olive oil', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.2154471544715447,
lift=2.1924744349207397)]),
  RelationRecord(items=frozenset({'0', 'pepper', 'ground beef', '0.0'}),
support=0.006533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.24623115577889448, lift=2.505744461793363),
OrderedStatistic(items_base=frozenset({'0', 'pepper'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.2474747474747475,
lift=2.5183997368529254), OrderedStatistic(items_base=frozenset({'pepper',
'0.0'}), items_add=frozenset({'0', 'ground beef'}),

```

```

confidence=0.24623115577889448, lift=2.505744461793363),
OrderedStatistic(items_base=frozenset({'0', 'pepper', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.2474747474747475,
lift=2.5183997368529254)],
RelationRecord(items=frozenset({'0', 'ground beef', 'rice', '0.0'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'rice'}),
items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.23404255319148937, lift=2.3817084788821847),
OrderedStatistic(items_base=frozenset({'0', 'rice'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.23404255319148937,
lift=2.3817084788821847), OrderedStatistic(items_base=frozenset({'rice',
'0.0'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.23404255319148937, lift=2.3817084788821847),
OrderedStatistic(items_base=frozenset({'0', 'rice', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.23404255319148937,
lift=2.3817084788821847)]),
RelationRecord(items=frozenset({'0', 'ground beef', 'salmon', '0.0'}),
support=0.008933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'salmon'}),
items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.21069182389937105, lift=2.144082332761578),
OrderedStatistic(items_base=frozenset({'0', 'salmon'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.2120253164556962,
lift=2.15765247410817), OrderedStatistic(items_base=frozenset({'salmon',
'0.0'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.21069182389937105, lift=2.144082332761578),
OrderedStatistic(items_base=frozenset({'0', 'salmon', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.2120253164556962,
lift=2.15765247410817)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', '0.0'}),
support=0.0392,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}),
items_add=frozenset({'0', 'spaghetti', '0.0'}), confidence=0.39891451831750335,
lift=2.292612174238525), OrderedStatistic(items_base=frozenset({'spaghetti'}),
items_add=frozenset({'0', 'ground beef', '0.0'}), confidence=0.225114854517611,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'0', 'ground
beef'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.39891451831750335, lift=2.2908567284695827),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.22528735632183908,
lift=2.292612174238525), OrderedStatistic(items_base=frozenset({'ground beef',
'0.0'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.39891451831750335, lift=2.292612174238525),
OrderedStatistic(items_base=frozenset({'spaghetti', '0.0'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.225114854517611,
lift=2.2908567284695827), OrderedStatistic(items_base=frozenset({'0', 'ground

```

```

beef', '0.0'})), items_add=frozenset({'spaghetti'}),
confidence=0.39891451831750335, lift=2.2908567284695827),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.22528735632183908,
lift=2.292612174238525)]),
RelationRecord(items=frozenset({'0', 'tomato sauce', 'ground beef', '0.0'}),
support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'ground beef', '0.0'}),
confidence=0.37735849056603776, lift=3.840147461662528),
OrderedStatistic(items_base=frozenset({'0', 'tomato sauce'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.37735849056603776,
lift=3.840147461662528), OrderedStatistic(items_base=frozenset({'tomato sauce',
'0.0'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.37735849056603776, lift=3.840147461662528),
OrderedStatistic(items_base=frozenset({'0', 'tomato sauce', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.37735849056603776,
lift=3.840147461662528)]),
RelationRecord(items=frozenset({'0', 'light mayo', 'pancakes', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'light mayo'}),
items_add=frozenset({'0', '0.0', 'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193), OrderedStatistic(items_base=frozenset({'0', 'light
mayo'}), items_add=frozenset({'0.0', 'pancakes'}),
confidence=0.20098039215686275, lift=2.114099496741193),
OrderedStatistic(items_base=frozenset({'light mayo', '0.0'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.20098039215686275,
lift=2.114099496741193), OrderedStatistic(items_base=frozenset({'0', 'light
mayo', '0.0'}), items_add=frozenset({'pancakes'}),
confidence=0.20098039215686275, lift=2.114099496741193)]),
RelationRecord(items=frozenset({'0', 'meatballs', 'milk', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'meatballs'}),
items_add=frozenset({'0', 'milk', '0.0'}), confidence=0.2611464968152866,
lift=2.017094465617559), OrderedStatistic(items_base=frozenset({'0',
'meatballs'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.2611464968152866, lift=2.0150192655500514),
OrderedStatistic(items_base=frozenset({'meatballs', '0.0'}),
items_add=frozenset({'0', 'milk'}), confidence=0.2611464968152866,
lift=2.017094465617559), OrderedStatistic(items_base=frozenset({'0',
'meatballs', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.2611464968152866, lift=2.0150192655500514)]),
RelationRecord(items=frozenset({'0', 'milk', 'soup', '0.0'}), support=0.0152,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}),
items_add=frozenset({'0', 'milk', '0.0'}), confidence=0.3007915567282322,
lift=2.3233127450687348), OrderedStatistic(items_base=frozenset({'0', 'soup'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.3007915567282322,

```

```

lift=2.320922505619076), OrderedStatistic(items_base=frozenset({'soup', '0.0'}),
items_add=frozenset({'0', 'milk'}), confidence=0.3007915567282322,
lift=2.3233127450687348), OrderedStatistic(items_base=frozenset({'0', 'soup',
'0.0'}), items_add=frozenset({'milk'}), confidence=0.3007915567282322,
lift=2.320922505619076)]),
RelationRecord(items=frozenset({'0', 'milk', 'whole wheat pasta', '0.0'}),
support=0.009866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole wheat
pasta'}), items_add=frozenset({'0', 'milk', '0.0'}),
confidence=0.334841628959276, lift=2.586315362713254),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat pasta'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.334841628959276,
lift=2.583654544438858), OrderedStatistic(items_base=frozenset({'whole wheat
pasta', '0.0'}), items_add=frozenset({'0', 'milk'}),
confidence=0.334841628959276, lift=2.586315362713254),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat pasta', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.334841628959276,
lift=2.583654544438858)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'nonfat milk', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'nonfat milk'}),
items_add=frozenset({'0', 'mineral water', '0.0'}),
confidence=0.48717948717948717, lift=2.0458265139116203),
OrderedStatistic(items_base=frozenset({'0', 'nonfat milk'}),
items_add=frozenset({'mineral water', '0.0'}), confidence=0.48717948717948717,
lift=2.044681675347596), OrderedStatistic(items_base=frozenset({'nonfat milk',
'0.0'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.48717948717948717, lift=2.0458265139116203),
OrderedStatistic(items_base=frozenset({'0', 'nonfat milk', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.48717948717948717,
lift=2.044681675347596)]),
RelationRecord(items=frozenset({'0', 'whole wheat pasta', 'olive oil', '0.0'}),
support=0.008, ordered_statistics=[OrderedStatistic(items_base=frozenset({'whole
wheat pasta'}), items_add=frozenset({'0', 'olive oil', '0.0'}),
confidence=0.2714932126696833, lift=4.138616046793953),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat pasta'}),
items_add=frozenset({'olive oil', '0.0'}), confidence=0.2714932126696833,
lift=4.130221288078346), OrderedStatistic(items_base=frozenset({'whole wheat
pasta', '0.0'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.2714932126696833, lift=4.138616046793953),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat pasta', '0.0'}),
items_add=frozenset({'olive oil'}), confidence=0.2714932126696833,
lift=4.130221288078346)]),
RelationRecord(items=frozenset({'0', 'pasta', 'shrimp', '0.0'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}),
items_add=frozenset({'0', 'shrimp', '0.0'}), confidence=0.3220338983050848,

```

```

lift=4.514493901473151), OrderedStatistic(items_base=frozenset({'0', 'pasta'}),
items_add=frozenset({'shrimp', '0.0'}), confidence=0.3220338983050848,
lift=4.514493901473151), OrderedStatistic(items_base=frozenset({'pasta',
'0.0'}), items_add=frozenset({'0', 'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151), OrderedStatistic(items_base=frozenset({'0', 'pasta',
'0.0'}), items_add=frozenset({'shrimp'}), confidence=0.3220338983050848,
lift=4.514493901473151))),
RelationRecord(items=frozenset({'0', 'pepper', 'spaghetti', '0.0'}),
support=0.009733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'pepper'}),
items_add=frozenset({'0', 'spaghetti', '0.0'}), confidence=0.3668341708542714,
lift=2.108242361231445), OrderedStatistic(items_base=frozenset({'0', 'pepper'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.3686868686868687,
lift=2.1172676226275002), OrderedStatistic(items_base=frozenset({'pepper',
'0.0'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.3668341708542714,
lift=2.108242361231445), OrderedStatistic(items_base=frozenset({'0', 'pepper',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.3686868686868687,
lift=2.1172676226275002)]),
RelationRecord(items=frozenset({'0', 'red wine', 'spaghetti', '0.0'}),
support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}),
items_add=frozenset({'0', 'spaghetti', '0.0'}), confidence=0.36492890995260663,
lift=2.097292585934521), OrderedStatistic(items_base=frozenset({'0', 'red
wine'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.36492890995260663, lift=2.0956866957462097),
OrderedStatistic(items_base=frozenset({'red wine', '0.0'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.36492890995260663,
lift=2.097292585934521), OrderedStatistic(items_base=frozenset({'0', 'red wine',
'0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.36492890995260663,
lift=2.0956866957462097)]),
RelationRecord(items=frozenset({'0', 'tomato sauce', 'spaghetti', '0.0'}),
support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomato sauce'}),
items_add=frozenset({'0', 'spaghetti', '0.0'}), confidence=0.44339622641509435,
lift=2.548254174799393), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.44339622641509435, lift=2.546302984772747),
OrderedStatistic(items_base=frozenset({'tomato sauce', '0.0'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.44339622641509435,
lift=2.548254174799393), OrderedStatistic(items_base=frozenset({'0', 'tomato
sauce', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.44339622641509435, lift=2.546302984772747)]),
RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'burgers'}),
support=0.005466666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'0', 'milk'}), confidence=0.3203125,
lift=2.474092430484037), OrderedStatistic(items_base=frozenset({'0',

```

```

'chocolate', 'burgers'})), items_add=frozenset({'milk'}), confidence=0.3203125,
lift=2.4715470679012346)]),
  RelationRecord(items=frozenset({'0', 'spaghetti', 'chocolate', 'burgers'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.375,
lift=2.1551724137931036), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'burgers'}), items_add=frozenset({'spaghetti'}), confidence=0.375,
lift=2.153522205206738)]),
  RelationRecord(items=frozenset({'0', 'french fries', 'eggs', 'burgers'}),
support=0.009066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'french fries',
'burgers'}), items_add=frozenset({'0', 'eggs'}), confidence=0.41212121212121217,
lift=2.292959266253035), OrderedStatistic(items_base=frozenset({'eggs', 'french
fries'}), items_add=frozenset({'0', 'burgers'}), confidence=0.2490842490842491,
lift=2.8564707463790033), OrderedStatistic(items_base=frozenset({'0', 'french
fries', 'burgers'}), items_add=frozenset({'eggs'}),
confidence=0.41212121212121217, lift=2.292959266253035),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'french fries'}),
items_add=frozenset({'burgers'}), confidence=0.2490842490842491,
lift=2.8564707463790033)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'green tea', 'burgers'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'green
tea'}), items_add=frozenset({'0', 'burgers'}), confidence=0.23560209424083772,
lift=2.7018588789086895), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'green tea'}), items_add=frozenset({'burgers'}), confidence=0.23560209424083772,
lift=2.7018588789086895)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'ground beef', 'burgers'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'0', 'burgers'}), confidence=0.2,
lift=2.293577981651376), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'ground beef'}), items_add=frozenset({'burgers'}), confidence=0.2,
lift=2.293577981651376)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'burgers', 'pancakes'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'0', 'eggs'}), confidence=0.3924050632911392,
lift=2.1832625924952107), OrderedStatistic(items_base=frozenset({'0', 'burgers',
'pancakes'}), items_add=frozenset({'eggs'}), confidence=0.3924050632911392,
lift=2.1832625924952107)]),
  RelationRecord(items=frozenset({'0', 'french fries', 'milk', 'burgers'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'french
fries'}), items_add=frozenset({'0', 'burgers'}), confidence=0.2359550561797753,
lift=2.7059066075662304), OrderedStatistic(items_base=frozenset({'0', 'milk',

```



```

'french fries'}), items_add=frozenset({'burgers'}),
confidence=0.2359550561797753, lift=2.7059066075662304)]),
  RelationRecord(items=frozenset({'0', 'french fries', 'spaghetti', 'burgers'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'french
fries'}), items_add=frozenset({'0', 'burgers'}), confidence=0.2028985507246377,
lift=2.3268182422550194), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'french fries'}), items_add=frozenset({'burgers'}),
confidence=0.2028985507246377, lift=2.3268182422550194)]),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'burgers'}), support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.20218579234972675, lift=2.123800339808054),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'burgers'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.20218579234972675,
lift=2.1208299896824485)]),
  RelationRecord(items=frozenset({'0', 'milk', 'ground beef', 'burgers'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'0', 'milk'}), confidence=0.3444444444444444,
lift=2.6604874699622383), OrderedStatistic(items_base=frozenset({'milk',
'burgers'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.23134328358208955, lift=2.3542396565341543),
OrderedStatistic(items_base=frozenset({'0', 'ground beef', 'burgers'}),
items_add=frozenset({'milk'}), confidence=0.3444444444444444,
lift=2.657750342935528), OrderedStatistic(items_base=frozenset({'0', 'milk',
'burgers'}), items_add=frozenset({'ground beef'}),
confidence=0.23134328358208955, lift=2.3542396565341543)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'ground beef',
'burgers'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.21857923497267756, lift=2.2243477100340323),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'burgers'}),
items_add=frozenset({'ground beef'}), confidence=0.21857923497267756,
lift=2.2243477100340323)]),
  RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'burgers'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4555555555555555, lift=2.6181353767560664),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.25465838509316774,
lift=2.5915032404325076), OrderedStatistic(items_base=frozenset({'0', 'ground
beef', 'burgers'}), items_add=frozenset({'spaghetti'}),
confidence=0.4555555555555555, lift=2.6161306789178154),

```

```

OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'burgers'}),
items_add=frozenset({'ground beef'}), confidence=0.25465838509316774,
lift=2.5915032404325076)],
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'burgers'}),
support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'0', 'milk'}), confidence=0.28415300546448086,
lift=2.19479664364944), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'burgers'}), items_add=frozenset({'milk'}),
confidence=0.28415300546448086, lift=2.1925386224111176)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'milk', 'burgers'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'burgers'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.35820895522388063,
lift=2.0586721564590844), OrderedStatistic(items_base=frozenset({'spaghetti',
'burgers'}), items_add=frozenset({'0', 'milk'}), confidence=0.298136645962733,
lift=2.302806225252829), OrderedStatistic(items_base=frozenset({'0', 'milk',
'burgers'}), items_add=frozenset({'spaghetti'}), confidence=0.35820895522388063,
lift=2.0570958378094217), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'burgers'}), items_add=frozenset({'milk'}),
confidence=0.298136645962733, lift=2.300437083045779)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'burgers', 'pancakes'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4177215189873418, lift=2.400698384984723),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.2049689440993789,
lift=2.156054811704547), OrderedStatistic(items_base=frozenset({'0', 'burgers',
'pancakes'}), items_add=frozenset({'spaghetti'}), confidence=0.4177215189873418,
lift=2.3988601779518097), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'burgers'}), items_add=frozenset({'pancakes'}),
confidence=0.2049689440993789, lift=2.156054811704547)]),
RelationRecord(items=frozenset({'0', 'cake', 'spaghetti', 'chocolate'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake',
'chocolate'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.37254901960784315, lift=2.1410863195853054),
OrderedStatistic(items_base=frozenset({'0', 'cake', 'chocolate'}),
items_add=frozenset({'spaghetti'}), confidence=0.37623762376237624,
lift=2.1606295392173216)]),
RelationRecord(items=frozenset({'0', 'cake', 'mineral water', 'milk'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'milk'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.48,
lift=2.015677491601344), OrderedStatistic(items_base=frozenset({'0', 'cake',
'milk'}), items_add=frozenset({'mineral water'}),

```

```

confidence=0.48484848484848486, lift=2.034898509436842)]),
  RelationRecord(items=frozenset({'0', 'cake', 'spaghetti', 'pancakes'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'pancakes'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.34831460674157305,
lift=2.0018080847216844), OrderedStatistic(items_base=frozenset({'spaghetti',
'cake'}), items_add=frozenset({'0', 'pancakes'}),
confidence=0.22794117647058823, lift=2.39769820971867),
OrderedStatistic(items_base=frozenset({'0', 'cake', 'pancakes'}),
items_add=frozenset({'spaghetti'}), confidence=0.34831460674157305,
lift=2.0002753067088803), OrderedStatistic(items_base=frozenset({'0', 'cake',
'spaghetti'}), items_add=frozenset({'pancakes'}),
confidence=0.22962962962962966, lift=2.415458937198068)]),
  RelationRecord(items=frozenset({'0', 'green tea', 'chocolate', 'chicken'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'0', 'green tea'}),
confidence=0.27272727272727276, lift=2.0682047982351324),
OrderedStatistic(items_base=frozenset({'green tea', 'chicken'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.3370786516853933,
lift=2.058705120228379), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'chicken'}), items_add=frozenset({'green tea'}),
confidence=0.27272727272727276, lift=2.066115702479339),
OrderedStatistic(items_base=frozenset({'0', 'green tea', 'chicken'}),
items_add=frozenset({'chocolate'}), confidence=0.3370786516853933,
lift=2.0570300143534985)]),
  RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'chicken'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'0', 'milk'}), confidence=0.30909090909090914,
lift=2.3874169085291643), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'chicken'}), items_add=frozenset({'milk'}),
confidence=0.30909090909090914, lift=2.384960718294052)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'chocolate', 'chicken'}),
support=0.0076,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5181818181818182, lift=2.1760154738878144),
OrderedStatistic(items_base=frozenset({'mineral water', 'chicken'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.3333333333333333,
lift=2.0358306188925077), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'chicken'}), items_add=frozenset({'mineral water'}),
confidence=0.5181818181818182, lift=2.174797781960625),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'chicken'}),
items_add=frozenset({'chocolate'}), confidence=0.3333333333333333,
lift=2.034174125305126)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'milk', 'chicken'}),

```

```

support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'chicken'}),
items_add=frozenset({'0', 'milk'}), confidence=0.28703703703703703,
lift=2.2170728916351985), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'chicken'}), items_add=frozenset({'milk'}), confidence=0.28703703703703703,
lift=2.2147919524462734)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'chicken'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'chicken'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.5070422535211268, lift=2.914035939776591),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chicken'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.27906976744186046,
lift=2.839923006531823), OrderedStatistic(items_base=frozenset({'0', 'ground
beef', 'chicken'}), items_add=frozenset({'spaghetti'}),
confidence=0.5070422535211268, lift=2.911804671828829),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'chicken'}),
items_add=frozenset({'ground beef'}), confidence=0.27906976744186046,
lift=2.839923006531823)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'chicken'}),
support=0.0066666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'0', 'milk'}), confidence=0.29239766081871343,
lift=2.2584783276419675), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'chicken'}), items_add=frozenset({'milk'}),
confidence=0.29239766081871343, lift=2.2561547902678507)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'milk', 'chicken'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'chicken'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.36936936936936937,
lift=2.122812467640054), OrderedStatistic(items_base=frozenset({'spaghetti',
'chicken'}), items_add=frozenset({'0', 'milk'}), confidence=0.3178294573643411,
lift=2.4549134193950133), OrderedStatistic(items_base=frozenset({'0', 'milk',
'chicken'}), items_add=frozenset({'spaghetti'}), confidence=0.36936936936936937,
lift=2.1211870369603907), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'chicken'}), items_add=frozenset({'milk'}),
confidence=0.3178294573643411, lift=2.452387788305101)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'chicken', 'pancakes'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'0', 'pancakes'}),
confidence=0.21052631578947364, lift=2.214512438178194),
OrderedStatistic(items_base=frozenset({'chicken', 'pancakes'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5294117647058822,
lift=2.22317370397207), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'chicken'}), items_add=frozenset({'pancakes'}),
confidence=0.21052631578947364, lift=2.214512438178194),

```

```

OrderedStatistic(items_base=frozenset({'0', 'chicken', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.5294117647058822,
lift=2.2219296224365515)],
RelationRecord(items=frozenset({'0', 'cookies', 'chocolate', 'french fries'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cookies',
'chocolate'}), items_add=frozenset({'0', 'french fries'}),
confidence=0.38461538461538464, lift=2.251846514141596),
OrderedStatistic(items_base=frozenset({'0', 'cookies', 'chocolate'}),
items_add=frozenset({'french fries'}), confidence=0.38461538461538464,
lift=2.2500900036001443)]),
RelationRecord(items=frozenset({'0', 'eggs', 'cooking oil', 'chocolate'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'0', 'chocolate'}), confidence=0.3863636363636364,
lift=2.3597127628072254), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'cooking oil'}), items_add=frozenset({'chocolate'}),
confidence=0.3863636363636364, lift=2.3577927361491238)]),
RelationRecord(items=frozenset({'0', 'cooking oil', 'chocolate', 'milk'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cooking oil',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.3235294117647059, lift=2.4989398437026717),
OrderedStatistic(items_base=frozenset({'cooking oil', 'milk'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.38372093023255816,
lift=2.3435724566320735), OrderedStatistic(items_base=frozenset({'0', 'cooking
oil', 'chocolate'}), items_add=frozenset({'milk'}),
confidence=0.3235294117647059, lift=2.4963689179375455),
OrderedStatistic(items_base=frozenset({'0', 'cooking oil', 'milk'}),
items_add=frozenset({'chocolate'}), confidence=0.38372093023255816,
lift=2.34166556285125)]),
RelationRecord(items=frozenset({'0', 'eggs', 'milk', 'chocolate'}),
support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.27710843373493976, lift=2.1403844006303276),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.27710843373493976,
lift=2.1381823590658935)]),
RelationRecord(items=frozenset({'0', 'eggs', 'chocolate', 'olive oil'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'0', 'chocolate'}), confidence=0.3333333333333333,
lift=2.0358306188925077), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'olive oil'}), items_add=frozenset({'chocolate'}),
confidence=0.3333333333333333, lift=2.034174125305126)]),
RelationRecord(items=frozenset({'0', 'escalope', 'mineral water',

```

```

'chocolate'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope', 'mineral
water'}), items_add=frozenset({'0', 'chocolate'}), confidence=0.328125,
lift=2.004020765472313), OrderedStatistic(items_base=frozenset({'0', 'escalope',
'mineral water'}), items_add=frozenset({'chocolate'}), confidence=0.328125,
lift=2.002390154597234)]),
RelationRecord(items=frozenset({'0', 'frozen smoothie', 'milk', 'chocolate'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.26785714285714285, lift=2.0689274680005885),
OrderedStatistic(items_base=frozenset({'0', 'frozen smoothie', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.2702702702702703,
lift=2.085418752085419)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'chocolate', 'ground
beef'}), support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'0', 'ground beef'}), confidence=0.25,
lift=2.5440976933514245), OrderedStatistic(items_base=frozenset({'chocolate',
'ground beef'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.2485549132947977, lift=2.610870937970564),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}),
items_add=frozenset({'0', 'chocolate'}), confidence=0.3385826771653543,
lift=2.0678909435994766), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'chocolate'}), items_add=frozenset({'ground beef'}),
confidence=0.25146198830409355, lift=2.558975457640029),
OrderedStatistic(items_base=frozenset({'0', 'chocolate', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2485549132947977,
lift=2.6072193702251507), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'ground beef'}), items_add=frozenset({'chocolate'}),
confidence=0.3385826771653543, lift=2.0662083634989075)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk',
'chocolate'}), support=0.007866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.34302325581395343, lift=2.6495102148348617),
OrderedStatistic(items_base=frozenset({'milk', 'chocolate'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.24481327800829875,
lift=2.571568046305659), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'milk'}), items_add=frozenset({'0', 'chocolate'}),
confidence=0.3333333333333333, lift=2.0358306188925077),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.34502923976608185,
lift=2.662262652516064), OrderedStatistic(items_base=frozenset({'0', 'milk',
'chocolate'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2458333333333333, lift=2.578671328671328),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'milk'}),

```

```

items_add=frozenset({'chocolate'}), confidence=0.3352272727272727,
lift=2.045731932835269))),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp',
'chocolate'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'0', 'shrimp'}),
confidence=0.23255813953488372, lift=3.260160834601174),
OrderedStatistic(items_base=frozenset({'shrimp', 'chocolate'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.29629629629629634,
lift=3.1123560535325243), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'chocolate'}), items_add=frozenset({'shrimp'}),
confidence=0.23391812865497075, lift=3.279226102639777),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'chocolate'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.29629629629629634,
lift=3.1080031080031083)]),
RelationRecord(items=frozenset({'0', 'herb & pepper', 'chocolate', 'ground
beef'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'herb &
pepper'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.4411764705882353, lift=4.489584164737808),
OrderedStatistic(items_base=frozenset({'0', 'chocolate', 'herb & pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.4411764705882353,
lift=4.489584164737808)]),
RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'ground beef'}),
support=0.0061333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'0', 'milk'}), confidence=0.26589595375722547,
lift=2.0537792514718753), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'ground beef'}), items_add=frozenset({'milk'}),
confidence=0.26589595375722547, lift=2.051666309855135)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'chocolate', 'ground
beef'}), support=0.010933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.20759493670886076, lift=2.1125671985297907),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'chocolate'}),
items_add=frozenset({'ground beef'}), confidence=0.20759493670886076,
lift=2.1125671985297907)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'chocolate', 'ground beef'}),
support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.3988439306358382,
lift=2.292206497907116), OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.23469387755102042, lift=2.388336610085011),
OrderedStatistic(items_base=frozenset({'0', 'chocolate', 'ground beef'}),
items_add=frozenset({'spaghetti'}), confidence=0.3988439306358382,

```

```

lift=2.290451362763236), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'chocolate'}), items_add=frozenset({'ground beef'}),
confidence=0.2354948805460751, lift=2.3964879295733557)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'chocolate'}),
support=0.014,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.2658227848101266, lift=2.0532140948259006),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.2658227848101266,
lift=2.0511017346460387)]),
RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'olive oil'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'0', 'milk'}), confidence=0.30894308943089427,
lift=2.3862751500841473), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.3114754098360656, lift=2.4033596437968026)]),
RelationRecord(items=frozenset({'0', 'shrimp', 'milk', 'chocolate'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.3037037037037037, lift=2.3458061563107906),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.3037037037037037,
lift=2.343392775491541)]),
RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'soup'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'0', 'milk'}), confidence=0.39473684210526316,
lift=3.0489457423166564), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'soup'}), items_add=frozenset({'milk'}),
confidence=0.39473684210526316, lift=3.045808966861599)]),
RelationRecord(items=frozenset({'0', 'milk', 'chocolate', 'spaghetti'}),
support=0.0108,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'0', 'milk'}),
confidence=0.2755102040816327, lift=2.128039681372034),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'chocolate'}),
items_add=frozenset({'milk'}), confidence=0.2764505119453925,
lift=2.1331058020477816)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'chocolate', 'olive
oil'}), support=0.008266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5040650406504065, lift=2.116734493212793),
OrderedStatistic(items_base=frozenset({'0', 'chocolate', 'olive oil'}),

```



```

items_add=frozenset({'mineral water'}), confidence=0.5081967213114754,
lift=2.1328905483134113)),
  RelationRecord(items=frozenset({'0', 'mineral water', 'chocolate', 'soup'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5526315789473685, lift=2.320681322567337),
OrderedStatistic(items_base=frozenset({'0', 'chocolate', 'soup'}),
items_add=frozenset({'mineral water'}), confidence=0.5526315789473685,
lift=2.3193826760521903)]),
  RelationRecord(items=frozenset({'0', 'spaghetti', 'chocolate', 'olive oil'}),
support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.4227642276422764,
lift=2.429679469208485), OrderedStatistic(items_base=frozenset({'0',
'chocolate', 'olive oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.42622950819672134, lift=2.447719227775965)]),
  RelationRecord(items=frozenset({'0', 'shrimp', 'spaghetti', 'chocolate'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.3555555555555556, lift=2.043422733077906),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'chocolate'}),
items_add=frozenset({'spaghetti'}), confidence=0.3555555555555556,
lift=2.0418580908626853)]),
  RelationRecord(items=frozenset({'0', 'spaghetti', 'chocolate', 'tomatoes'}),
support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes',
'chocolate'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.35238095238095235, lift=2.0251778872468527),
OrderedStatistic(items_base=frozenset({'0', 'tomatoes', 'chocolate'}),
items_add=frozenset({'spaghetti'}), confidence=0.35238095238095235,
lift=2.0236272150514107)]),
  RelationRecord(items=frozenset({'0', 'cookies', 'green tea', 'french fries'}),
support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cookies', 'french
fries'}), items_add=frozenset({'0', 'green tea'}),
confidence=0.35000000000000003, lift=2.6541961577350865),
OrderedStatistic(items_base=frozenset({'cookies', 'green tea'}),
items_add=frozenset({'0', 'french fries'}), confidence=0.3888888888888889,
lift=2.276867030965392), OrderedStatistic(items_base=frozenset({'0', 'cookies',
'french fries'}), items_add=frozenset({'green tea'}),
confidence=0.35000000000000003, lift=2.651515151515152),
OrderedStatistic(items_base=frozenset({'0', 'cookies', 'green tea'}),
items_add=frozenset({'french fries'}), confidence=0.3888888888888889,
lift=2.2750910036401457)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'cooking oil', 'milk'}),

```

```

support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'0', 'milk'}), confidence=0.34090909090909094,
lift=2.633180413818931), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'cooking oil'}), items_add=frozenset({'milk'}), confidence=0.34090909090909094,
lift=2.6304713804713806)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'eggs', 'cooking oil'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5454545454545455, lift=2.2905426040924364),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'cooking oil'}),
items_add=frozenset({'mineral water'}), confidence=0.5454545454545455,
lift=2.2892608231164475)]),
RelationRecord(items=frozenset({'0', 'eggs', 'cooking oil', 'spaghetti'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.3522727272727273,
lift=2.024555903866249), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'cooking oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.3522727272727273, lift=2.0230057079214814)]),
RelationRecord(items=frozenset({'0', 'cooking oil', 'ground beef',
'spaghetti'}), support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cooking oil',
'ground beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.5714285714285714, lift=3.284072249589491),
OrderedStatistic(items_base=frozenset({'spaghetti', 'cooking oil'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.30252100840336127,
lift=3.0785719986773534), OrderedStatistic(items_base=frozenset({'0', 'cooking
oil', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.5714285714285714, lift=3.281557646029315),
OrderedStatistic(items_base=frozenset({'0', 'cooking oil', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.30252100840336127,
lift=3.0785719986773534)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'cooking oil',
'pancakes'}), support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'cooking oil'}), items_add=frozenset({'0', 'pancakes'}),
confidence=0.2317880794701987, lift=2.4381635287889063),
OrderedStatistic(items_base=frozenset({'cooking oil', 'pancakes'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5932203389830509,
lift=2.4911268434338645), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'cooking oil'}), items_add=frozenset({'pancakes'}),
confidence=0.2317880794701987, lift=2.4381635287889063),
OrderedStatistic(items_base=frozenset({'0', 'cooking oil', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.5932203389830509,
lift=2.4897328161012213)]),

```

```

RelationRecord(items=frozenset({'0', 'mineral water', 'cooking oil',
'spaghetti'}), support=0.0076,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'cooking oil'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.37748344370860926, lift=2.169445078785111),
OrderedStatistic(items_base=frozenset({'spaghetti', 'cooking oil'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.4789915966386554,
lift=2.011442875022349), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'cooking oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.37748344370860926, lift=2.1677839416650606),
OrderedStatistic(items_base=frozenset({'0', 'cooking oil', 'spaghetti'}),
items_add=frozenset({'mineral water'}), confidence=0.4789915966386554,
lift=2.0103172774425944)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'eggs', 'ground
beef'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'eggs'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.20245398773006135, lift=2.060250892775387),
OrderedStatistic(items_base=frozenset({'eggs', 'ground beef'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.22,
lift=2.310924369747899), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'eggs'}), items_add=frozenset({'ground beef'}),
confidence=0.20245398773006135, lift=2.060250892775387),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.22,
lift=2.3076923076923075)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'eggs', 'milk'}),
support=0.007333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'eggs'}), items_add=frozenset({'0', 'milk'}), confidence=0.3374233128834356,
lift=2.6062562787083077), OrderedStatistic(items_base=frozenset({'eggs',
'milk'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.23809523809523808, lift=2.5010004001600636),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'eggs'}),
items_add=frozenset({'milk'}), confidence=0.3374233128834356,
lift=2.6035749450882375), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'milk'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.23809523809523808, lift=2.4975024975024973)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'eggs', 'grated
cheese'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'grated
cheese'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.4852941176470588, lift=2.0379092286410643),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'grated cheese'}),
items_add=frozenset({'mineral water'}), confidence=0.4852941176470588,
lift=2.036768820566839)]),
RelationRecord(items=frozenset({'0', 'eggs', 'grated cheese', 'spaghetti'}),

```

```

support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'grated
cheese'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.47058823529411764, lift=2.704530087897228),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'grated cheese'}),
items_add=frozenset({'spaghetti'}), confidence=0.47058823529411764,
lift=2.7024592379064947)]),
RelationRecord(items=frozenset({'0', 'eggs', 'ground beef', 'herb & pepper'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'0', 'herb & pepper'}),
confidence=0.20666666666666667, lift=4.177897574123989),
OrderedStatistic(items_base=frozenset({'eggs', 'herb & pepper'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.32978723404255317,
lift=3.3560437656976236), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'ground beef'}), items_add=frozenset({'herb & pepper'}),
confidence=0.20666666666666667, lift=4.177897574123989),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'herb & pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.32978723404255317,
lift=3.3560437656976236)]),
RelationRecord(items=frozenset({'0', 'eggs', 'milk', 'ground beef'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'0', 'milk'}), confidence=0.2933333333333333,
lift=2.265705458290422), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'ground beef'}), items_add=frozenset({'milk'}), confidence=0.2933333333333333,
lift=2.263374485596708)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'eggs', 'ground beef'}),
support=0.010133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5066666666666666, lift=2.1276595744680846),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'ground beef'}),
items_add=frozenset({'mineral water'}), confidence=0.5066666666666666,
lift=2.1264689423614995)]),
RelationRecord(items=frozenset({'0', 'eggs', 'spaghetti', 'ground beef'}),
support=0.008933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4466666666666666, lift=2.5670498084291187),
OrderedStatistic(items_base=frozenset({'spaghetti', 'eggs'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.24452554744525545,
lift=2.488387524883875), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4466666666666666, lift=2.565084226646248),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.24452554744525545,

```

```

lift=2.488387524883875)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'spaghetti', 'herb & pepper'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'herb &
pepper'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.38297872340425526, lift=2.201027146001467),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'herb & pepper'}),
items_add=frozenset({'spaghetti'}), confidence=0.38297872340425526,
lift=2.1993418265941154)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'milk', 'shrimp'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'shrimp'}),
items_add=frozenset({'0', 'milk'}), confidence=0.30188679245283023,
lift=2.331772341293745), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'shrimp'}), items_add=frozenset({'milk'}), confidence=0.30188679245283023,
lift=2.329373398555789)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'eggs', 'olive oil'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.4888888888888889, lift=2.053004852556924),
OrderedStatistic(items_base=frozenset({'0', 'eggs', 'olive oil'}),
items_add=frozenset({'mineral water'}), confidence=0.4888888888888889,
lift=2.0518559970154824)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'eggs', 'soup'}),
support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'soup'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5441176470588235,
lift=2.2849285290824053), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.5441176470588235,
lift=2.2836498897264557)]),
  RelationRecord(items=frozenset({'0', 'eggs', 'spaghetti', 'olive oil'}),
support=0.005066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.4222222222222217,
lift=2.4265644955300125), OrderedStatistic(items_base=frozenset({'0', 'eggs',
'olive oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.4222222222222217, lift=2.4247064828994382)]),
  RelationRecord(items=frozenset({'0', 'escalope', 'mineral water', 'milk'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope', 'milk'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5172413793103449,
lift=2.172066262501448), OrderedStatistic(items_base=frozenset({'0', 'escalope',
'milk'}), items_add=frozenset({'mineral water'}), confidence=0.5172413793103449,
lift=2.1708507805414587)]),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk', 'french
fries'}), support=0.005733333333333333,

```

```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'french fries'}), items_add=frozenset({'0', 'milk'}),
confidence=0.30069930069930073, lift=2.3226001598813135),
OrderedStatistic(items_base=frozenset({'milk', 'french fries'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.24157303370786518,
lift=2.537531866679256), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'french fries'}), items_add=frozenset({'milk'}),
confidence=0.30069930069930073, lift=2.3202106535439873),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'french fries'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.24157303370786518,
lift=2.533982871061523)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'french
fries'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'french fries'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.40384615384615385, lift=2.320954907161804),
OrderedStatistic(items_base=frozenset({'spaghetti', 'french fries'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2028985507246377,
lift=2.064774939531591), OrderedStatistic(items_base=frozenset({'0', 'ground
beef', 'french fries'}), items_add=frozenset({'spaghetti'}),
confidence=0.40384615384615385, lift=2.31917775945341),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'french fries'}),
items_add=frozenset({'ground beef'}), confidence=0.2028985507246377,
lift=2.064774939531591)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'french fries', 'pancakes'}),
support=0.005733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'french
fries'}), items_add=frozenset({'0', 'pancakes'}),
confidence=0.20772946859903382, lift=2.1850925869463587),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'french fries'}),
items_add=frozenset({'pancakes'}), confidence=0.20772946859903382,
lift=2.1850925869463587)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'fresh bread'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'fresh bread'}), items_add=frozenset({'0', 'milk'}), confidence=0.3,
lift=2.317198764160659), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'fresh bread'}), items_add=frozenset({'milk'}), confidence=0.3,
lift=2.314814814814815)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'frozen smoothie',
'spaghetti'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'frozen smoothie'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.4,
lift=2.298850574712644), OrderedStatistic(items_base=frozenset({'spaghetti',
'frozen smoothie'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.25641025641025644, lift=2.693385046326223),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'frozen

```

```

smoothie'}), items_add=frozenset({'spaghetti'}), confidence=0.40540540540540543,
lift=2.328132113737014), OrderedStatistic(items_base=frozenset({'0', 'frozen
smoothie', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.25862068965517243, lift=2.712804436942368)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'frozen smoothie',
'milk'}), support=0.0061333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'frozen smoothie'}), items_add=frozenset({'0', 'milk'}),
confidence=0.304635761589404, lift=2.35300536758036),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'frozen
smoothie'}), items_add=frozenset({'milk'}), confidence=0.30666666666666664,
lift=2.366255144032922)]),
RelationRecord(items=frozenset({'0', 'frozen smoothie', 'milk', 'spaghetti'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie',
'milk'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.38317757009345793, lift=2.2021699430658503),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen smoothie'}),
items_add=frozenset({'0', 'milk'}), confidence=0.35042735042735046,
lift=2.7066994111278353), OrderedStatistic(items_base=frozenset({'0', 'frozen
smoothie', 'milk'}), items_add=frozenset({'spaghetti'}),
confidence=0.3867924528301887, lift=2.2212430292698433),
OrderedStatistic(items_base=frozenset({'0', 'frozen smoothie', 'spaghetti'}),
items_add=frozenset({'milk'}), confidence=0.35344827586206895,
lift=2.7272243507875693)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk', 'ground
beef'}), support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'0', 'milk'}),
confidence=0.3385826771653543, lift=2.6152112036458877),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.24293785310734464,
lift=2.472230526872571), OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.2606060606060606, lift=2.737458619811561),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'ground
beef'}), items_add=frozenset({'milk'}), confidence=0.3385826771653543,
lift=2.6125206571400796), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'milk'}), items_add=frozenset({'ground beef'}),
confidence=0.24431818181818182, lift=2.4862772912298015),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2606060606060606,
lift=2.733630006357279)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'ground beef'}), support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'0', 'mineral water'}),

```

```

confidence=0.5433070866141732, lift=2.2815247198243553),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2574626865671642,
lift=2.620040908078333), OrderedStatistic(items_base=frozenset({'mineral water',
'ground beef'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.2247557003257329, lift=2.3608792051022363),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'ground
beef'}), items_add=frozenset({'mineral water'}), confidence=0.5433070866141732,
lift=2.2802479852301616), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'mineral water'}), items_add=frozenset({'ground beef'}),
confidence=0.2574626865671642, lift=2.620040908078333),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2247557003257329,
lift=2.357577276144051))),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'spaghetti', 'ground
beef'}), support=0.008666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'ground beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.5118110236220472, lift=2.9414426644945246),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen vegetables'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.3110047846889952,
lift=3.164906221394116), OrderedStatistic(items_base=frozenset({'spaghetti',
'ground beef'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.22108843537414966, lift=2.322357514434345),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'ground
beef'}), items_add=frozenset({'spaghetti'}), confidence=0.5118110236220472,
lift=2.939190411305784), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'spaghetti'}), items_add=frozenset({'ground beef'}),
confidence=0.3125, lift=3.180122116689281),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'ground beef'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.22108843537414966,
lift=2.3191094619666046)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'milk'}), support=0.011066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'mineral water'}), items_add=frozenset({'0', 'milk'}),
confidence=0.30970149253731344, lift=2.392133052553914),
OrderedStatistic(items_base=frozenset({'mineral water', 'milk'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.23055555555555557,
lift=2.421802054154995), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'mineral water'}), items_add=frozenset({'milk'}),
confidence=0.30970149253731344, lift=2.3896720103187765),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'milk'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23055555555555557,
lift=2.4184149184149186)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk', 'olive
oil'}), support=0.004666666666666667,

```



```

ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'olive oil'}), items_add=frozenset({'0', 'milk'}),
confidence=0.4117647058823529, lift=3.180468891985218),
OrderedStatistic(items_base=frozenset({'milk', 'olive oil'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2734375,
lift=2.8722426470588234), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.4166666666666667, lift=3.2150205761316877),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'olive oil'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2755905511811024,
lift=2.8908099774241505)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp', 'milk'}),
support=0.004666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'0', 'milk'}), confidence=0.28,
lift=2.1627188465499487), OrderedStatistic(items_base=frozenset({'shrimp',
'milk'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.26515151515151514, lift=2.7852049910873435),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'shrimp'}),
items_add=frozenset({'milk'}), confidence=0.28, lift=2.160493827160494),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'milk'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.26515151515151514,
lift=2.781309599491417)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk', 'soup'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'soup'}), items_add=frozenset({'0', 'milk'}), confidence=0.5,
lift=3.861997940267765), OrderedStatistic(items_base=frozenset({'milk',
'soup'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.2631578947368421, lift=2.7642636001769123),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'soup'}),
items_add=frozenset({'milk'}), confidence=0.5, lift=3.858024691358025),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'soup'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2631578947368421,
lift=2.760397497239602)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk',
'spaghetti'}), support=0.008133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen
vegetables'}), items_add=frozenset({'0', 'milk'}),
confidence=0.29186602870813394, lift=2.254372003409891),
OrderedStatistic(items_base=frozenset({'spaghetti', 'milk'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.22932330827067668,
lift=2.4088582801541665), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'spaghetti'}), items_add=frozenset({'milk'}),
confidence=0.2932692307692308, lift=2.262879867046534),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'spaghetti'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.230188679245283,

```

```

lift=2.4145665655099613))),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'milk', 'tomatoes'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'tomatoes'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.29523809523809524,
lift=3.1012404961984794), OrderedStatistic(items_base=frozenset({'0', 'milk',
'tomatoes'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.29523809523809524, lift=3.096903096903097)]),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'olive oil'}), support=0.0065333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'olive oil'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5764705882352941, lift=2.420789144325143),
OrderedStatistic(items_base=frozenset({'mineral water', 'olive oil'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.23786407766990292,
lift=2.4985722444317533), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'olive oil'}), items_add=frozenset({'mineral water'}),
confidence=0.5833333333333334, lift=2.4482372691662007),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'olive oil'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.23786407766990292,
lift=2.4950777377961844)]),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'shrimp'}), support=0.0072,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'mineral water'}), items_add=frozenset({'0', 'shrimp'}),
confidence=0.20149253731343283, lift=2.824661738038778),
OrderedStatistic(items_base=frozenset({'mineral water', 'shrimp'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.3068181818181818,
lift=3.222880061115355), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'mineral water'}), items_add=frozenset({'shrimp'}),
confidence=0.20149253731343283, lift=2.824661738038778),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'shrimp'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.3068181818181818,
lift=3.2183725365543547)]),
  RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'soup'}), support=0.0050666666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'soup'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.6333333333333333, lift=2.6595744680851063),
OrderedStatistic(items_base=frozenset({'mineral water', 'soup'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.21965317919075145,
lift=2.3072812940204983), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'soup'}), items_add=frozenset({'mineral water'}),
confidence=0.6333333333333333, lift=2.6580861779518745),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'soup'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.21965317919075145,
lift=2.3040543271757143)]),

```

```

RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'spaghetti'}), support=0.012,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral
water'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.20089285714285715, lift=2.110219087635054),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'spaghetti'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.20089285714285715,
lift=2.107267732267732)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'tomatoes'}), support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.24043715846994534, lift=2.5256004040960645),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.24043715846994534,
lift=2.5220680958385873)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'turkey'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'turkey'}), items_add=frozenset({'0', 'mineral water'}), confidence=0.5,
lift=2.0996640537514), OrderedStatistic(items_base=frozenset({'mineral water',
'turkey'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.22916666666666667, lift=2.407212885154062),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'turkey'}),
items_add=frozenset({'mineral water'}), confidence=0.5, lift=2.098489087856743),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'turkey'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.22916666666666667,
lift=2.403846153846154)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'mineral water',
'whole wheat rice'}), support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'whole wheat rice'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.4852941176470588, lift=2.0379092286410643),
OrderedStatistic(items_base=frozenset({'mineral water', 'whole wheat rice'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2185430463576159,
lift=2.2956202348489065), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'whole wheat rice'}), items_add=frozenset({'mineral water'}),
confidence=0.4852941176470588, lift=2.036768820566839),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'whole wheat
rice'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.2185430463576159, lift=2.292409577177789)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'spaghetti', 'olive
oil'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'olive oil'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4941176470588235, lift=2.839756592292089),
OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen vegetables'}),

```

```

items_add=frozenset({'0', 'olive oil'}), confidence=0.20095693779904306,
lift=3.063367954253705), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.2441860465116279, lift=2.5649794801641583),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'olive oil'}),
items_add=frozenset({'spaghetti'}), confidence=0.5, lift=2.8713629402756506),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'spaghetti'}),
items_add=frozenset({'olive oil'}), confidence=0.20192307692307693,
lift=3.0718520830082694), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'olive oil'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24561403508771928, lift=2.576370997423629)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp',
'spaghetti'}), support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.36,
lift=2.0689655172413794), OrderedStatistic(items_base=frozenset({'spaghetti',
'frozen vegetables'}), items_add=frozenset({'0', 'shrimp'}),
confidence=0.21531100478468898, lift=3.0183785717479763),
OrderedStatistic(items_base=frozenset({'spaghetti', 'shrimp'}),
items_add=frozenset({'0', 'frozen vegetables'}), confidence=0.2830188679245283,
lift=2.9728872681147926), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'shrimp'}), items_add=frozenset({'spaghetti'}), confidence=0.36,
lift=2.0673813169984685), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'spaghetti'}), items_add=frozenset({'shrimp'}),
confidence=0.21634615384615385, lift=3.032890007189073),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'spaghetti'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2830188679245283,
lift=2.968729383823723)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'shrimp',
'tomatoes'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'shrimp'}), items_add=frozenset({'0', 'tomatoes'}),
confidence=0.24000000000000002, lift=3.5087719298245617),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}),
items_add=frozenset({'0', 'shrimp'}), confidence=0.24793388429752067,
lift=3.475708658376458), OrderedStatistic(items_base=frozenset({'shrimp',
'tomatoes'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.35714285714285715, lift=3.751500600240096),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'shrimp'}),
items_add=frozenset({'tomatoes'}), confidence=0.24000000000000002,
lift=3.5087719298245617), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'tomatoes'}), items_add=frozenset({'shrimp'}),
confidence=0.24793388429752067, lift=3.475708658376458),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.35714285714285715,
lift=3.746253746253746)]),
RelationRecord(items=frozenset({'0', 'frozen vegetables', 'spaghetti',

```

```

'tomatoes'})), support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'frozen
vegetables'}), items_add=frozenset({'0', 'tomatoes'}),
confidence=0.23923444976076555, lift=3.497579674864993),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.4132231404958678,
lift=2.374845635033723), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'0', 'frozen vegetables'}),
confidence=0.3184713375796178, lift=3.3452871594497666),
OrderedStatistic(items_base=frozenset({'0', 'frozen vegetables', 'spaghetti'}),
items_add=frozenset({'tomatoes'}), confidence=0.24038461538461542,
lift=3.5143949617633834), OrderedStatistic(items_base=frozenset({'0', 'frozen
vegetables', 'tomatoes'}), items_add=frozenset({'spaghetti'}),
confidence=0.4132231404958678, lift=2.3730272233683065),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'tomatoes'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.3184713375796178,
lift=3.340608436149837)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'grated cheese', 'ground
beef'}), support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'grated cheese'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.2900763358778626, lift=2.9519301480108133),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'grated cheese'}),
items_add=frozenset({'ground beef'}), confidence=0.2900763358778626,
lift=2.9519301480108133)]),
RelationRecord(items=frozenset({'0', 'grated cheese', 'spaghetti', 'ground
beef'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese',
'ground beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4705882352941176, lift=2.704530087897228),
OrderedStatistic(items_base=frozenset({'spaghetti', 'grated cheese'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.3225806451612903,
lift=3.282706701098612), OrderedStatistic(items_base=frozenset({'0', 'grated
cheese', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4705882352941176, lift=2.7024592379064947),
OrderedStatistic(items_base=frozenset({'0', 'grated cheese', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.3225806451612903,
lift=3.282706701098612)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'grated cheese',
'spaghetti'}), support=0.006266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'grated cheese'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.3587786259541985, lift=2.061946126173555),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'grated cheese'}),
items_add=frozenset({'spaghetti'}), confidence=0.3587786259541985,
lift=2.0603673006558108)]),
RelationRecord(items=frozenset({'0', 'green tea', 'ground beef', 'spaghetti'}),

```

```

support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'green tea', 'ground
beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.43243243243243246, lift=2.4852438645542096),
OrderedStatistic(items_base=frozenset({'spaghetti', 'green tea'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2412060301507538,
lift=2.4546068197159476), OrderedStatistic(items_base=frozenset({'0', 'green
tea', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.43243243243243246, lift=2.483340921319482),
OrderedStatistic(items_base=frozenset({'0', 'green tea', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.2412060301507538,
lift=2.4546068197159476)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'green tea', 'olive oil'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'green tea', 'olive
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.45945945945945954,
lift=2.640571606088848), OrderedStatistic(items_base=frozenset({'0', 'green
tea', 'olive oil'}), items_add=frozenset({'spaghetti'}),
confidence=0.45945945945945954, lift=2.6385497289019497)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'ground beef', 'herb &
pepper'}), support=0.0066666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'herb & pepper'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.390625, lift=3.975152645861601),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'herb & pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.390625,
lift=3.975152645861601)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'herb &
pepper'}), support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'herb
& pepper'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.4,
lift=2.298850574712644), OrderedStatistic(items_base=frozenset({'spaghetti',
'herb & pepper'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.3934426229508197, lift=4.003825878061259),
OrderedStatistic(items_base=frozenset({'0', 'ground beef', 'herb & pepper'}),
items_add=frozenset({'spaghetti'}), confidence=0.4, lift=2.2970903522205206),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'herb & pepper'}),
items_add=frozenset({'ground beef'}), confidence=0.3934426229508197,
lift=4.003825878061259)]),
RelationRecord(items=frozenset({'0', 'low fat yogurt', 'mineral water', 'ground
beef'}), support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'low fat yogurt',
'ground beef'}), items_add=frozenset({'0', 'mineral water'}), confidence=0.5,
lift=2.0996640537514), OrderedStatistic(items_base=frozenset({'low fat yogurt',
'mineral water'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.20111731843575417, lift=2.0466484237017046),
OrderedStatistic(items_base=frozenset({'0', 'low fat yogurt', 'ground beef'}),

```

```

items_add=frozenset({'mineral water'}), confidence=0.5, lift=2.098489087856743),
OrderedStatistic(items_base=frozenset({'0', 'low fat yogurt', 'mineral water'}),
items_add=frozenset({'ground beef'}), confidence=0.20224719101123595,
lift=2.0581464485539613))),
RelationRecord(items=frozenset({'0', 'low fat yogurt', 'spaghetti', 'ground
beef'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'low fat yogurt',
'ground beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4166666666666667, lift=2.3946360153256707),
OrderedStatistic(items_base=frozenset({'spaghetti', 'low fat yogurt'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2631578947368421,
lift=2.677997571948868), OrderedStatistic(items_base=frozenset({'0', 'low fat
yogurt', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4166666666666667, lift=2.392802450229709),
OrderedStatistic(items_base=frozenset({'0', 'low fat yogurt', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.2631578947368421,
lift=2.677997571948868)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'ground beef'}),
support=0.011066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.503030303030303, lift=2.1123892904408024),
OrderedStatistic(items_base=frozenset({'mineral water', 'ground beef'}),
items_add=frozenset({'0', 'milk'}), confidence=0.2703583061889251,
lift=2.088246443271821), OrderedStatistic(items_base=frozenset({'mineral water',
'milk'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.23055555555555557, lift=2.346223428312981),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'ground beef'}),
items_add=frozenset({'mineral water'}), confidence=0.503030303030303,
lift=2.1112072035407237), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'ground beef'}), items_add=frozenset({'milk'}),
confidence=0.2703583061889251, lift=2.086098041581212),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'milk'}),
items_add=frozenset({'ground beef'}), confidence=0.23055555555555557,
lift=2.346223428312981)]),
RelationRecord(items=frozenset({'0', 'milk', 'ground beef', 'olive oil'}),
support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.22424242424242424, lift=3.4183296378418326),
OrderedStatistic(items_base=frozenset({'ground beef', 'olive oil'}),
items_add=frozenset({'0', 'milk'}), confidence=0.3490566037735849,
lift=2.6961117696208925), OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.28906249999999994, lift=2.941612957937584),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'ground beef'}),
items_add=frozenset({'olive oil'}), confidence=0.22424242424242424,

```

```

lift=3.411395906324912), OrderedStatistic(items_base=frozenset({'0', 'ground
beef', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.3490566037735849, lift=2.6933379920801306),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'olive oil'}),
items_add=frozenset({'ground beef'}), confidence=0.2913385826771653,
lift=2.964775264692998))),
RelationRecord(items=frozenset({'0', 'milk', 'ground beef', 'soup'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'soup'}), items_add=frozenset({'0', 'milk'}), confidence=0.410958904109589,
lift=3.1742448824118616), OrderedStatistic(items_base=frozenset({'milk',
'soup'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.2631578947368421, lift=2.677997571948868),
OrderedStatistic(items_base=frozenset({'0', 'ground beef', 'soup'}),
items_add=frozenset({'milk'}), confidence=0.410958904109589,
lift=3.170979198376459), OrderedStatistic(items_base=frozenset({'0', 'milk',
'soup'}), items_add=frozenset({'ground beef'}), confidence=0.2631578947368421,
lift=2.677997571948868)]),
RelationRecord(items=frozenset({'0', 'milk', 'ground beef', 'spaghetti'}),
support=0.009733333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'ground
beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4424242424242424, lift=2.5426680599094396),
OrderedStatistic(items_base=frozenset({'spaghetti', 'milk'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2744360902255639,
lift=2.7927688964609625), OrderedStatistic(items_base=frozenset({'0', 'milk',
'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4424242424242424, lift=2.540721147153),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.27547169811320754,
lift=2.803307647013645)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'ground beef', 'olive
oil'}), support=0.006666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.24271844660194175, lift=2.469997760535364),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'olive oil'}),
items_add=frozenset({'ground beef'}), confidence=0.24271844660194175,
lift=2.469997760535364)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'ground beef',
'pancakes'}), support=0.007466666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'pancakes'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5137614678899083, lift=2.157452972661989),
OrderedStatistic(items_base=frozenset({'mineral water', 'pancakes'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.2213438735177866,
lift=2.252481752216281), OrderedStatistic(items_base=frozenset({'0', 'ground

```



```

beef', 'pancakes'})), items_add=frozenset({'mineral water'}),
confidence=0.5137614678899083, lift=2.1562456682564703),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'pancakes'}),
items_add=frozenset({'ground beef'}), confidence=0.2213438735177866,
lift=2.252481752216281))),
RelationRecord(items=frozenset({'0', 'mineral water', 'shrimp', 'ground
beef'}), support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.21590909090909088, lift=2.1971752806216847),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'shrimp'}),
items_add=frozenset({'ground beef'}), confidence=0.21590909090909088,
lift=2.1971752806216847)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'ground beef', 'soup'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'soup'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5205479452054794, lift=2.185951617604197),
OrderedStatistic(items_base=frozenset({'mineral water', 'soup'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.21965317919075145,
lift=2.2352765860659916), OrderedStatistic(items_base=frozenset({'0', 'ground
beef', 'soup'}), items_add=frozenset({'mineral water'}),
confidence=0.5205479452054794, lift=2.184728365439897),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'soup'}),
items_add=frozenset({'ground beef'}), confidence=0.21965317919075145,
lift=2.2352765860659916)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti', 'ground
beef'}), support=0.017066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'ground beef'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4169381107491857, lift=2.396196038788424),
OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral water'}),
items_add=frozenset({'0', 'ground beef'}), confidence=0.28571428571428575,
lift=2.907540220973057), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'ground beef'}), items_add=frozenset({'spaghetti'}),
confidence=0.4169381107491857, lift=2.3943612791875135),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'spaghetti'}),
items_add=frozenset({'ground beef'}), confidence=0.28571428571428575,
lift=2.907540220973057)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'tomatoes', 'ground
beef'}), support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'0', 'ground beef'}),
confidence=0.2240437158469945, lift=2.279956402784883),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'tomatoes'}),
items_add=frozenset({'ground beef'}), confidence=0.2240437158469945,
lift=2.279956402784883)]),

```

```

RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'olive oil'}),
support=0.0061333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'olive oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.4339622641509434, lift=2.494036000867491), OrderedStatistic(items_base=frozenset({'spaghetti', 'olive oil'}), items_add=frozenset({'0', 'ground beef'}), confidence=0.2674418604651163, lift=2.7215928812596637), OrderedStatistic(items_base=frozenset({'0', 'ground beef', 'olive oil'}), items_add=frozenset({'spaghetti'}), confidence=0.4339622641509434, lift=2.492126325522263), OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'olive oil'}), items_add=frozenset({'ground beef'}), confidence=0.26900584795321636, lift=2.7375086291032873)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'pancakes'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'pancakes'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.44036697247706424, lift=2.5308446694084155), OrderedStatistic(items_base=frozenset({'spaghetti', 'pancakes'}), items_add=frozenset({'0', 'ground beef'}), confidence=0.25396825396825395, lift=2.5844801964204946), OrderedStatistic(items_base=frozenset({'0', 'ground beef', 'pancakes'}), items_add=frozenset({'spaghetti'}), confidence=0.44036697247706424, lift=2.5289068097840595), OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'pancakes'}), items_add=frozenset({'ground beef'}), confidence=0.25396825396825395, lift=2.5844801964204946)]),
RelationRecord(items=frozenset({'0', 'shrimp', 'spaghetti', 'ground beef'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp', 'ground beef'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5232558139534884, lift=3.0072173215717726), OrderedStatistic(items_base=frozenset({'spaghetti', 'shrimp'}), items_add=frozenset({'0', 'ground beef'}), confidence=0.2830188679245283, lift=2.8801105962468956), OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'ground beef'}), items_add=frozenset({'spaghetti'}), confidence=0.5232558139534884, lift=3.004914704939635), OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.2830188679245283, lift=2.8801105962468956)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'ground beef', 'tomatoes'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'ground beef'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.47727272727272724, lift=2.7429467084639496), OrderedStatistic(items_base=frozenset({'spaghetti', 'tomatoes'}), items_add=frozenset({'0', 'ground beef'}), confidence=0.267515923566879, lift=2.722346576325091), OrderedStatistic(items_base=frozenset({'0', 'tomatoes', 'ground beef'}), items_add=frozenset({'spaghetti'}), confidence=0.47727272727272724, lift=2.7408464429903936),

```

```

OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'tomatoes'}),
items_add=frozenset({'ground beef'}), confidence=0.267515923566879,
lift=2.722346576325091)),
RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti', 'herb &
pepper'}), support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'herb & pepper'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.3515625, lift=2.0204741379310347),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'herb & pepper'}),
items_add=frozenset({'spaghetti'}), confidence=0.3515625,
lift=2.018927067381317))],
RelationRecord(items=frozenset({'0', 'low fat yogurt', 'milk', 'spaghetti'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'low fat
yogurt'}), items_add=frozenset({'0', 'milk'}), confidence=0.2894736842105263,
lift=2.235893544365548), OrderedStatistic(items_base=frozenset({'0', 'low fat
yogurt', 'spaghetti'}), items_add=frozenset({'milk'}),
confidence=0.2894736842105263, lift=2.2335932423651723)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'olive oil'}),
support=0.008533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'0', 'mineral water'}), confidence=0.5,
lift=2.0996640537514), OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'0', 'milk'}),
confidence=0.31067961165048547, lift=2.399688040554728),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'olive oil'}),
items_add=frozenset({'mineral water'}), confidence=0.5039370078740157,
lift=2.1150126239815994), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.31067961165048547, lift=2.3972192256981906)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'salmon'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'salmon'}), items_add=frozenset({'0', 'milk'}), confidence=0.25984251968503935,
lift=2.0070225516352163), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'salmon'}), items_add=frozenset({'milk'}),
confidence=0.2619047619047619, lift=2.020870076425632)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'shrimp', 'milk'}),
support=0.007866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'0', 'milk'}), confidence=0.3352272727272727,
lift=2.589294073588615), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'shrimp'}), items_add=frozenset({'milk'}),
confidence=0.3352272727272727, lift=2.5866301907968574)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'soup'}),
support=0.008533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'soup'}),

```

```

items_add=frozenset({'0', 'mineral water'}), confidence=0.5614035087719299,
lift=2.35751753403666), OrderedStatistic(items_base=frozenset({'mineral water',
'soup'}), items_add=frozenset({'0', 'milk'}), confidence=0.36994219653179194,
lift=2.8574320020478265), OrderedStatistic(items_base=frozenset({'0', 'milk',
'soup'}), items_add=frozenset({'mineral water'}), confidence=0.5614035087719299,
lift=2.3561982740847647), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'soup'}), items_add=frozenset({'milk'}), confidence=0.36994219653179194,
lift=2.8544922571897526))),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'spaghetti'}),
support=0.015733333333333332,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'mineral
water'}), items_add=frozenset({'0', 'milk'}), confidence=0.2633928571428571,
lift=2.0344453435339114), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'spaghetti'}), items_add=frozenset({'milk'}),
confidence=0.2633928571428571, lift=2.0323522927689592)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'milk', 'tomatoes'}),
support=0.006533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'0', 'milk'}), confidence=0.2677595628415301,
lift=2.0681737603619728), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'tomatoes'}), items_add=frozenset({'milk'}),
confidence=0.2677595628415301, lift=2.0660460095797073)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'turkey', 'milk'}),
support=0.006133333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'turkey', 'milk'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5411764705882353,
lift=2.2725775640603385), OrderedStatistic(items_base=frozenset({'mineral
water', 'turkey'}), items_add=frozenset({'0', 'milk'}),
confidence=0.3194444444444445, lift=2.46738757294885),
OrderedStatistic(items_base=frozenset({'0', 'turkey', 'milk'}),
items_add=frozenset({'mineral water'}), confidence=0.5411764705882353,
lift=2.271305836268475), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'turkey'}), items_add=frozenset({'milk'}),
confidence=0.3194444444444445, lift=2.4648491083676274)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'milk', 'olive oil'}),
support=0.007066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'olive
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.41406249999999994,
lift=2.379669540229885), OrderedStatistic(items_base=frozenset({'spaghetti',
'olive oil'}), items_add=frozenset({'0', 'milk'}),
confidence=0.3081395348837209, lift=2.380068498071995),
OrderedStatistic(items_base=frozenset({'0', 'milk', 'olive oil'}),
items_add=frozenset({'spaghetti'}), confidence=0.4173228346456692,
lift=2.396570643064716), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'olive oil'}), items_add=frozenset({'milk'}),
confidence=0.30994152046783624, lift=2.391524077683922)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'milk', 'soup'}),

```

```

support=0.004533333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'soup'}), items_add=frozenset({'0', 'milk'}), confidence=0.31775700934579443,
lift=2.454353831198206), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'soup'}), items_add=frozenset({'milk'}),
confidence=0.31775700934579443, lift=2.451828775816315)]),
RelationRecord(items=frozenset({'0', 'milk', 'spaghetti', 'tomatoes'}),
support=0.005866666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'tomatoes'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.41904761904761906,
lift=2.40831964969896), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'0', 'milk'}), confidence=0.2802547770700637,
lift=2.1646867435895754), OrderedStatistic(items_base=frozenset({'0', 'milk',
'tomatoes'}), items_add=frozenset({'spaghetti'}),
confidence=0.41904761904761906, lift=2.4064756070881645),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'tomatoes'}),
items_add=frozenset({'milk'}), confidence=0.2802547770700637,
lift=2.162459699614689)]),
RelationRecord(items=frozenset({'0', 'turkey', 'milk', 'spaghetti'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'turkey', 'milk'}),
items_add=frozenset({'0', 'spaghetti'}), confidence=0.4235294117647058,
lift=2.434077079107505), OrderedStatistic(items_base=frozenset({'spaghetti',
'turkey'}), items_add=frozenset({'0', 'milk'}), confidence=0.29032258064516125,
lift=2.2424504169296697), OrderedStatistic(items_base=frozenset({'0', 'turkey',
'milk'}), items_add=frozenset({'spaghetti'}), confidence=0.4235294117647058,
lift=2.432213314115845), OrderedStatistic(items_base=frozenset({'0', 'turkey',
'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.29032258064516125,
lift=2.240143369175627)]),
RelationRecord(items=frozenset({'0', 'whole wheat pasta', 'milk',
'spaghetti'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'whole wheat
pasta'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.40540540540540543, lift=2.3299161230195717),
OrderedStatistic(items_base=frozenset({'spaghetti', 'whole wheat pasta'}),
items_add=frozenset({'0', 'milk'}), confidence=0.45454545454545453,
lift=3.5109072184252406), OrderedStatistic(items_base=frozenset({'0', 'milk',
'whole wheat pasta'}), items_add=frozenset({'spaghetti'}),
confidence=0.40540540540540543, lift=2.328132113737014),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'whole wheat pasta'}),
items_add=frozenset({'milk'}), confidence=0.45454545454545453,
lift=3.5072951739618405)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'shrimp', 'olive oil'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp', 'olive
oil'}), items_add=frozenset({'0', 'mineral water'}), confidence=0.55,
lift=2.3096304591265397), OrderedStatistic(items_base=frozenset({'0', 'shrimp',

```

```

'olive oil'})), items_add=frozenset({'mineral water'}), confidence=0.55,
lift=2.308337996642418))),
  RelationRecord(items=frozenset({'0', 'mineral water', 'soup', 'olive oil'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'soup'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.2254335260115607, lift=3.4364866770054983),
OrderedStatistic(items_base=frozenset({'soup', 'olive oil'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.582089552238806,
lift=2.444385017800137), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'soup'}), items_add=frozenset({'olive oil'}),
confidence=0.2254335260115607, lift=3.4295161157945335),
OrderedStatistic(items_base=frozenset({'0', 'soup', 'olive oil'}),
items_add=frozenset({'mineral water'}), confidence=0.582089552238806,
lift=2.443017147057104))],
  RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti', 'olive
oil'}), support=0.010266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'olive oil'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.3737864077669903, lift=2.1481977457873005),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'olive oil'}),
items_add=frozenset({'spaghetti'}), confidence=0.3737864077669903,
lift=2.1465528776817973)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'tomatoes', 'olive
oil'}), support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'olive
oil'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5740740740740741, lift=2.4107253950479035),
OrderedStatistic(items_base=frozenset({'0', 'tomatoes', 'olive oil'}),
items_add=frozenset({'mineral water'}), confidence=0.5740740740740741,
lift=2.4093763601318163)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'soup', 'pancakes'}),
support=0.004266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup', 'pancakes'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.627450980392157,
lift=2.6348725380409728), OrderedStatistic(items_base=frozenset({'0', 'soup',
'pancakes'}), items_add=frozenset({'mineral water'}),
confidence=0.627450980392157, lift=2.6333980710359137)]),
  RelationRecord(items=frozenset({'0', 'mineral water', 'whole wheat rice',
'pancakes'}), support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'whole wheat rice'}), items_add=frozenset({'0', 'pancakes'}),
confidence=0.20529801324503313, lift=2.1595162683558886),
OrderedStatistic(items_base=frozenset({'whole wheat rice', 'pancakes'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.5961538461538463,
lift=2.5034456025497462), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'whole wheat rice'}), items_add=frozenset({'pancakes'}),

```

```

confidence=0.20529801324503313, lift=2.1595162683558886),
OrderedStatistic(items_base=frozenset({'0', 'whole wheat rice', 'pancakes'}),
items_add=frozenset({'mineral water'}), confidence=0.5961538461538463,
lift=2.5020446816753483)),
RelationRecord(items=frozenset({'0', 'mineral water', 'red wine',
'spaghetti'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water', 'red
wine'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.36585365853658536, lift=2.1026072329688814),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'red wine'}),
items_add=frozenset({'spaghetti'}), confidence=0.36585365853658536,
lift=2.1009972733724274)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti', 'salmon'}),
support=0.0068,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'salmon'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.40157480314960625, lift=2.307901167526473),
OrderedStatistic(items_base=frozenset({'spaghetti', 'salmon'}),
items_add=frozenset({'0', 'mineral water'}), confidence=0.504950495049505,
lift=2.1204528067588395), OrderedStatistic(items_base=frozenset({'0', 'mineral
water', 'salmon'}), items_add=frozenset({'spaghetti'}),
confidence=0.40476190476190477, lift=2.324436665937432),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'salmon'}),
items_add=frozenset({'mineral water'}), confidence=0.5099999999999999,
lift=2.1404588696138775)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'shrimp', 'spaghetti'}),
support=0.008533333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'shrimp'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.36363636363636365, lift=2.0898641588296765),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'shrimp'}),
items_add=frozenset({'spaghetti'}), confidence=0.36363636363636365,
lift=2.0882639565641097)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti', 'soup'}),
support=0.007466666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'soup'}), items_add=frozenset({'0', 'mineral water'}),
confidence=0.5233644859813084, lift=2.197779196450063),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'soup'}),
items_add=frozenset({'mineral water'}), confidence=0.5233644859813084,
lift=2.1965493256070583)]),
RelationRecord(items=frozenset({'0', 'mineral water', 'spaghetti',
'tomatoes'}), support=0.009333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'tomatoes'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.3825136612021858, lift=2.1983543747252057),
OrderedStatistic(items_base=frozenset({'0', 'mineral water', 'tomatoes'}),

```

```

items_add=frozenset({'spaghetti'}), confidence=0.3825136612021858,
lift=2.1966711018502245)],
RelationRecord(items=frozenset({'0', 'spaghetti', 'olive oil', 'pancakes'}),
support=0.005066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil',
'pancakes'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.4691358024691358, lift=2.696182772811125),
OrderedStatistic(items_base=frozenset({'spaghetti', 'olive oil'}),
items_add=frozenset({'0', 'pancakes'}), confidence=0.2209302325581395,
lift=2.3239505528556053), OrderedStatistic(items_base=frozenset({'spaghetti',
'pancakes'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.20105820105820105, lift=3.064911601496967),
OrderedStatistic(items_base=frozenset({'0', 'olive oil', 'pancakes'}),
items_add=frozenset({'spaghetti'}), confidence=0.4691358024691358,
lift=2.694118314332709), OrderedStatistic(items_base=frozenset({'0',
'spaghetti', 'olive oil'}), items_add=frozenset({'pancakes'}),
confidence=0.2222222222222222, lift=2.337540906965872),
OrderedStatistic(items_base=frozenset({'0', 'spaghetti', 'pancakes'}),
items_add=frozenset({'olive oil'}), confidence=0.20105820105820105,
lift=3.0586947422647217)]),
RelationRecord(items=frozenset({'0', 'spaghetti', 'olive oil', 'tomatoes'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes', 'olive
oil'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.6111111111111112,
lift=3.5121328224776507), OrderedStatistic(items_base=frozenset({'spaghetti',
'tomatoes'}), items_add=frozenset({'0', 'olive oil'}),
confidence=0.21019108280254778, lift=3.2041323597949356),
OrderedStatistic(items_base=frozenset({'0', 'tomatoes', 'olive oil'}),
items_add=frozenset({'spaghetti'}), confidence=0.6111111111111112,
lift=3.50944359367024), OrderedStatistic(items_base=frozenset({'0', 'spaghetti',
'tomatoes'}), items_add=frozenset({'olive oil'}),
confidence=0.21019108280254778, lift=3.1976331055154326)]),
RelationRecord(items=frozenset({'0', 'shrimp', 'spaghetti', 'tomatoes'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'tomatoes'}), items_add=frozenset({'0', 'spaghetti'}),
confidence=0.35714285714285715, lift=2.0525451559934322),
OrderedStatistic(items_base=frozenset({'0', 'shrimp', 'tomatoes'}),
items_add=frozenset({'spaghetti'}), confidence=0.35714285714285715,
lift=2.050973528768322)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'burgers', '0.0'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'milk', '0.0'}), confidence=0.3203125,
lift=2.4715470679012346), OrderedStatistic(items_base=frozenset({'chocolate',
'burgers', '0.0'}), items_add=frozenset({'milk'}), confidence=0.3203125,
lift=2.4715470679012346)]),

```



```

RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'burgers', '0.0'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'burgers'}), items_add=frozenset({'spaghetti', '0.0'}), confidence=0.375,
lift=2.153522205206738), OrderedStatistic(items_base=frozenset({'chocolate',
'burgers', '0.0'}), items_add=frozenset({'spaghetti'}), confidence=0.375,
lift=2.153522205206738)]),
RelationRecord(items=frozenset({'french fries', 'eggs', 'burgers', '0.0'}),
support=0.009066666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'french fries',
'burgers'}), items_add=frozenset({'eggs', '0.0'}),
confidence=0.41212121212121217, lift=2.292959266253035),
OrderedStatistic(items_base=frozenset({'eggs', 'french fries'}),
items_add=frozenset({'burgers', '0.0'}), confidence=0.2490842490842491,
lift=2.8564707463790033), OrderedStatistic(items_base=frozenset({'french fries',
'burgers', '0.0'}), items_add=frozenset({'eggs'}),
confidence=0.41212121212121217, lift=2.292959266253035),
OrderedStatistic(items_base=frozenset({'eggs', 'french fries', '0.0'}),
items_add=frozenset({'burgers'}), confidence=0.2490842490842491,
lift=2.8564707463790033)]),
RelationRecord(items=frozenset({'eggs', 'green tea', 'burgers', '0.0'}),
support=0.006,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'green
tea'}), items_add=frozenset({'burgers', '0.0'}), confidence=0.23560209424083772,
lift=2.7018588789086895), OrderedStatistic(items_base=frozenset({'eggs', 'green
tea', '0.0'}), items_add=frozenset({'burgers'}), confidence=0.23560209424083772,
lift=2.7018588789086895)]),
RelationRecord(items=frozenset({'eggs', 'ground beef', 'burgers', '0.0'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef'}), items_add=frozenset({'burgers', '0.0'}), confidence=0.2,
lift=2.293577981651376), OrderedStatistic(items_base=frozenset({'eggs', 'ground
beef', '0.0'}), items_add=frozenset({'burgers'}), confidence=0.2,
lift=2.293577981651376)]),
RelationRecord(items=frozenset({'eggs', 'pancakes', 'burgers', '0.0'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'eggs', '0.0'}),
confidence=0.3924050632911392, lift=2.1832625924952107),
OrderedStatistic(items_base=frozenset({'pancakes', 'burgers', '0.0'}),
items_add=frozenset({'eggs'}), confidence=0.3924050632911392,
lift=2.1832625924952107)]),
RelationRecord(items=frozenset({'french fries', 'milk', 'burgers', '0.0'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'french
fries'}), items_add=frozenset({'burgers', '0.0'}),
confidence=0.2359550561797753, lift=2.7059066075662304),

```

```

OrderedStatistic(items_base=frozenset({'milk', 'french fries', '0.0'}),
items_add=frozenset({'burgers'}), confidence=0.2359550561797753,
lift=2.7059066075662304)],
RelationRecord(items=frozenset({'spaghetti', 'french fries', 'burgers',
'0.0'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti', 'french
fries'}), items_add=frozenset({'burgers', '0.0'}),
confidence=0.2028985507246377, lift=2.3268182422550194),
OrderedStatistic(items_base=frozenset({'spaghetti', 'french fries', '0.0'}),
items_add=frozenset({'burgers'}), confidence=0.2028985507246377,
lift=2.3268182422550194)]),
RelationRecord(items=frozenset({'frozen vegetables', 'mineral water',
'burgers', '0.0'}), support=0.004933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.20218579234972675, lift=2.1208299896824485),
OrderedStatistic(items_base=frozenset({'mineral water', 'burgers', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.20218579234972675,
lift=2.1208299896824485)]),
RelationRecord(items=frozenset({'milk', 'ground beef', 'burgers', '0.0'}),
support=0.004133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.3444444444444444, lift=2.657750342935528),
OrderedStatistic(items_base=frozenset({'milk', 'burgers'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.23134328358208955,
lift=2.3542396565341543), OrderedStatistic(items_base=frozenset({'ground beef',
'burgers', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.3444444444444444, lift=2.657750342935528),
OrderedStatistic(items_base=frozenset({'milk', 'burgers', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.23134328358208955,
lift=2.3542396565341543)]),
RelationRecord(items=frozenset({'mineral water', 'ground beef', 'burgers',
'0.0'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'ground beef', '0.0'}),
confidence=0.21857923497267756, lift=2.2243477100340323),
OrderedStatistic(items_base=frozenset({'mineral water', 'burgers', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.21857923497267756,
lift=2.2243477100340323)]),
RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'burgers', '0.0'}),
support=0.005466666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'burgers'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.4555555555555555, lift=2.6161306789178154),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.25465838509316774,

```

```

lift=2.5915032404325076), OrderedStatistic(items_base=frozenset({'ground beef',
'burgers', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.45555555555555555, lift=2.6161306789178154),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.25465838509316774,
lift=2.5915032404325076))),
RelationRecord(items=frozenset({'mineral water', 'milk', 'burgers', '0.0'}),
support=0.006933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'burgers'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.28415300546448086, lift=2.1925386224111176),
OrderedStatistic(items_base=frozenset({'mineral water', 'burgers', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.28415300546448086,
lift=2.1925386224111176)]),
RelationRecord(items=frozenset({'spaghetti', 'milk', 'burgers', '0.0'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'burgers'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.35820895522388063,
lift=2.0570958378094217), OrderedStatistic(items_base=frozenset({'spaghetti',
'burgers'}), items_add=frozenset({'milk', '0.0'}), confidence=0.298136645962733,
lift=2.300437083045779), OrderedStatistic(items_base=frozenset({'milk',
'burgers', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.35820895522388063, lift=2.0570958378094217),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.298136645962733,
lift=2.300437083045779)]),
RelationRecord(items=frozenset({'spaghetti', 'pancakes', 'burgers', '0.0'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers',
'pancakes'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.4177215189873418, lift=2.3988601779518097),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers'}),
items_add=frozenset({'0.0', 'pancakes'}), confidence=0.2049689440993789,
lift=2.156054811704547), OrderedStatistic(items_base=frozenset({'pancakes',
'burgers', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.4177215189873418, lift=2.3988601779518097),
OrderedStatistic(items_base=frozenset({'spaghetti', 'burgers', '0.0'}),
items_add=frozenset({'pancakes'}), confidence=0.2049689440993789,
lift=2.156054811704547)]),
RelationRecord(items=frozenset({'spaghetti', 'cake', 'chocolate', '0.0'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake',
'chocolate'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.3823529411764706, lift=2.195748130799027),
OrderedStatistic(items_base=frozenset({'cake', 'chocolate', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.3823529411764706,
lift=2.195748130799027)]),

```

```

RelationRecord(items=frozenset({'cake', 'mineral water', 'milk', '0.0'}),
support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'milk'}),
items_add=frozenset({'mineral water', '0.0'}), confidence=0.48,
lift=2.0145495243424736), OrderedStatistic(items_base=frozenset({'cake', 'milk',
'0.0'}), items_add=frozenset({'mineral water'}), confidence=0.48,
lift=2.0145495243424736)]),
RelationRecord(items=frozenset({'spaghetti', 'cake', 'pancakes', '0.0'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cake', 'pancakes'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.34831460674157305,
lift=2.0002753067088803), OrderedStatistic(items_base=frozenset({'spaghetti',
'cake'}), items_add=frozenset({'0.0', 'pancakes'}),
confidence=0.22794117647058823, lift=2.39769820971867),
OrderedStatistic(items_base=frozenset({'cake', 'pancakes', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.34831460674157305,
lift=2.0002753067088803), OrderedStatistic(items_base=frozenset({'spaghetti',
'cake', '0.0'}), items_add=frozenset({'pancakes'}),
confidence=0.22794117647058823, lift=2.39769820971867)]),
RelationRecord(items=frozenset({'green tea', 'chocolate', 'chicken', '0.0'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'green tea', '0.0'}),
confidence=0.27272727272727276, lift=2.066115702479339),
OrderedStatistic(items_base=frozenset({'green tea', 'chicken'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.3370786516853933,
lift=2.0570300143534985), OrderedStatistic(items_base=frozenset({'chocolate',
'chicken', '0.0'}), items_add=frozenset({'green tea'}),
confidence=0.27272727272727276, lift=2.066115702479339),
OrderedStatistic(items_base=frozenset({'green tea', 'chicken', '0.0'}),
items_add=frozenset({'chocolate'}), confidence=0.3370786516853933,
lift=2.0570300143534985)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'chicken', '0.0'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.30909090909090914, lift=2.384960718294052),
OrderedStatistic(items_base=frozenset({'chocolate', 'chicken', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.30909090909090914,
lift=2.384960718294052)]),
RelationRecord(items=frozenset({'mineral water', 'chocolate', 'chicken',
'0.0'}), support=0.0076,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'chicken'}), items_add=frozenset({'mineral water', '0.0'}),
confidence=0.5181818181818182, lift=2.174797781960625),
OrderedStatistic(items_base=frozenset({'mineral water', 'chicken'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.3333333333333333,

```

```

lift=2.034174125305126), OrderedStatistic(items_base=frozenset({'chocolate',
'chicken', '0.0'}), items_add=frozenset({'mineral water'}),
confidence=0.5181818181818182, lift=2.174797781960625),
OrderedStatistic(items_base=frozenset({'mineral water', 'chicken', '0.0'}),
items_add=frozenset({'chocolate'}), confidence=0.3333333333333333,
lift=2.034174125305126))),
RelationRecord(items=frozenset({'eggs', 'milk', 'chicken', '0.0'}),
support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'chicken'}),
items_add=frozenset({'milk', '0.0'}), confidence=0.28703703703703703,
lift=2.2147919524462734), OrderedStatistic(items_base=frozenset({'eggs',
'chicken', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.28703703703703703, lift=2.2147919524462734))],
RelationRecord(items=frozenset({'spaghetti', 'ground beef', 'chicken', '0.0'}),
support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef',
'chicken'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.5070422535211268, lift=2.911804671828829),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chicken'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.27906976744186046,
lift=2.839923006531823), OrderedStatistic(items_base=frozenset({'ground beef',
'chicken', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.5070422535211268, lift=2.911804671828829),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chicken', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.27906976744186046,
lift=2.839923006531823))],
RelationRecord(items=frozenset({'mineral water', 'milk', 'chicken', '0.0'}),
support=0.0066666666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.29239766081871343, lift=2.2561547902678507),
OrderedStatistic(items_base=frozenset({'mineral water', 'chicken', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.29239766081871343,
lift=2.2561547902678507))],
RelationRecord(items=frozenset({'spaghetti', 'milk', 'chicken', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'chicken'}),
items_add=frozenset({'spaghetti', '0.0'}), confidence=0.36936936936936937,
lift=2.1211870369603907), OrderedStatistic(items_base=frozenset({'spaghetti',
'chicken'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.3178294573643411, lift=2.452387788305101),
OrderedStatistic(items_base=frozenset({'milk', 'chicken', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.36936936936936937,
lift=2.1211870369603907), OrderedStatistic(items_base=frozenset({'spaghetti',
'chicken', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.3178294573643411, lift=2.452387788305101))],
RelationRecord(items=frozenset({'mineral water', 'pancakes', 'chicken',

```

```

'0.0'}), support=0.0048,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chicken'}), items_add=frozenset({'0.0', 'pancakes'}),
confidence=0.21052631578947364, lift=2.214512438178194),
OrderedStatistic(items_base=frozenset({'chicken', 'pancakes'}),
items_add=frozenset({'mineral water', '0.0'}), confidence=0.5294117647058822,
lift=2.2219296224365515), OrderedStatistic(items_base=frozenset({'mineral
water', 'chicken', '0.0'}), items_add=frozenset({'pancakes'}),
confidence=0.21052631578947364, lift=2.214512438178194),
OrderedStatistic(items_base=frozenset({'pancakes', 'chicken', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.5294117647058822,
lift=2.2219296224365515)]),
RelationRecord(items=frozenset({'cookies', 'chocolate', 'french fries',
'0.0'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cookies',
'chocolate'}), items_add=frozenset({'french fries', '0.0'}),
confidence=0.38461538461538464, lift=2.2500900036001443),
OrderedStatistic(items_base=frozenset({'cookies', 'chocolate', '0.0'}),
items_add=frozenset({'french fries'}), confidence=0.38461538461538464,
lift=2.2500900036001443)]),
RelationRecord(items=frozenset({'eggs', 'cooking oil', 'chocolate', '0.0'}),
support=0.0045333333333333334,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'chocolate', '0.0'}),
confidence=0.3863636363636364, lift=2.3577927361491238),
OrderedStatistic(items_base=frozenset({'eggs', 'cooking oil', '0.0'}),
items_add=frozenset({'chocolate'}), confidence=0.3863636363636364,
lift=2.3577927361491238)]),
RelationRecord(items=frozenset({'cooking oil', 'chocolate', 'milk', '0.0'}),
support=0.0044,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'cooking oil',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.3235294117647059, lift=2.4963689179375455),
OrderedStatistic(items_base=frozenset({'cooking oil', 'milk'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.38372093023255816,
lift=2.34166556285125), OrderedStatistic(items_base=frozenset({'cooking oil',
'chocolate', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.3235294117647059, lift=2.4963689179375455),
OrderedStatistic(items_base=frozenset({'cooking oil', 'milk', '0.0'}),
items_add=frozenset({'chocolate'}), confidence=0.38372093023255816,
lift=2.34166556285125)]),
RelationRecord(items=frozenset({'eggs', 'milk', 'chocolate', '0.0'}),
support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.27710843373493976, lift=2.1381823590658935),
OrderedStatistic(items_base=frozenset({'eggs', 'chocolate', '0.0'}),

```

```

items_add=frozenset({'milk'}), confidence=0.27710843373493976,
lift=2.1381823590658935)],
RelationRecord(items=frozenset({'eggs', 'chocolate', 'olive oil', '0.0'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'olive
oil'}), items_add=frozenset({'chocolate', '0.0'}),
confidence=0.3333333333333333, lift=2.034174125305126),
OrderedStatistic(items_base=frozenset({'eggs', 'olive oil', '0.0'}),
items_add=frozenset({'chocolate'}), confidence=0.3333333333333333,
lift=2.034174125305126)]),
RelationRecord(items=frozenset({'escalope', 'mineral water', 'chocolate',
'0.0'}), support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope', 'mineral
water'}), items_add=frozenset({'chocolate', '0.0'}), confidence=0.328125,
lift=2.002390154597234), OrderedStatistic(items_base=frozenset({'escalope',
'mineral water', '0.0'}), items_add=frozenset({'chocolate'}),
confidence=0.328125, lift=2.002390154597234)]),
RelationRecord(items=frozenset({'frozen smoothie', 'milk', 'chocolate',
'0.0'}), support=0.0041333333333333335,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.2767857142857143, lift=2.1356922398589067),
OrderedStatistic(items_base=frozenset({'frozen smoothie', 'chocolate', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.2767857142857143,
lift=2.1356922398589067)]),
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'ground
beef', '0.0'}), support=0.0057333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'ground beef', '0.0'}), confidence=0.25,
lift=2.5440976933514245), OrderedStatistic(items_base=frozenset({'chocolate',
'ground beef'}), items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.2485549132947977, lift=2.6072193702251507),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.3385826771653543,
lift=2.0662083634989075), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'chocolate', '0.0'}), items_add=frozenset({'ground beef'}),
confidence=0.25, lift=2.5440976933514245),
OrderedStatistic(items_base=frozenset({'chocolate', 'ground beef', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.2485549132947977,
lift=2.6072193702251507), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'ground beef', '0.0'}), items_add=frozenset({'chocolate'}),
confidence=0.3385826771653543, lift=2.0662083634989075)]),
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'chocolate',
'0.0'}), support=0.008,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.3488372093023256, lift=2.691645133505599),

```

```

OrderedStatistic(items_base=frozenset({'milk', 'chocolate'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.24896265560165975, lift=2.6114963874299972),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.33898305084745767,
lift=2.068651652852671), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'chocolate', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.3488372093023256, lift=2.691645133505599),
OrderedStatistic(items_base=frozenset({'milk', 'chocolate', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.24896265560165975,
lift=2.6114963874299972), OrderedStatistic(items_base=frozenset({'frozen
vegetables', 'milk', '0.0'}), items_add=frozenset({'chocolate'}),
confidence=0.33898305084745767, lift=2.068651652852671)]),
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'olive oil',
'0.0'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.24390243902439024, lift=2.558417192563534),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}),
items_add=frozenset({'chocolate', '0.0'}), confidence=0.3529411764705882,
lift=2.153831426793663), OrderedStatistic(items_base=frozenset({'chocolate',
'olive oil', '0.0'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.24390243902439024, lift=2.558417192563534),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil',
'0.0'}), items_add=frozenset({'chocolate'}), confidence=0.3529411764705882,
lift=2.153831426793663)]),
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'chocolate',
'0.0'}), support=0.005333333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables',
'chocolate'}), items_add=frozenset({'shrimp', '0.0'}),
confidence=0.23255813953488372, lift=3.260160834601174),
OrderedStatistic(items_base=frozenset({'shrimp', 'chocolate'}),
items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.29629629629629634, lift=3.1080031080031083),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate',
'0.0'}), items_add=frozenset({'shrimp'}), confidence=0.23255813953488372,
lift=3.260160834601174), OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate', '0.0'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.29629629629629634, lift=3.1080031080031083)]),
RelationRecord(items=frozenset({'spaghetti', 'frozen vegetables', 'chocolate',
'0.0'}), support=0.007866666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'frozen vegetables', '0.0'}),
confidence=0.20068027210884354, lift=2.1050378193235333),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chocolate', '0.0'}),
items_add=frozenset({'frozen vegetables'}), confidence=0.20068027210884354,
lift=2.1050378193235333)]),

```



```

RelationRecord(items=frozenset({'herb & pepper', 'chocolate', 'ground beef',
'0.0'}), support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'herb &
pepper'}), items_add=frozenset({'ground beef', '0.0'}),
confidence=0.4411764705882353, lift=4.489584164737808),
OrderedStatistic(items_base=frozenset({'chocolate', 'herb & pepper', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.4411764705882353,
lift=4.489584164737808)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'ground beef', '0.0'}),
support=0.006133333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'milk', '0.0'}), confidence=0.26589595375722547,
lift=2.051666309855135), OrderedStatistic(items_base=frozenset({'chocolate',
'ground beef', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.26589595375722547, lift=2.051666309855135)]),
RelationRecord(items=frozenset({'mineral water', 'chocolate', 'ground beef',
'0.0'}), support=0.010933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'ground beef', '0.0'}),
confidence=0.20759493670886076, lift=2.1125671985297907),
OrderedStatistic(items_base=frozenset({'mineral water', 'chocolate', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.20759493670886076,
lift=2.1125671985297907)]),
RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'ground beef',
'0.0'}), support=0.0092,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'ground
beef'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.3988439306358382, lift=2.290451362763236),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chocolate'}),
items_add=frozenset({'ground beef', '0.0'}), confidence=0.23469387755102042,
lift=2.388336610085011), OrderedStatistic(items_base=frozenset({'chocolate',
'ground beef', '0.0'}), items_add=frozenset({'spaghetti'}),
confidence=0.3988439306358382, lift=2.290451362763236),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chocolate', '0.0'}),
items_add=frozenset({'ground beef'}), confidence=0.23469387755102042,
lift=2.388336610085011)]),
RelationRecord(items=frozenset({'mineral water', 'milk', 'chocolate', '0.0'}),
support=0.014,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'mineral water',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.2658227848101266, lift=2.0511017346460387),
OrderedStatistic(items_base=frozenset({'mineral water', 'chocolate', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.2658227848101266,
lift=2.0511017346460387)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'olive oil', '0.0'}),
support=0.0052,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive

```

```

oil'}), items_add=frozenset({'milk', '0.0'}), confidence=0.31707317073170727,
lift=2.4465522433002107), OrderedStatistic(items_base=frozenset({'chocolate',
'olive oil', '0.0'}), items_add=frozenset({'milk'}),
confidence=0.31707317073170727, lift=2.4465522433002107)]),
RelationRecord(items=frozenset({'shrimp', 'milk', 'chocolate', '0.0'}),
support=0.0054666666666666665,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.3037037037037037, lift=2.343392775491541),
OrderedStatistic(items_base=frozenset({'shrimp', 'chocolate', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.3037037037037037,
lift=2.343392775491541)]),
RelationRecord(items=frozenset({'milk', 'chocolate', 'soup', '0.0'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'milk', '0.0'}), confidence=0.39473684210526316,
lift=3.045808966861599), OrderedStatistic(items_base=frozenset({'chocolate',
'soup', '0.0'}), items_add=frozenset({'milk'}), confidence=0.39473684210526316,
lift=3.045808966861599)]),
RelationRecord(items=frozenset({'spaghetti', 'milk', 'chocolate', '0.0'}),
support=0.010933333333333333,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti',
'chocolate'}), items_add=frozenset({'milk', '0.0'}),
confidence=0.2789115646258503, lift=2.15209540606366),
OrderedStatistic(items_base=frozenset({'spaghetti', 'chocolate', '0.0'}),
items_add=frozenset({'milk'}), confidence=0.2789115646258503,
lift=2.15209540606366)]),
RelationRecord(items=frozenset({'mineral water', 'chocolate', 'olive oil',
'0.0'}), support=0.008266666666666667,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'mineral water', '0.0'}),
confidence=0.5040650406504065, lift=2.115549974749887),
OrderedStatistic(items_base=frozenset({'chocolate', 'olive oil', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.5040650406504065,
lift=2.115549974749887)]),
RelationRecord(items=frozenset({'mineral water', 'chocolate', 'soup', '0.0'}),
support=0.0056,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'soup'}), items_add=frozenset({'mineral water', '0.0'}),
confidence=0.5526315789473685, lift=2.3193826760521903),
OrderedStatistic(items_base=frozenset({'chocolate', 'soup', '0.0'}),
items_add=frozenset({'mineral water'}), confidence=0.5526315789473685,
lift=2.3193826760521903)]),
RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'olive oil', '0.0'}),
support=0.007066666666666666,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'olive
oil'}), items_add=frozenset({'spaghetti', '0.0'}),

```

```

confidence=0.4308943089430894, lift=2.4745078997497476),
OrderedStatistic(items_base=frozenset({'chocolate', 'olive oil', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.4308943089430894,
lift=2.4745078997497476)),
RelationRecord(items=frozenset({'spaghetti', 'chocolate', 'salmon', '0.0'}),
support=0.004,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate',
'salmon'}), items_add=frozenset({'spaghetti', '0.0'}), confidence=0.375,
lift=2.153522205206738), OrderedStatistic(items_base=frozenset({'chocolate',

```

```
[14]: print("There are {} relation derived".format(len(result)))
```

```

lift=2.153522205206738),
RelationRecord(items=frozenset({'spaghetti', 'shrimp', 'chocolate', '0.0'}),
There are 778 relation derived
support=0.0064,

```

```
[15]: for i in range(0, len(result)):
      print(result[i][0])
```

```

confidence=0.3555555555555556, lift=2.0418580908626853),
OrderedStatistic(items_base=frozenset({'shrimp', 'chocolate', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.3555555555555556,
lift=2.0418580908626853), 'body spray'))
RelationRecord(items=frozenset({'spaghetti', 'tomatoes', 'chocolate', '0.0'}),
support=0.004933333333333333),
OrderedStatistic(items_base=frozenset({'tomatoes',
'chocolate'}), items_add=frozenset({'spaghetti', '0.0'}),
confidence=0.35238095238095235, lift=2.0236272150514107),
OrderedStatistic(items_base=frozenset({'tomatoes', 'chocolate', '0.0'}),
items_add=frozenset({'spaghetti'}), confidence=0.35238095238095235,
lift=2.0236272150514107), 'chocolate', 'mineral water'))
RelationRecord(items=frozenset({'cookies', 'green tea', 'french fries',
'eggs', 'ground beef', 'parmesan cheese'}),
support=0.004666666666666667),
OrderedStatistic(items_base=frozenset({'cookies', 'french
fries'}), items_add=frozenset({'green tea', '0.0'}),
confidence=0.35000000000000003, lift=2.651515151515152),
OrderedStatistic(items_base=frozenset({'cookies', 'green tea'}),
items_add=frozenset({'french fries', '0.0'}), confidence=0.3888888888888889,
lift=2.2750910036401457), 'peppered')
OrderedStatistic(items_base=frozenset({'cookies',
'fries', 'ice', '0.0'}), items_add=frozenset({'green tea'}),
confidence=0.35000000000000003, lift=2.651515151515152),
OrderedStatistic(items_base=frozenset({'cookies', 'green tea', '0.0'}),
items_add=frozenset({'french fries', 'ground beef', 'confidenc
e=0.3888888888888889,
lift=2.2750910036401457), 'pancakes'))
RelationRecord(items=frozenset({'eggs', 'cooking oil', 'milk', '0.0'}),
support=0.004),
OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'milk', '0.0'}), confidence=0.34090909090909094,
lift=2.6304713804713806), 'OrderedStatistic(items_base=frozenset({'eggs',
'cooking oil', 'spaghetti'}), items_add=frozenset({'milk'}),
confidence=0.34090909090909094, lift=2.6304713804713806))),
RelationRecord(items=frozenset({'mineral water', 'eggs', 'cooking oil',
'0.0'}), support=0.0064,
ordered_statistics=[OrderedStatistic(items_base=frozenset({'eggs', 'cooking
oil'}), items_add=frozenset({'mineral water', '0.0'}),
confidence=0.5454545454545455, lift=2.2892608231164475),
OrderedStatistic(items_base=frozenset({'eggs', 'cooking oil', '0.0'}),

```

```

frozenset({'pasta', 'shrimp'})
frozenset({'spaghetti', 'pepper'})
frozenset({'spaghetti', 'red wine'})
frozenset({'spaghetti', 'tomato sauce'})
frozenset({'0', 'almonds', 'burgers'})
frozenset({'0', 'black tea', 'milk'})
frozenset({'0', 'french fries', 'body spray'})
frozenset({'0', 'ham', 'burgers'})
frozenset({'0', 'cereals', 'milk'})
frozenset({'0', 'light cream', 'chicken'})
frozenset({'0', 'tomato sauce', 'chocolate'})
frozenset({'0', 'eggs', 'cider'})
frozenset({'0', 'escalope', 'mushroom cream sauce'})
frozenset({'0', 'escalope', 'pasta'})
frozenset({'0', 'extra dark chocolate', 'mineral water'})
frozenset({'0', 'fresh tuna', 'pancakes'})
frozenset({'0', 'frozen vegetables', 'parmesan cheese'})
frozenset({'0', 'frozen vegetables', 'shrimp'})
frozenset({'0', 'frozen vegetables', 'tomatoes'})
frozenset({'0', 'grated cheese', 'ground beef'})
frozenset({'0', 'ground beef', 'herb & pepper'})
frozenset({'0', 'ground beef', 'olive oil'})
frozenset({'0', 'ground beef', 'pepper'})
frozenset({'0', 'ground beef', 'rice'})
frozenset({'0', 'ground beef', 'salmon'})
frozenset({'0', 'spaghetti', 'ground beef'})
frozenset({'0', 'tomato sauce', 'ground beef'})
frozenset({'0', 'light mayo', 'pancakes'})
frozenset({'0', 'meatballs', 'milk'})
frozenset({'0', 'milk', 'soup'})
frozenset({'0', 'milk', 'whole wheat pasta'})
frozenset({'0', 'mineral water', 'nonfat milk'})
frozenset({'0', 'whole wheat pasta', 'olive oil'})
frozenset({'0', 'pasta', 'shrimp'})
frozenset({'0', 'spaghetti', 'pepper'})
frozenset({'0', 'red wine', 'spaghetti'})
frozenset({'0', 'tomato sauce', 'spaghetti'})
frozenset({'almonds', 'burgers', '0.0'})
frozenset({'black tea', 'milk', '0.0'})
frozenset({'french fries', 'body spray', '0.0'})
frozenset({'ham', 'burgers', '0.0'})
frozenset({'cereals', 'milk', '0.0'})
frozenset({'light cream', 'chicken', '0.0'})
frozenset({'tomato sauce', 'chocolate', '0.0'})
frozenset({'eggs', 'cider', '0.0'})
frozenset({'escalope', 'mushroom cream sauce', '0.0'})
frozenset({'escalope', 'pasta', '0.0'})
frozenset({'extra dark chocolate', 'mineral water', '0.0'})

```

```

frozenset({'fresh tuna', 'pancakes', '0.0'})
frozenset({'frozen vegetables', 'parmesan cheese', '0.0'})
frozenset({'frozen vegetables', 'shrimp', '0.0'})
frozenset({'frozen vegetables', 'tomatoes', '0.0'})
frozenset({'grated cheese', 'ground beef', '0.0'})
frozenset({'ground beef', 'herb & pepper', '0.0'})
frozenset({'ground beef', 'olive oil', '0.0'})
frozenset({'pepper', 'ground beef', '0.0'})
frozenset({'rice', 'ground beef', '0.0'})
frozenset({'ground beef', 'salmon', '0.0'})
frozenset({'spaghetti', 'ground beef', '0.0'})
frozenset({'tomato sauce', 'ground beef', '0.0'})
frozenset({'light mayo', 'pancakes', '0.0'})
frozenset({'meatballs', 'milk', '0.0'})
frozenset({'milk', 'olive oil', '0.0'})
frozenset({'milk', 'soup', '0.0'})
frozenset({'milk', 'whole wheat pasta', '0.0'})
frozenset({'nonfat milk', 'mineral water', '0.0'})
frozenset({'spaghetti', 'olive oil', '0.0'})
frozenset({'whole wheat pasta', 'olive oil', '0.0'})
frozenset({'pasta', 'shrimp', '0.0'})
frozenset({'spaghetti', 'pepper', '0.0'})
frozenset({'spaghetti', 'red wine', '0.0'})
frozenset({'spaghetti', 'tomato sauce', '0.0'})
frozenset({'milk', 'chocolate', 'burgers'})
frozenset({'spaghetti', 'chocolate', 'burgers'})
frozenset({'french fries', 'eggs', 'burgers'})
frozenset({'eggs', 'green tea', 'burgers'})
frozenset({'eggs', 'ground beef', 'burgers'})
frozenset({'eggs', 'burgers', 'pancakes'})
frozenset({'french fries', 'milk', 'burgers'})
frozenset({'spaghetti', 'french fries', 'burgers'})
frozenset({'frozen vegetables', 'mineral water', 'burgers'})
frozenset({'milk', 'ground beef', 'burgers'})
frozenset({'mineral water', 'ground beef', 'burgers'})
frozenset({'spaghetti', 'ground beef', 'burgers'})
frozenset({'mineral water', 'milk', 'burgers'})
frozenset({'spaghetti', 'milk', 'burgers'})
frozenset({'spaghetti', 'burgers', 'pancakes'})
frozenset({'spaghetti', 'cake', 'chocolate'})
frozenset({'cake', 'mineral water', 'milk'})
frozenset({'spaghetti', 'cake', 'pancakes'})
frozenset({'green tea', 'chocolate', 'chicken'})
frozenset({'milk', 'chocolate', 'chicken'})
frozenset({'mineral water', 'chocolate', 'chicken'})
frozenset({'eggs', 'milk', 'chicken'})
frozenset({'spaghetti', 'ground beef', 'chicken'})
frozenset({'mineral water', 'milk', 'chicken'})

```

```

frozenset({'spaghetti', 'milk', 'chicken'})
frozenset({'mineral water', 'chicken', 'pancakes'})
frozenset({'cookies', 'chocolate', 'french fries'})
frozenset({'eggs', 'cooking oil', 'chocolate'})
frozenset({'cooking oil', 'chocolate', 'milk'})
frozenset({'eggs', 'milk', 'chocolate'})
frozenset({'eggs', 'chocolate', 'olive oil'})
frozenset({'escalope', 'mineral water', 'chocolate'})
frozenset({'frozen smoothie', 'milk', 'chocolate'})
frozenset({'frozen vegetables', 'chocolate', 'ground beef'})
frozenset({'frozen vegetables', 'milk', 'chocolate'})
frozenset({'frozen vegetables', 'chocolate', 'olive oil'})
frozenset({'frozen vegetables', 'shrimp', 'chocolate'})
frozenset({'spaghetti', 'frozen vegetables', 'chocolate'})
frozenset({'herb & pepper', 'chocolate', 'ground beef'})
frozenset({'milk', 'chocolate', 'ground beef'})
frozenset({'mineral water', 'chocolate', 'ground beef'})
frozenset({'spaghetti', 'chocolate', 'ground beef'})
frozenset({'mineral water', 'milk', 'chocolate'})
frozenset({'milk', 'chocolate', 'olive oil'})
frozenset({'shrimp', 'milk', 'chocolate'})
frozenset({'milk', 'chocolate', 'soup'})
frozenset({'spaghetti', 'milk', 'chocolate'})
frozenset({'mineral water', 'chocolate', 'olive oil'})
frozenset({'mineral water', 'chocolate', 'soup'})
frozenset({'spaghetti', 'chocolate', 'olive oil'})
frozenset({'spaghetti', 'chocolate', 'salmon'})
frozenset({'spaghetti', 'shrimp', 'chocolate'})
frozenset({'spaghetti', 'tomatoes', 'chocolate'})
frozenset({'cookies', 'green tea', 'french fries'})
frozenset({'eggs', 'cooking oil', 'milk'})
frozenset({'mineral water', 'eggs', 'cooking oil'})
frozenset({'spaghetti', 'eggs', 'cooking oil'})
frozenset({'spaghetti', 'cooking oil', 'ground beef'})
frozenset({'mineral water', 'cooking oil', 'pancakes'})
frozenset({'spaghetti', 'mineral water', 'cooking oil'})
frozenset({'frozen vegetables', 'eggs', 'ground beef'})
frozenset({'frozen vegetables', 'eggs', 'milk'})
frozenset({'mineral water', 'eggs', 'grated cheese'})
frozenset({'spaghetti', 'eggs', 'grated cheese'})
frozenset({'eggs', 'ground beef', 'herb & pepper'})
frozenset({'eggs', 'milk', 'ground beef'})
frozenset({'mineral water', 'eggs', 'ground beef'})
frozenset({'spaghetti', 'eggs', 'ground beef'})
frozenset({'spaghetti', 'eggs', 'herb & pepper'})
frozenset({'eggs', 'milk', 'shrimp'})
frozenset({'mineral water', 'eggs', 'olive oil'})
frozenset({'mineral water', 'eggs', 'soup'})

```

```

frozenset({'spaghetti', 'eggs', 'olive oil'})
frozenset({'escalope', 'mineral water', 'milk'})
frozenset({'frozen vegetables', 'milk', 'french fries'})
frozenset({'spaghetti', 'ground beef', 'french fries'})
frozenset({'spaghetti', 'french fries', 'pancakes'})
frozenset({'mineral water', 'milk', 'fresh bread'})
frozenset({'spaghetti', 'frozen vegetables', 'frozen smoothie'})
frozenset({'mineral water', 'frozen smoothie', 'milk'})
frozenset({'spaghetti', 'frozen smoothie', 'milk'})
frozenset({'frozen vegetables', 'milk', 'ground beef'})
frozenset({'frozen vegetables', 'mineral water', 'ground beef'})
frozenset({'spaghetti', 'frozen vegetables', 'ground beef'})
frozenset({'frozen vegetables', 'mineral water', 'milk'})
frozenset({'frozen vegetables', 'milk', 'olive oil'})
frozenset({'frozen vegetables', 'shrimp', 'milk'})
frozenset({'frozen vegetables', 'milk', 'soup'})
frozenset({'spaghetti', 'frozen vegetables', 'milk'})
frozenset({'frozen vegetables', 'milk', 'tomatoes'})
frozenset({'frozen vegetables', 'mineral water', 'olive oil'})
frozenset({'frozen vegetables', 'mineral water', 'shrimp'})
frozenset({'frozen vegetables', 'mineral water', 'soup'})
frozenset({'spaghetti', 'frozen vegetables', 'mineral water'})
frozenset({'frozen vegetables', 'mineral water', 'tomatoes'})
frozenset({'frozen vegetables', 'mineral water', 'turkey'})
frozenset({'frozen vegetables', 'mineral water', 'whole wheat rice'})
frozenset({'spaghetti', 'frozen vegetables', 'olive oil'})
frozenset({'spaghetti', 'frozen vegetables', 'shrimp'})
frozenset({'frozen vegetables', 'shrimp', 'tomatoes'})
frozenset({'spaghetti', 'frozen vegetables', 'tomatoes'})
frozenset({'mineral water', 'grated cheese', 'ground beef'})
frozenset({'spaghetti', 'grated cheese', 'ground beef'})
frozenset({'spaghetti', 'mineral water', 'grated cheese'})
frozenset({'spaghetti', 'green tea', 'ground beef'})
frozenset({'spaghetti', 'green tea', 'olive oil'})
frozenset({'mineral water', 'ground beef', 'herb & pepper'})
frozenset({'spaghetti', 'ground beef', 'herb & pepper'})
frozenset({'low fat yogurt', 'mineral water', 'ground beef'})
frozenset({'spaghetti', 'low fat yogurt', 'ground beef'})
frozenset({'mineral water', 'milk', 'ground beef'})
frozenset({'milk', 'ground beef', 'olive oil'})
frozenset({'milk', 'ground beef', 'soup'})
frozenset({'spaghetti', 'milk', 'ground beef'})
frozenset({'mineral water', 'ground beef', 'olive oil'})
frozenset({'mineral water', 'ground beef', 'pancakes'})
frozenset({'mineral water', 'shrimp', 'ground beef'})
frozenset({'mineral water', 'ground beef', 'soup'})
frozenset({'spaghetti', 'mineral water', 'ground beef'})
frozenset({'mineral water', 'tomatoes', 'ground beef'})

```

```

frozenset({'spaghetti', 'ground beef', 'olive oil'})
frozenset({'spaghetti', 'ground beef', 'pancakes'})
frozenset({'spaghetti', 'shrimp', 'ground beef'})
frozenset({'spaghetti', 'tomatoes', 'ground beef'})
frozenset({'spaghetti', 'mineral water', 'herb & pepper'})
frozenset({'spaghetti', 'low fat yogurt', 'milk'})
frozenset({'mineral water', 'milk', 'olive oil'})
frozenset({'mineral water', 'milk', 'salmon'})
frozenset({'mineral water', 'shrimp', 'milk'})
frozenset({'mineral water', 'milk', 'soup'})
frozenset({'spaghetti', 'mineral water', 'milk'})
frozenset({'mineral water', 'milk', 'tomatoes'})
frozenset({'mineral water', 'turkey', 'milk'})
frozenset({'spaghetti', 'milk', 'olive oil'})
frozenset({'spaghetti', 'milk', 'soup'})
frozenset({'spaghetti', 'milk', 'tomatoes'})
frozenset({'spaghetti', 'turkey', 'milk'})
frozenset({'spaghetti', 'milk', 'whole wheat pasta'})
frozenset({'mineral water', 'shrimp', 'olive oil'})
frozenset({'mineral water', 'soup', 'olive oil'})
frozenset({'spaghetti', 'mineral water', 'olive oil'})
frozenset({'mineral water', 'tomatoes', 'olive oil'})
frozenset({'mineral water', 'soup', 'pancakes'})
frozenset({'mineral water', 'whole wheat rice', 'pancakes'})
frozenset({'spaghetti', 'mineral water', 'red wine'})
frozenset({'spaghetti', 'mineral water', 'salmon'})
frozenset({'spaghetti', 'mineral water', 'shrimp'})
frozenset({'spaghetti', 'mineral water', 'soup'})
frozenset({'spaghetti', 'mineral water', 'tomatoes'})
frozenset({'spaghetti', 'olive oil', 'pancakes'})
frozenset({'spaghetti', 'tomatoes', 'olive oil'})
frozenset({'spaghetti', 'shrimp', 'tomatoes'})
frozenset({'0', 'almonds', 'burgers', '0.0'})
frozenset({'0', 'black tea', 'milk', '0.0'})
frozenset({'0', 'french fries', 'body spray', '0.0'})
frozenset({'0', 'ham', 'burgers', '0.0'})
frozenset({'0', 'cereals', 'milk', '0.0'})
frozenset({'0', 'light cream', 'chicken', '0.0'})
frozenset({'0', 'tomato sauce', 'chocolate', '0.0'})
frozenset({'0', 'eggs', 'cider', '0.0'})
frozenset({'0', 'escalope', 'mushroom cream sauce', '0.0'})
frozenset({'0', 'escalope', 'pasta', '0.0'})
frozenset({'0', 'extra dark chocolate', 'mineral water', '0.0'})
frozenset({'0', 'fresh tuna', 'pancakes', '0.0'})
frozenset({'0', 'frozen vegetables', 'parmesan cheese', '0.0'})
frozenset({'0', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'0', 'frozen vegetables', 'tomatoes', '0.0'})
frozenset({'0', 'grated cheese', 'ground beef', '0.0'})

```



```

frozenset({'0', 'ground beef', 'herb & pepper', '0.0'})
frozenset({'0', 'ground beef', 'olive oil', '0.0'})
frozenset({'0', 'pepper', 'ground beef', '0.0'})
frozenset({'0', 'ground beef', 'rice', '0.0'})
frozenset({'0', 'ground beef', 'salmon', '0.0'})
frozenset({'0', 'spaghetti', 'ground beef', '0.0'})
frozenset({'0', 'tomato sauce', 'ground beef', '0.0'})
frozenset({'0', 'light mayo', 'pancakes', '0.0'})
frozenset({'0', 'meatballs', 'milk', '0.0'})
frozenset({'0', 'milk', 'soup', '0.0'})
frozenset({'0', 'milk', 'whole wheat pasta', '0.0'})
frozenset({'0', 'mineral water', 'nonfat milk', '0.0'})
frozenset({'0', 'whole wheat pasta', 'olive oil', '0.0'})
frozenset({'0', 'pasta', 'shrimp', '0.0'})
frozenset({'0', 'pepper', 'spaghetti', '0.0'})
frozenset({'0', 'red wine', 'spaghetti', '0.0'})
frozenset({'0', 'tomato sauce', 'spaghetti', '0.0'})
frozenset({'0', 'milk', 'chocolate', 'burgers'})
frozenset({'0', 'spaghetti', 'chocolate', 'burgers'})
frozenset({'0', 'french fries', 'eggs', 'burgers'})
frozenset({'0', 'eggs', 'green tea', 'burgers'})
frozenset({'0', 'eggs', 'ground beef', 'burgers'})
frozenset({'0', 'eggs', 'burgers', 'pancakes'})
frozenset({'0', 'french fries', 'milk', 'burgers'})
frozenset({'0', 'french fries', 'spaghetti', 'burgers'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'burgers'})
frozenset({'0', 'milk', 'ground beef', 'burgers'})
frozenset({'0', 'mineral water', 'ground beef', 'burgers'})
frozenset({'0', 'spaghetti', 'ground beef', 'burgers'})
frozenset({'0', 'mineral water', 'milk', 'burgers'})
frozenset({'0', 'spaghetti', 'milk', 'burgers'})
frozenset({'0', 'spaghetti', 'burgers', 'pancakes'})
frozenset({'0', 'cake', 'spaghetti', 'chocolate'})
frozenset({'0', 'cake', 'mineral water', 'milk'})
frozenset({'0', 'cake', 'spaghetti', 'pancakes'})
frozenset({'0', 'green tea', 'chocolate', 'chicken'})
frozenset({'0', 'milk', 'chocolate', 'chicken'})
frozenset({'0', 'mineral water', 'chocolate', 'chicken'})
frozenset({'0', 'eggs', 'milk', 'chicken'})
frozenset({'0', 'spaghetti', 'ground beef', 'chicken'})
frozenset({'0', 'mineral water', 'milk', 'chicken'})
frozenset({'0', 'spaghetti', 'milk', 'chicken'})
frozenset({'0', 'mineral water', 'chicken', 'pancakes'})
frozenset({'0', 'cookies', 'chocolate', 'french fries'})
frozenset({'0', 'eggs', 'cooking oil', 'chocolate'})
frozenset({'0', 'cooking oil', 'chocolate', 'milk'})
frozenset({'0', 'eggs', 'milk', 'chocolate'})
frozenset({'0', 'eggs', 'chocolate', 'olive oil'})

```

```

frozenset({'0', 'escalope', 'mineral water', 'chocolate'})
frozenset({'0', 'frozen smoothie', 'milk', 'chocolate'})
frozenset({'0', 'frozen vegetables', 'chocolate', 'ground beef'})
frozenset({'0', 'frozen vegetables', 'milk', 'chocolate'})
frozenset({'0', 'frozen vegetables', 'shrimp', 'chocolate'})
frozenset({'0', 'herb & pepper', 'chocolate', 'ground beef'})
frozenset({'0', 'milk', 'chocolate', 'ground beef'})
frozenset({'0', 'mineral water', 'chocolate', 'ground beef'})
frozenset({'0', 'spaghetti', 'chocolate', 'ground beef'})
frozenset({'0', 'mineral water', 'milk', 'chocolate'})
frozenset({'0', 'milk', 'chocolate', 'olive oil'})
frozenset({'0', 'shrimp', 'milk', 'chocolate'})
frozenset({'0', 'milk', 'chocolate', 'soup'})
frozenset({'0', 'milk', 'chocolate', 'spaghetti'})
frozenset({'0', 'mineral water', 'chocolate', 'olive oil'})
frozenset({'0', 'mineral water', 'chocolate', 'soup'})
frozenset({'0', 'spaghetti', 'chocolate', 'olive oil'})
frozenset({'0', 'shrimp', 'spaghetti', 'chocolate'})
frozenset({'0', 'spaghetti', 'chocolate', 'tomatoes'})
frozenset({'0', 'cookies', 'green tea', 'french fries'})
frozenset({'0', 'eggs', 'cooking oil', 'milk'})
frozenset({'0', 'mineral water', 'eggs', 'cooking oil'})
frozenset({'0', 'eggs', 'cooking oil', 'spaghetti'})
frozenset({'0', 'cooking oil', 'ground beef', 'spaghetti'})
frozenset({'0', 'mineral water', 'cooking oil', 'pancakes'})
frozenset({'0', 'mineral water', 'cooking oil', 'spaghetti'})
frozenset({'0', 'frozen vegetables', 'eggs', 'ground beef'})
frozenset({'0', 'frozen vegetables', 'eggs', 'milk'})
frozenset({'0', 'mineral water', 'eggs', 'grated cheese'})
frozenset({'0', 'eggs', 'grated cheese', 'spaghetti'})
frozenset({'0', 'eggs', 'ground beef', 'herb & pepper'})
frozenset({'0', 'eggs', 'milk', 'ground beef'})
frozenset({'0', 'mineral water', 'eggs', 'ground beef'})
frozenset({'0', 'eggs', 'spaghetti', 'ground beef'})
frozenset({'0', 'eggs', 'spaghetti', 'herb & pepper'})
frozenset({'0', 'eggs', 'milk', 'shrimp'})
frozenset({'0', 'mineral water', 'eggs', 'olive oil'})
frozenset({'0', 'mineral water', 'eggs', 'soup'})
frozenset({'0', 'eggs', 'spaghetti', 'olive oil'})
frozenset({'0', 'escalope', 'mineral water', 'milk'})
frozenset({'0', 'frozen vegetables', 'milk', 'french fries'})
frozenset({'0', 'spaghetti', 'ground beef', 'french fries'})
frozenset({'0', 'spaghetti', 'french fries', 'pancakes'})
frozenset({'0', 'mineral water', 'milk', 'fresh bread'})
frozenset({'0', 'frozen vegetables', 'frozen smoothie', 'spaghetti'})
frozenset({'0', 'mineral water', 'frozen smoothie', 'milk'})
frozenset({'0', 'frozen smoothie', 'milk', 'spaghetti'})
frozenset({'0', 'frozen vegetables', 'milk', 'ground beef'})

```

```

frozenset({'0', 'frozen vegetables', 'mineral water', 'ground beef'})
frozenset({'0', 'frozen vegetables', 'spaghetti', 'ground beef'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'milk'})
frozenset({'0', 'frozen vegetables', 'milk', 'olive oil'})
frozenset({'0', 'frozen vegetables', 'shrimp', 'milk'})
frozenset({'0', 'frozen vegetables', 'milk', 'soup'})
frozenset({'0', 'frozen vegetables', 'milk', 'spaghetti'})
frozenset({'0', 'frozen vegetables', 'milk', 'tomatoes'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'olive oil'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'shrimp'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'soup'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'spaghetti'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'tomatoes'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'turkey'})
frozenset({'0', 'frozen vegetables', 'mineral water', 'whole wheat rice'})
frozenset({'0', 'frozen vegetables', 'spaghetti', 'olive oil'})
frozenset({'0', 'frozen vegetables', 'shrimp', 'spaghetti'})
frozenset({'0', 'frozen vegetables', 'shrimp', 'tomatoes'})
frozenset({'0', 'frozen vegetables', 'spaghetti', 'tomatoes'})
frozenset({'0', 'mineral water', 'grated cheese', 'ground beef'})
frozenset({'0', 'grated cheese', 'spaghetti', 'ground beef'})
frozenset({'0', 'mineral water', 'grated cheese', 'spaghetti'})
frozenset({'0', 'green tea', 'ground beef', 'spaghetti'})
frozenset({'0', 'spaghetti', 'green tea', 'olive oil'})
frozenset({'0', 'mineral water', 'ground beef', 'herb & pepper'})
frozenset({'0', 'spaghetti', 'ground beef', 'herb & pepper'})
frozenset({'0', 'low fat yogurt', 'mineral water', 'ground beef'})
frozenset({'0', 'low fat yogurt', 'spaghetti', 'ground beef'})
frozenset({'0', 'mineral water', 'milk', 'ground beef'})
frozenset({'0', 'milk', 'ground beef', 'olive oil'})
frozenset({'0', 'milk', 'ground beef', 'soup'})
frozenset({'0', 'milk', 'ground beef', 'spaghetti'})
frozenset({'0', 'mineral water', 'ground beef', 'olive oil'})
frozenset({'0', 'mineral water', 'ground beef', 'pancakes'})
frozenset({'0', 'mineral water', 'shrimp', 'ground beef'})
frozenset({'0', 'mineral water', 'ground beef', 'soup'})
frozenset({'0', 'mineral water', 'spaghetti', 'ground beef'})
frozenset({'0', 'mineral water', 'tomatoes', 'ground beef'})
frozenset({'0', 'spaghetti', 'ground beef', 'olive oil'})
frozenset({'0', 'spaghetti', 'ground beef', 'pancakes'})
frozenset({'0', 'shrimp', 'spaghetti', 'ground beef'})
frozenset({'0', 'spaghetti', 'ground beef', 'tomatoes'})
frozenset({'0', 'mineral water', 'spaghetti', 'herb & pepper'})
frozenset({'0', 'low fat yogurt', 'milk', 'spaghetti'})
frozenset({'0', 'mineral water', 'milk', 'olive oil'})
frozenset({'0', 'mineral water', 'milk', 'salmon'})
frozenset({'0', 'mineral water', 'shrimp', 'milk'})
frozenset({'0', 'mineral water', 'milk', 'soup'})

```

```

frozenset({'0', 'mineral water', 'milk', 'spaghetti'})
frozenset({'0', 'mineral water', 'milk', 'tomatoes'})
frozenset({'0', 'mineral water', 'turkey', 'milk'})
frozenset({'0', 'spaghetti', 'milk', 'olive oil'})
frozenset({'0', 'spaghetti', 'milk', 'soup'})
frozenset({'0', 'milk', 'spaghetti', 'tomatoes'})
frozenset({'0', 'turkey', 'milk', 'spaghetti'})
frozenset({'0', 'whole wheat pasta', 'milk', 'spaghetti'})
frozenset({'0', 'mineral water', 'shrimp', 'olive oil'})
frozenset({'0', 'mineral water', 'soup', 'olive oil'})
frozenset({'0', 'mineral water', 'spaghetti', 'olive oil'})
frozenset({'0', 'mineral water', 'tomatoes', 'olive oil'})
frozenset({'0', 'mineral water', 'soup', 'pancakes'})
frozenset({'0', 'mineral water', 'whole wheat rice', 'pancakes'})
frozenset({'0', 'mineral water', 'red wine', 'spaghetti'})
frozenset({'0', 'mineral water', 'spaghetti', 'salmon'})
frozenset({'0', 'mineral water', 'shrimp', 'spaghetti'})
frozenset({'0', 'mineral water', 'spaghetti', 'soup'})
frozenset({'0', 'mineral water', 'spaghetti', 'tomatoes'})
frozenset({'0', 'spaghetti', 'olive oil', 'pancakes'})
frozenset({'0', 'spaghetti', 'olive oil', 'tomatoes'})
frozenset({'0', 'shrimp', 'spaghetti', 'tomatoes'})
frozenset({'milk', 'chocolate', 'burgers', '0.0'})
frozenset({'spaghetti', 'chocolate', 'burgers', '0.0'})
frozenset({'french fries', 'eggs', 'burgers', '0.0'})
frozenset({'eggs', 'green tea', 'burgers', '0.0'})
frozenset({'eggs', 'ground beef', 'burgers', '0.0'})
frozenset({'eggs', 'pancakes', 'burgers', '0.0'})
frozenset({'french fries', 'milk', 'burgers', '0.0'})
frozenset({'spaghetti', 'french fries', 'burgers', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'burgers', '0.0'})
frozenset({'milk', 'ground beef', 'burgers', '0.0'})
frozenset({'mineral water', 'ground beef', 'burgers', '0.0'})
frozenset({'spaghetti', 'ground beef', 'burgers', '0.0'})
frozenset({'mineral water', 'milk', 'burgers', '0.0'})
frozenset({'spaghetti', 'milk', 'burgers', '0.0'})
frozenset({'spaghetti', 'pancakes', 'burgers', '0.0'})
frozenset({'spaghetti', 'cake', 'chocolate', '0.0'})
frozenset({'cake', 'mineral water', 'milk', '0.0'})
frozenset({'spaghetti', 'cake', 'pancakes', '0.0'})
frozenset({'green tea', 'chocolate', 'chicken', '0.0'})
frozenset({'milk', 'chocolate', 'chicken', '0.0'})
frozenset({'mineral water', 'chocolate', 'chicken', '0.0'})
frozenset({'eggs', 'milk', 'chicken', '0.0'})
frozenset({'spaghetti', 'ground beef', 'chicken', '0.0'})
frozenset({'mineral water', 'milk', 'chicken', '0.0'})
frozenset({'spaghetti', 'milk', 'chicken', '0.0'})
frozenset({'mineral water', 'pancakes', 'chicken', '0.0'})

```

```

frozenset({'cookies', 'chocolate', 'french fries', '0.0'})
frozenset({'eggs', 'cooking oil', 'chocolate', '0.0'})
frozenset({'cooking oil', 'chocolate', 'milk', '0.0'})
frozenset({'eggs', 'milk', 'chocolate', '0.0'})
frozenset({'eggs', 'chocolate', 'olive oil', '0.0'})
frozenset({'escalope', 'mineral water', 'chocolate', '0.0'})
frozenset({'frozen smoothie', 'milk', 'chocolate', '0.0'})
frozenset({'frozen vegetables', 'chocolate', 'ground beef', '0.0'})
frozenset({'frozen vegetables', 'milk', 'chocolate', '0.0'})
frozenset({'frozen vegetables', 'chocolate', 'olive oil', '0.0'})
frozenset({'frozen vegetables', 'shrimp', 'chocolate', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'chocolate', '0.0'})
frozenset({'herb & pepper', 'chocolate', 'ground beef', '0.0'})
frozenset({'milk', 'chocolate', 'ground beef', '0.0'})
frozenset({'mineral water', 'chocolate', 'ground beef', '0.0'})
frozenset({'spaghetti', 'chocolate', 'ground beef', '0.0'})
frozenset({'mineral water', 'milk', 'chocolate', '0.0'})
frozenset({'milk', 'chocolate', 'olive oil', '0.0'})
frozenset({'shrimp', 'milk', 'chocolate', '0.0'})
frozenset({'milk', 'chocolate', 'soup', '0.0'})
frozenset({'spaghetti', 'milk', 'chocolate', '0.0'})
frozenset({'mineral water', 'chocolate', 'olive oil', '0.0'})
frozenset({'mineral water', 'chocolate', 'soup', '0.0'})
frozenset({'spaghetti', 'chocolate', 'olive oil', '0.0'})
frozenset({'spaghetti', 'chocolate', 'salmon', '0.0'})
frozenset({'spaghetti', 'shrimp', 'chocolate', '0.0'})
frozenset({'spaghetti', 'tomatoes', 'chocolate', '0.0'})
frozenset({'cookies', 'green tea', 'french fries', '0.0'})
frozenset({'eggs', 'cooking oil', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'cooking oil', '0.0'})
frozenset({'spaghetti', 'eggs', 'cooking oil', '0.0'})
frozenset({'spaghetti', 'cooking oil', 'ground beef', '0.0'})
frozenset({'mineral water', 'cooking oil', 'pancakes', '0.0'})
frozenset({'spaghetti', 'mineral water', 'cooking oil', '0.0'})
frozenset({'frozen vegetables', 'eggs', 'ground beef', '0.0'})
frozenset({'frozen vegetables', 'eggs', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'grated cheese', '0.0'})
frozenset({'spaghetti', 'eggs', 'grated cheese', '0.0'})
frozenset({'eggs', 'ground beef', 'herb & pepper', '0.0'})
frozenset({'eggs', 'milk', 'ground beef', '0.0'})
frozenset({'mineral water', 'eggs', 'ground beef', '0.0'})
frozenset({'spaghetti', 'eggs', 'ground beef', '0.0'})
frozenset({'spaghetti', 'eggs', 'herb & pepper', '0.0'})
frozenset({'eggs', 'milk', 'shrimp', '0.0'})
frozenset({'mineral water', 'eggs', 'olive oil', '0.0'})
frozenset({'mineral water', 'eggs', 'soup', '0.0'})
frozenset({'spaghetti', 'eggs', 'olive oil', '0.0'})
frozenset({'escalope', 'mineral water', 'milk', '0.0'})

```

```

frozenset({'frozen vegetables', 'milk', 'french fries', '0.0'})
frozenset({'spaghetti', 'ground beef', 'french fries', '0.0'})
frozenset({'spaghetti', 'pancakes', 'french fries', '0.0'})
frozenset({'mineral water', 'milk', 'fresh bread', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'frozen smoothie', '0.0'})
frozenset({'mineral water', 'frozen smoothie', 'milk', '0.0'})
frozenset({'spaghetti', 'frozen smoothie', 'milk', '0.0'})
frozenset({'frozen vegetables', 'milk', 'ground beef', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'ground beef', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'ground beef', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'milk', '0.0'})
frozenset({'frozen vegetables', 'milk', 'olive oil', '0.0'})
frozenset({'frozen vegetables', 'shrimp', 'milk', '0.0'})
frozenset({'frozen vegetables', 'milk', 'soup', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'milk', '0.0'})
frozenset({'frozen vegetables', 'milk', 'tomatoes', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'olive oil', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'shrimp', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'soup', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'mineral water', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'tomatoes', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'turkey', '0.0'})
frozenset({'frozen vegetables', 'mineral water', 'whole wheat rice', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'olive oil', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'frozen vegetables', 'shrimp', 'tomatoes', '0.0'})
frozenset({'spaghetti', 'frozen vegetables', 'tomatoes', '0.0'})
frozenset({'mineral water', 'grated cheese', 'ground beef', '0.0'})
frozenset({'spaghetti', 'grated cheese', 'ground beef', '0.0'})
frozenset({'spaghetti', 'mineral water', 'grated cheese', '0.0'})
frozenset({'spaghetti', 'green tea', 'ground beef', '0.0'})
frozenset({'spaghetti', 'green tea', 'olive oil', '0.0'})
frozenset({'mineral water', 'ground beef', 'herb & pepper', '0.0'})
frozenset({'spaghetti', 'ground beef', 'herb & pepper', '0.0'})
frozenset({'low fat yogurt', 'mineral water', 'ground beef', '0.0'})
frozenset({'spaghetti', 'low fat yogurt', 'ground beef', '0.0'})
frozenset({'mineral water', 'milk', 'ground beef', '0.0'})
frozenset({'milk', 'ground beef', 'olive oil', '0.0'})
frozenset({'milk', 'ground beef', 'soup', '0.0'})
frozenset({'spaghetti', 'milk', 'ground beef', '0.0'})
frozenset({'mineral water', 'ground beef', 'olive oil', '0.0'})
frozenset({'mineral water', 'pancakes', 'ground beef', '0.0'})
frozenset({'mineral water', 'shrimp', 'ground beef', '0.0'})
frozenset({'mineral water', 'ground beef', 'soup', '0.0'})
frozenset({'spaghetti', 'mineral water', 'ground beef', '0.0'})
frozenset({'mineral water', 'tomatoes', 'ground beef', '0.0'})
frozenset({'spaghetti', 'ground beef', 'olive oil', '0.0'})
frozenset({'spaghetti', 'pancakes', 'ground beef', '0.0'})

```

```

frozenset({'spaghetti', 'shrimp', 'ground beef', '0.0'})
frozenset({'spaghetti', 'tomatoes', 'ground beef', '0.0'})
frozenset({'spaghetti', 'mineral water', 'herb & pepper', '0.0'})
frozenset({'spaghetti', 'low fat yogurt', 'milk', '0.0'})
frozenset({'mineral water', 'milk', 'olive oil', '0.0'})
frozenset({'mineral water', 'milk', 'salmon', '0.0'})
frozenset({'mineral water', 'shrimp', 'milk', '0.0'})
frozenset({'mineral water', 'milk', 'soup', '0.0'})
frozenset({'spaghetti', 'mineral water', 'milk', '0.0'})
frozenset({'mineral water', 'milk', 'tomatoes', '0.0'})
frozenset({'mineral water', 'turkey', 'milk', '0.0'})
frozenset({'spaghetti', 'milk', 'olive oil', '0.0'})
frozenset({'spaghetti', 'milk', 'soup', '0.0'})
frozenset({'spaghetti', 'milk', 'tomatoes', '0.0'})
frozenset({'spaghetti', 'turkey', 'milk', '0.0'})
frozenset({'spaghetti', 'milk', 'whole wheat pasta', '0.0'})
frozenset({'mineral water', 'shrimp', 'olive oil', '0.0'})
frozenset({'mineral water', 'soup', 'olive oil', '0.0'})
frozenset({'spaghetti', 'mineral water', 'olive oil', '0.0'})
frozenset({'mineral water', 'tomatoes', 'olive oil', '0.0'})
frozenset({'mineral water', 'pancakes', 'soup', '0.0'})
frozenset({'mineral water', 'pancakes', 'whole wheat rice', '0.0'})
frozenset({'spaghetti', 'mineral water', 'red wine', '0.0'})
frozenset({'spaghetti', 'mineral water', 'salmon', '0.0'})
frozenset({'spaghetti', 'mineral water', 'shrimp', '0.0'})
frozenset({'spaghetti', 'mineral water', 'soup', '0.0'})
frozenset({'spaghetti', 'mineral water', 'tomatoes', '0.0'})
frozenset({'spaghetti', 'pancakes', 'olive oil', '0.0'})
frozenset({'spaghetti', 'tomatoes', 'olive oil', '0.0'})
frozenset({'spaghetti', 'shrimp', 'tomatoes', '0.0'})
frozenset({'mineral water', 'eggs', 'chocolate', 'ground beef'})
frozenset({'mineral water', 'eggs', 'milk', 'chocolate'})
frozenset({'frozen vegetables', 'mineral water', 'milk', 'chocolate'})
frozenset({'spaghetti', 'frozen vegetables', 'mineral water', 'chocolate'})
frozenset({'spaghetti', 'mineral water', 'chocolate', 'ground beef'})
frozenset({'spaghetti', 'mineral water', 'milk', 'chocolate'})
frozenset({'spaghetti', 'mineral water', 'eggs', 'milk'})
frozenset({'spaghetti', 'frozen vegetables', 'mineral water', 'ground beef'})
frozenset({'spaghetti', 'frozen vegetables', 'mineral water', 'milk'})
frozenset({'spaghetti', 'mineral water', 'milk', 'ground beef'})
frozenset({'chocolate', '0', 'milk', 'burgers', '0.0'})
frozenset({'chocolate', 'spaghetti', '0', 'burgers', '0.0'})
frozenset({'eggs', 'french fries', '0', 'burgers', '0.0'})
frozenset({'eggs', '0', 'green tea', 'burgers', '0.0'})
frozenset({'eggs', 'ground beef', '0', 'burgers', '0.0'})
frozenset({'eggs', 'pancakes', '0', 'burgers', '0.0'})
frozenset({'french fries', '0', 'milk', 'burgers', '0.0'})
frozenset({'french fries', 'spaghetti', '0', 'burgers', '0.0'})

```

```

frozenset({'mineral water', '0', 'frozen vegetables', 'burgers', '0.0'})
frozenset({'ground beef', '0', 'milk', 'burgers', '0.0'})
frozenset({'mineral water', 'ground beef', '0', 'burgers', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'burgers', '0.0'})
frozenset({'mineral water', '0', 'milk', 'burgers', '0.0'})
frozenset({'spaghetti', '0', 'milk', 'burgers', '0.0'})
frozenset({'spaghetti', 'pancakes', '0', 'burgers', '0.0'})
frozenset({'chocolate', 'spaghetti', 'cake', '0', '0.0'})
frozenset({'mineral water', 'cake', '0', 'milk', '0.0'})
frozenset({'spaghetti', 'cake', 'pancakes', '0', '0.0'})
frozenset({'chocolate', '0', 'green tea', 'chicken', '0.0'})
frozenset({'chocolate', '0', 'milk', 'chicken', '0.0'})
frozenset({'mineral water', 'chocolate', '0', 'chicken', '0.0'})
frozenset({'eggs', '0', 'milk', 'chicken', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'chicken', '0.0'})
frozenset({'mineral water', '0', 'milk', 'chicken', '0.0'})
frozenset({'spaghetti', '0', 'milk', 'chicken', '0.0'})
frozenset({'mineral water', 'pancakes', '0', 'chicken', '0.0'})
frozenset({'french fries', 'cookies', 'chocolate', '0', '0.0'})
frozenset({'eggs', 'cooking oil', 'chocolate', '0', '0.0'})
frozenset({'cooking oil', 'chocolate', '0', 'milk', '0.0'})
frozenset({'eggs', 'chocolate', '0', 'milk', '0.0'})
frozenset({'eggs', 'olive oil', 'chocolate', '0', '0.0'})
frozenset({'mineral water', 'escalope', 'chocolate', '0', '0.0'})
frozenset({'frozen smoothie', 'chocolate', '0', 'milk', '0.0'})
frozenset({'chocolate', 'ground beef', '0', 'frozen vegetables', '0.0'})
frozenset({'chocolate', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'chocolate', '0', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'herb & pepper', 'chocolate', 'ground beef', '0', '0.0'})
frozenset({'chocolate', 'ground beef', '0', 'milk', '0.0'})
frozenset({'mineral water', 'chocolate', 'ground beef', '0', '0.0'})
frozenset({'chocolate', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'chocolate', '0', 'milk', '0.0'})
frozenset({'olive oil', 'chocolate', '0', 'milk', '0.0'})
frozenset({'chocolate', '0', 'shrimp', 'milk', '0.0'})
frozenset({'chocolate', 'soup', '0', 'milk', '0.0'})
frozenset({'chocolate', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'olive oil', 'chocolate', '0', '0.0'})
frozenset({'mineral water', 'chocolate', 'soup', '0', '0.0'})
frozenset({'olive oil', 'chocolate', 'spaghetti', '0', '0.0'})
frozenset({'chocolate', 'spaghetti', '0', 'shrimp', '0.0'})
frozenset({'chocolate', 'spaghetti', 'tomatoes', '0', '0.0'})
frozenset({'french fries', 'cookies', '0', 'green tea', '0.0'})
frozenset({'eggs', 'cooking oil', '0', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'cooking oil', '0', '0.0'})
frozenset({'eggs', 'cooking oil', 'spaghetti', '0', '0.0'})
frozenset({'cooking oil', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'cooking oil', 'pancakes', '0', '0.0'})

```



```

frozenset({'mineral water', 'cooking oil', 'spaghetti', '0', '0.0'})
frozenset({'eggs', 'ground beef', '0', 'frozen vegetables', '0.0'})
frozenset({'eggs', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'grated cheese', '0', '0.0'})
frozenset({'eggs', 'grated cheese', 'spaghetti', '0', '0.0'})
frozenset({'eggs', 'ground beef', 'herb & pepper', '0', '0.0'})
frozenset({'eggs', 'ground beef', '0', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'ground beef', '0', '0.0'})
frozenset({'eggs', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'eggs', 'herb & pepper', 'spaghetti', '0', '0.0'})
frozenset({'eggs', '0', 'shrimp', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'olive oil', '0', '0.0'})
frozenset({'mineral water', 'eggs', 'soup', '0', '0.0'})
frozenset({'eggs', 'olive oil', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'escalope', '0', 'milk', '0.0'})
frozenset({'french fries', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'french fries', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'french fries', 'spaghetti', 'pancakes', '0', '0.0'})
frozenset({'mineral water', 'fresh bread', '0', 'milk', '0.0'})
frozenset({'frozen smoothie', 'spaghetti', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', 'frozen smoothie', '0', 'milk', '0.0'})
frozenset({'frozen smoothie', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'ground beef', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'mineral water', 'ground beef', '0', 'frozen vegetables', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'olive oil', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'0', 'frozen vegetables', 'shrimp', 'milk', '0.0'})
frozenset({'soup', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'spaghetti', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'tomatoes', '0', 'frozen vegetables', 'milk', '0.0'})
frozenset({'mineral water', 'olive oil', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', '0', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'mineral water', 'soup', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', 'tomatoes', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', 'turkey', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', '0', 'frozen vegetables', 'whole wheat rice',
'0.0'})
frozenset({'olive oil', 'spaghetti', '0', 'frozen vegetables', '0.0'})
frozenset({'spaghetti', '0', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'tomatoes', '0', 'frozen vegetables', 'shrimp', '0.0'})
frozenset({'spaghetti', 'tomatoes', '0', 'frozen vegetables', '0.0'})
frozenset({'mineral water', 'grated cheese', 'ground beef', '0', '0.0'})
frozenset({'grated cheese', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'grated cheese', 'spaghetti', '0', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'green tea', '0.0'})
frozenset({'olive oil', 'spaghetti', '0', 'green tea', '0.0'})

```

```

frozenset({'mineral water', 'ground beef', 'herb & pepper', '0', '0.0'})
frozenset({'ground beef', 'herb & pepper', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'ground beef', 'low fat yogurt', '0', '0.0'})
frozenset({'ground beef', 'spaghetti', 'low fat yogurt', '0', '0.0'})
frozenset({'mineral water', 'ground beef', '0', 'milk', '0.0'})
frozenset({'olive oil', 'ground beef', '0', 'milk', '0.0'})
frozenset({'ground beef', 'soup', '0', 'milk', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'olive oil', 'ground beef', '0', '0.0'})
frozenset({'mineral water', 'ground beef', 'pancakes', '0', '0.0'})
frozenset({'mineral water', 'ground beef', '0', 'shrimp', '0.0'})
frozenset({'mineral water', 'ground beef', 'soup', '0', '0.0'})
frozenset({'mineral water', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'ground beef', 'tomatoes', '0', '0.0'})
frozenset({'olive oil', 'ground beef', 'spaghetti', '0', '0.0'})
frozenset({'ground beef', 'spaghetti', 'pancakes', '0', '0.0'})
frozenset({'ground beef', 'spaghetti', '0', 'shrimp', '0.0'})
frozenset({'ground beef', 'spaghetti', 'tomatoes', '0', '0.0'})
frozenset({'mineral water', 'herb & pepper', 'spaghetti', '0', '0.0'})
frozenset({'spaghetti', 'low fat yogurt', '0', 'milk', '0.0'})
frozenset({'mineral water', 'olive oil', '0', 'milk', '0.0'})
frozenset({'mineral water', '0', 'milk', 'salmon', '0.0'})
frozenset({'mineral water', '0', 'shrimp', 'milk', '0.0'})
frozenset({'mineral water', 'soup', '0', 'milk', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'tomatoes', '0', 'milk', '0.0'})
frozenset({'mineral water', 'turkey', '0', 'milk', '0.0'})
frozenset({'olive oil', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'spaghetti', 'soup', '0', 'milk', '0.0'})
frozenset({'spaghetti', 'tomatoes', '0', 'milk', '0.0'})
frozenset({'turkey', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'whole wheat pasta', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'olive oil', '0', 'shrimp', '0.0'})
frozenset({'mineral water', 'olive oil', 'soup', '0', '0.0'})
frozenset({'mineral water', 'olive oil', 'spaghetti', '0', '0.0'})
frozenset({'mineral water', 'olive oil', 'tomatoes', '0', '0.0'})
frozenset({'mineral water', 'soup', 'pancakes', '0', '0.0'})
frozenset({'mineral water', 'pancakes', '0', 'whole wheat rice', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'red wine', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'salmon', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'shrimp', '0.0'})
frozenset({'mineral water', 'spaghetti', 'soup', '0', '0.0'})
frozenset({'mineral water', 'spaghetti', 'tomatoes', '0', '0.0'})
frozenset({'olive oil', 'spaghetti', 'pancakes', '0', '0.0'})
frozenset({'olive oil', 'spaghetti', 'tomatoes', '0', '0.0'})
frozenset({'spaghetti', 'tomatoes', '0', 'shrimp', '0.0'})
frozenset({'mineral water', 'eggs', 'chocolate', 'ground beef', '0'})
frozenset({'mineral water', 'eggs', 'chocolate', '0', 'milk'})

```

```

frozenset({'mineral water', 'chocolate', '0', 'frozen vegetables', 'milk'})
frozenset({'mineral water', 'chocolate', 'spaghetti', '0', 'frozen vegetables'})
frozenset({'mineral water', 'chocolate', 'ground beef', 'spaghetti', '0'})
frozenset({'mineral water', 'chocolate', 'spaghetti', '0', 'milk'})
frozenset({'mineral water', 'eggs', 'spaghetti', '0', 'milk'})
frozenset({'mineral water', 'ground beef', 'spaghetti', '0', 'frozen
vegetables'})
frozenset({'mineral water', 'spaghetti', '0', 'frozen vegetables', 'milk'})
frozenset({'mineral water', 'ground beef', 'spaghetti', '0', 'milk'})
frozenset({'mineral water', 'eggs', 'chocolate', 'ground beef', '0.0'})
frozenset({'mineral water', 'eggs', 'chocolate', 'milk', '0.0'})
frozenset({'mineral water', 'chocolate', 'frozen vegetables', 'milk', '0.0'})
frozenset({'mineral water', 'chocolate', 'spaghetti', 'frozen vegetables',
'0.0'})
frozenset({'mineral water', 'chocolate', 'ground beef', 'spaghetti', '0.0'})
frozenset({'mineral water', 'chocolate', 'spaghetti', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'spaghetti', 'milk', '0.0'})
frozenset({'mineral water', 'ground beef', 'spaghetti', 'frozen vegetables',
'0.0'})
frozenset({'mineral water', 'spaghetti', 'frozen vegetables', 'milk', '0.0'})
frozenset({'mineral water', 'ground beef', 'spaghetti', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'chocolate', 'ground beef', '0', '0.0'})
frozenset({'mineral water', 'eggs', 'chocolate', '0', 'milk', '0.0'})
frozenset({'mineral water', 'chocolate', '0', 'frozen vegetables', 'milk',
'0.0'})
frozenset({'mineral water', 'chocolate', 'spaghetti', '0', 'frozen vegetables',
'0.0'})
frozenset({'mineral water', 'chocolate', 'ground beef', 'spaghetti', '0',
'0.0'})
frozenset({'mineral water', 'chocolate', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'eggs', 'spaghetti', '0', 'milk', '0.0'})
frozenset({'mineral water', 'ground beef', 'spaghetti', '0', 'frozen
vegetables', '0.0'})
frozenset({'mineral water', 'spaghetti', '0', 'frozen vegetables', 'milk',
'0.0'})
frozenset({'mineral water', 'ground beef', 'spaghetti', '0', 'milk', '0.0'})

```

```

[16]: for item in result:
      pair = item[0]
      items = [x for x in pair]
      print("Rule: " + items[0] + "-" + items[1])

      print("Support: "+str(item[1]))
      print("Confidence: " + str(item[2][0][2]))
      print("Lift: " + str(item[2][0][3]))
      print("=====")

```

Rule: almonds-burgers

```

Support: 0.0052
Confidence: 0.2565789473684211
Lift: 2.9424191211974895
=====
Rule: black tea-milk
Support: 0.004266666666666667
Confidence: 0.2990654205607477
Lift: 2.3076035537094732
=====
Rule: french fries-body spray
Support: 0.004266666666666667
Confidence: 0.37209302325581395
Lift: 2.1768312592968835
=====
Rule: ham-burgers
Support: 0.0056
Confidence: 0.21105527638190955
Lift: 2.420358674104467
=====
Rule: cereals-milk
Support: 0.007066666666666666
Confidence: 0.27461139896373055
Lift: 2.118915115460884
=====
Rule: light cream-chicken
Support: 0.004533333333333334
Confidence: 0.2905982905982906
Lift: 4.843304843304844
=====
Rule: tomato sauce-chocolate
Support: 0.005066666666666666
Confidence: 0.3584905660377358
Lift: 2.1876967007998527
=====
Rule: eggs-cider
Support: 0.004266666666666667
Confidence: 0.4050632911392405
Lift: 2.2536904180595725
=====
Rule: escalope-mushroom cream sauce
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 3.7903273197390845
=====
Rule: escalope-pasta
Support: 0.005866666666666667
Confidence: 0.37288135593220345
Lift: 4.700185158809287

```

```

=====
Rule: extra dark chocolate-mineral water
Support: 0.005733333333333333
Confidence: 0.4777777777777775
Lift: 2.0052229061742213
=====
Rule: fresh tuna-pancakes
Support: 0.005066666666666666
Confidence: 0.2275449101796407
Lift: 2.3935299107255337
=====
Rule: frozen vegetables-parmesan cheese
Support: 0.005466666666666665
Confidence: 0.2751677852348993
Lift: 2.8863753695968457
=====
Rule: frozen vegetables-shrimp
Support: 0.016666666666666666
Confidence: 0.2336448598130841
Lift: 2.4508202078295533
=====
Rule: frozen vegetables-tomatoes
Support: 0.016133333333333333
Confidence: 0.23586744639376217
Lift: 2.4741340530814213
=====
Rule: grated cheese-ground beef
Support: 0.011333333333333334
Confidence: 0.2162849872773537
Lift: 2.201000548955431
=====
Rule: ground beef-herb & pepper
Support: 0.016
Confidence: 0.3234501347708895
Lift: 3.2915549671393096
=====
Rule: ground beef-olive oil
Support: 0.014133333333333333
Confidence: 0.21501014198782958
Lift: 2.1880272251135984
=====
Rule: ground beef-pepper
Support: 0.006533333333333334
Confidence: 0.24623115577889448
Lift: 2.505744461793363
=====
Rule: rice-ground beef
Support: 0.0044

```

```

Confidence: 0.23404255319148937
Lift: 2.3817084788821847
=====
Rule: ground beef-salmon
Support: 0.008933333333333333
Confidence: 0.21069182389937105
Lift: 2.144082332761578
=====
Rule: spaghetti-ground beef
Support: 0.0392
Confidence: 0.39891451831750335
Lift: 2.2908567284695827
=====
Rule: tomato sauce-ground beef
Support: 0.005333333333333333
Confidence: 0.37735849056603776
Lift: 3.840147461662528
=====
Rule: light mayo-pancakes
Support: 0.005466666666666665
Confidence: 0.20098039215686275
Lift: 2.114099496741193
=====
Rule: meatballs-milk
Support: 0.005466666666666665
Confidence: 0.2611464968152866
Lift: 2.0150192655500514
=====
Rule: milk-olive oil
Support: 0.017066666666666667
Confidence: 0.25963488843813387
Lift: 2.0033556206646135
=====
Rule: milk-soup
Support: 0.0152
Confidence: 0.3007915567282322
Lift: 2.320922505619076
=====
Rule: milk-whole wheat pasta
Support: 0.009866666666666666
Confidence: 0.334841628959276
Lift: 2.583654544438858
=====
Rule: nonfat milk-mineral water
Support: 0.005066666666666666
Confidence: 0.48717948717948717
Lift: 2.044681675347596
=====

```

```

Rule: spaghetti-olive oil
Support: 0.022933333333333333
Confidence: 0.3488843813387424
Lift: 2.0035473660341254
=====
Rule: whole wheat pasta-olive oil
Support: 0.008
Confidence: 0.2714932126696833
Lift: 4.130221288078346
=====
Rule: pasta-shrimp
Support: 0.005066666666666666
Confidence: 0.3220338983050848
Lift: 4.514493901473151
=====
Rule: spaghetti-pepper
Support: 0.009866666666666666
Confidence: 0.37185929648241206
Lift: 2.1354860058331475
=====
Rule: spaghetti-red wine
Support: 0.010266666666666667
Confidence: 0.36492890995260663
Lift: 2.0956866957462097
=====
Rule: spaghetti-tomato sauce
Support: 0.006266666666666667
Confidence: 0.44339622641509435
Lift: 2.546302984772747
=====
Rule: 0-almonds
Support: 0.0052
Confidence: 0.2565789473684211
Lift: 2.9424191211974895
=====
Rule: 0-black tea
Support: 0.0041333333333333335
Confidence: 0.2897196261682243
Lift: 2.237793199033658
=====
Rule: 0-french fries
Support: 0.004266666666666667
Confidence: 0.37209302325581395
Lift: 2.178530581123032
=====
Rule: 0-ham
Support: 0.0056
Confidence: 0.21105527638190955

```

```

Lift: 2.420358674104467
=====
Rule: 0-cereals
Support: 0.006933333333333333
Confidence: 0.26943005181347146
Lift: 2.081076610299728
=====
Rule: 0-light cream
Support: 0.004533333333333334
Confidence: 0.2905982905982906
Lift: 4.843304843304844
=====
Rule: 0-tomato sauce
Support: 0.005066666666666666
Confidence: 0.3584905660377358
Lift: 2.1894782127711876
=====
Rule: 0-eggs
Support: 0.004266666666666667
Confidence: 0.4050632911392405
Lift: 2.2536904180595725
=====
Rule: 0-escalope
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 3.7903273197390845
=====
Rule: 0-escalope
Support: 0.005866666666666667
Confidence: 0.37288135593220345
Lift: 4.700185158809287
=====
Rule: 0-extra dark chocolate
Support: 0.005733333333333333
Confidence: 0.47777777777777775
Lift: 2.0063456513624485
=====
Rule: 0-fresh tuna
Support: 0.005066666666666666
Confidence: 0.2275449101796407
Lift: 2.3935299107255337
=====
Rule: 0-frozen vegetables
Support: 0.005333333333333333
Confidence: 0.2684563758389262
Lift: 2.8199199142744344
=====
Rule: 0-frozen vegetables

```



```

Support: 0.016666666666666666
Confidence: 0.2336448598130841
Lift: 2.454252729129035
=====
Rule: 0-frozen vegetables
Support: 0.016133333333333333
Confidence: 0.23586744639376217
Lift: 2.4775992268252325
=====
Rule: 0-grated cheese
Support: 0.011333333333333334
Confidence: 0.2162849872773537
Lift: 2.201000548955431
=====
Rule: 0-ground beef
Support: 0.016
Confidence: 0.3234501347708895
Lift: 3.2915549671393096
=====
Rule: 0-ground beef
Support: 0.014133333333333333
Confidence: 0.21501014198782958
Lift: 2.1880272251135984
=====
Rule: 0-ground beef
Support: 0.006533333333333334
Confidence: 0.24623115577889448
Lift: 2.505744461793363
=====
Rule: 0-ground beef
Support: 0.0044
Confidence: 0.23404255319148937
Lift: 2.3817084788821847
=====
Rule: 0-ground beef
Support: 0.008933333333333333
Confidence: 0.21069182389937105
Lift: 2.144082332761578
=====
Rule: 0-spaghetti
Support: 0.0392
Confidence: 0.39891451831750335
Lift: 2.292612174238525
=====
Rule: 0-tomato sauce
Support: 0.005333333333333333
Confidence: 0.37735849056603776
Lift: 3.840147461662528

```

```

=====
Rule: 0-light mayo
Support: 0.005466666666666665
Confidence: 0.20098039215686275
Lift: 2.114099496741193
=====
Rule: 0-meatballs
Support: 0.005466666666666665
Confidence: 0.2611464968152866
Lift: 2.017094465617559
=====
Rule: 0-milk
Support: 0.0152
Confidence: 0.3007915567282322
Lift: 2.3233127450687348
=====
Rule: 0-milk
Support: 0.009866666666666666
Confidence: 0.334841628959276
Lift: 2.586315362713254
=====
Rule: 0-mineral water
Support: 0.005066666666666666
Confidence: 0.48717948717948717
Lift: 2.0458265139116203
=====
Rule: 0-whole wheat pasta
Support: 0.008
Confidence: 0.2714932126696833
Lift: 4.138616046793953
=====
Rule: 0-pasta
Support: 0.005066666666666666
Confidence: 0.3220338983050848
Lift: 4.514493901473151
=====
Rule: 0-spaghetti
Support: 0.009733333333333333
Confidence: 0.3668341708542714
Lift: 2.108242361231445
=====
Rule: 0-red wine
Support: 0.010266666666666667
Confidence: 0.36492890995260663
Lift: 2.097292585934521
=====
Rule: 0-tomato sauce
Support: 0.006266666666666667

```

```

Confidence: 0.44339622641509435
Lift: 2.548254174799393
=====
Rule: almonds-burgers
Support: 0.0052
Confidence: 0.2565789473684211
Lift: 2.9424191211974895
=====
Rule: black tea-milk
Support: 0.004266666666666667
Confidence: 0.2990654205607477
Lift: 2.3076035537094732
=====
Rule: french fries-body spray
Support: 0.004266666666666667
Confidence: 0.37209302325581395
Lift: 2.1768312592968835
=====
Rule: ham-burgers
Support: 0.0056
Confidence: 0.21105527638190955
Lift: 2.420358674104467
=====
Rule: cereals-milk
Support: 0.007066666666666666
Confidence: 0.27461139896373055
Lift: 2.118915115460884
=====
Rule: light cream-chicken
Support: 0.004533333333333333
Confidence: 0.2905982905982906
Lift: 4.843304843304844
=====
Rule: tomato sauce-chocolate
Support: 0.005066666666666666
Confidence: 0.3584905660377358
Lift: 2.1876967007998527
=====
Rule: eggs-cider
Support: 0.004266666666666667
Confidence: 0.4050632911392405
Lift: 2.2536904180595725
=====
Rule: escalope-mushroom cream sauce
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 3.7903273197390845
=====

```

Rule: escalope-pasta
 Support: 0.005866666666666667
 Confidence: 0.37288135593220345
 Lift: 4.700185158809287
 =====

Rule: extra dark chocolate-mineral water
 Support: 0.005733333333333333
 Confidence: 0.47777777777777775
 Lift: 2.0052229061742213
 =====

Rule: fresh tuna-pancakes
 Support: 0.005066666666666666
 Confidence: 0.2275449101796407
 Lift: 2.3935299107255337
 =====

Rule: frozen vegetables-parmesan cheese
 Support: 0.005466666666666665
 Confidence: 0.2751677852348993
 Lift: 2.8863753695968457
 =====

Rule: frozen vegetables-shrimp
 Support: 0.016666666666666666
 Confidence: 0.2336448598130841
 Lift: 2.4508202078295533
 =====

Rule: frozen vegetables-tomatoes
 Support: 0.016133333333333333
 Confidence: 0.23586744639376217
 Lift: 2.4741340530814213
 =====

Rule: grated cheese-ground beef
 Support: 0.011333333333333334
 Confidence: 0.2162849872773537
 Lift: 2.201000548955431
 =====

Rule: ground beef-herb & pepper
 Support: 0.016
 Confidence: 0.3234501347708895
 Lift: 3.2915549671393096
 =====

Rule: ground beef-olive oil
 Support: 0.014133333333333333
 Confidence: 0.21501014198782958
 Lift: 2.1880272251135984
 =====

Rule: pepper-ground beef
 Support: 0.006533333333333334
 Confidence: 0.24623115577889448

```

Lift: 2.505744461793363
=====
Rule: rice-ground beef
Support: 0.0044
Confidence: 0.23404255319148937
Lift: 2.3817084788821847
=====
Rule: ground beef-salmon
Support: 0.008933333333333333
Confidence: 0.21069182389937105
Lift: 2.144082332761578
=====
Rule: spaghetti-ground beef
Support: 0.0392
Confidence: 0.39891451831750335
Lift: 2.2908567284695827
=====
Rule: tomato sauce-ground beef
Support: 0.005333333333333333
Confidence: 0.37735849056603776
Lift: 3.840147461662528
=====
Rule: light mayo-pancakes
Support: 0.0054666666666666665
Confidence: 0.20098039215686275
Lift: 2.114099496741193
=====
Rule: meatballs-milk
Support: 0.0054666666666666665
Confidence: 0.2611464968152866
Lift: 2.0150192655500514
=====
Rule: milk-olive oil
Support: 0.017066666666666667
Confidence: 0.25963488843813387
Lift: 2.0033556206646135
=====
Rule: milk-soup
Support: 0.0152
Confidence: 0.3007915567282322
Lift: 2.320922505619076
=====
Rule: milk-whole wheat pasta
Support: 0.009866666666666666
Confidence: 0.334841628959276
Lift: 2.583654544438858
=====
Rule: nonfat milk-mineral water

```

```

Support: 0.005066666666666666
Confidence: 0.48717948717948717
Lift: 2.044681675347596
=====
Rule: spaghetti-olive oil
Support: 0.022933333333333333
Confidence: 0.3488843813387424
Lift: 2.0035473660341254
=====
Rule: whole wheat pasta-olive oil
Support: 0.008
Confidence: 0.2714932126696833
Lift: 4.130221288078346
=====
Rule: pasta-shrimp
Support: 0.005066666666666666
Confidence: 0.3220338983050848
Lift: 4.514493901473151
=====
Rule: spaghetti-pepper
Support: 0.009866666666666666
Confidence: 0.37185929648241206
Lift: 2.1354860058331475
=====
Rule: spaghetti-red wine
Support: 0.010266666666666667
Confidence: 0.36492890995260663
Lift: 2.0956866957462097
=====
Rule: spaghetti-tomato sauce
Support: 0.006266666666666667
Confidence: 0.44339622641509435
Lift: 2.546302984772747
=====
Rule: milk-chocolate
Support: 0.005466666666666665
Confidence: 0.3203125
Lift: 2.4715470679012346
=====
Rule: spaghetti-chocolate
Support: 0.0064
Confidence: 0.375
Lift: 2.153522205206738
=====
Rule: french fries-eggs
Support: 0.009066666666666667
Confidence: 0.412121212121217
Lift: 2.292959266253035

```

```

=====
Rule: eggs-green tea
Support: 0.006
Confidence: 0.23560209424083772
Lift: 2.7018588789086895
=====
Rule: eggs-ground beef
Support: 0.004
Confidence: 0.2
Lift: 2.293577981651376
=====
Rule: eggs-burgers
Support: 0.004133333333333335
Confidence: 0.3924050632911392
Lift: 2.1832625924952107
=====
Rule: french fries-milk
Support: 0.0056
Confidence: 0.2359550561797753
Lift: 2.7059066075662304
=====
Rule: spaghetti-french fries
Support: 0.0056
Confidence: 0.2028985507246377
Lift: 2.3268182422550194
=====
Rule: frozen vegetables-mineral water
Support: 0.004933333333333333
Confidence: 0.20218579234972675
Lift: 2.1208299896824485
=====
Rule: milk-ground beef
Support: 0.004133333333333335
Confidence: 0.344444444444444444
Lift: 2.657750342935528
=====
Rule: mineral water-ground beef
Support: 0.005333333333333333
Confidence: 0.21857923497267756
Lift: 2.2243477100340323
=====
Rule: spaghetti-ground beef
Support: 0.0054666666666666665
Confidence: 0.455555555555555555
Lift: 2.6161306789178154
=====
Rule: mineral water-milk
Support: 0.006933333333333333

```

```

Confidence: 0.28415300546448086
Lift: 2.1925386224111176
=====
Rule: spaghetti-milk
Support: 0.0064
Confidence: 0.35820895522388063
Lift: 2.0570958378094217
=====
Rule: spaghetti-burgers
Support: 0.0044
Confidence: 0.4177215189873418
Lift: 2.3988601779518097
=====
Rule: spaghetti-cake
Support: 0.0052
Confidence: 0.3823529411764706
Lift: 2.195748130799027
=====
Rule: cake-mineral water
Support: 0.0064
Confidence: 0.48
Lift: 2.0145495243424736
=====
Rule: spaghetti-cake
Support: 0.004133333333333335
Confidence: 0.34831460674157305
Lift: 2.0002753067088803
=====
Rule: green tea-chocolate
Support: 0.004
Confidence: 0.27272727272727276
Lift: 2.066115702479339
=====
Rule: milk-chocolate
Support: 0.004533333333333334
Confidence: 0.30909090909090914
Lift: 2.384960718294052
=====
Rule: mineral water-chocolate
Support: 0.0076
Confidence: 0.5181818181818182
Lift: 2.174797781960625
=====
Rule: eggs-milk
Support: 0.004133333333333335
Confidence: 0.28703703703703703
Lift: 2.2147919524462734
=====

```



```

Rule: spaghetti-ground beef
Support: 0.0048
Confidence: 0.5070422535211268
Lift: 2.911804671828829
=====
Rule: mineral water-milk
Support: 0.006666666666666667
Confidence: 0.29239766081871343
Lift: 2.2561547902678507
=====
Rule: spaghetti-milk
Support: 0.005466666666666665
Confidence: 0.36936936936936937
Lift: 2.1211870369603907
=====
Rule: mineral water-chicken
Support: 0.0048
Confidence: 0.21052631578947364
Lift: 2.214512438178194
=====
Rule: cookies-chocolate
Support: 0.004
Confidence: 0.38461538461538464
Lift: 2.2500900036001443
=====
Rule: eggs-cooking oil
Support: 0.004533333333333334
Confidence: 0.3863636363636364
Lift: 2.3577927361491238
=====
Rule: cooking oil-chocolate
Support: 0.0044
Confidence: 0.3235294117647059
Lift: 2.4963689179375455
=====
Rule: eggs-milk
Support: 0.0092
Confidence: 0.27710843373493976
Lift: 2.1381823590658935
=====
Rule: eggs-chocolate
Support: 0.004
Confidence: 0.3333333333333333
Lift: 2.034174125305126
=====
Rule: escalope-mineral water
Support: 0.0056
Confidence: 0.328125

```

```

Lift: 2.002390154597234
=====
Rule: frozen smoothie-milk
Support: 0.004133333333333335
Confidence: 0.2767857142857143
Lift: 2.1356922398589067
=====
Rule: frozen vegetables-chocolate
Support: 0.005733333333333333
Confidence: 0.25
Lift: 2.5440976933514245
=====
Rule: frozen vegetables-milk
Support: 0.008
Confidence: 0.3488372093023256
Lift: 2.691645133505599
=====
Rule: frozen vegetables-chocolate
Support: 0.004
Confidence: 0.24390243902439024
Lift: 2.558417192563534
=====
Rule: frozen vegetables-shrimp
Support: 0.005333333333333333
Confidence: 0.23255813953488372
Lift: 3.260160834601174
=====
Rule: spaghetti-frozen vegetables
Support: 0.007866666666666666
Confidence: 0.20068027210884354
Lift: 2.1050378193235333
=====
Rule: herb & pepper-chocolate
Support: 0.004
Confidence: 0.4411764705882353
Lift: 4.489584164737808
=====
Rule: milk-chocolate
Support: 0.006133333333333335
Confidence: 0.26589595375722547
Lift: 2.051666309855135
=====
Rule: mineral water-chocolate
Support: 0.010933333333333333
Confidence: 0.20759493670886076
Lift: 2.1125671985297907
=====
Rule: spaghetti-chocolate

```

```

Support: 0.0092
Confidence: 0.3988439306358382
Lift: 2.290451362763236
=====
Rule: mineral water-milk
Support: 0.014
Confidence: 0.2658227848101266
Lift: 2.0511017346460387
=====
Rule: milk-chocolate
Support: 0.0052
Confidence: 0.31707317073170727
Lift: 2.4465522433002107
=====
Rule: shrimp-milk
Support: 0.005466666666666665
Confidence: 0.3037037037037037
Lift: 2.343392775491541
=====
Rule: milk-chocolate
Support: 0.004
Confidence: 0.39473684210526316
Lift: 3.045808966861599
=====
Rule: spaghetti-milk
Support: 0.010933333333333333
Confidence: 0.2789115646258503
Lift: 2.15209540606366
=====
Rule: mineral water-chocolate
Support: 0.008266666666666667
Confidence: 0.5040650406504065
Lift: 2.115549974749887
=====
Rule: mineral water-chocolate
Support: 0.0056
Confidence: 0.5526315789473685
Lift: 2.3193826760521903
=====
Rule: spaghetti-chocolate
Support: 0.007066666666666666
Confidence: 0.4308943089430894
Lift: 2.4745078997497476
=====
Rule: spaghetti-chocolate
Support: 0.004
Confidence: 0.375
Lift: 2.153522205206738

```

```

=====
Rule: spaghetti-shrimp
Support: 0.0064
Confidence: 0.3555555555555556
Lift: 2.0418580908626853
=====
Rule: spaghetti-tomatoes
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0236272150514107
=====
Rule: cookies-green tea
Support: 0.004666666666666667
Confidence: 0.35000000000000003
Lift: 2.651515151515152
=====
Rule: eggs-cooking oil
Support: 0.004
Confidence: 0.34090909090909094
Lift: 2.6304713804713806
=====
Rule: mineral water-eggs
Support: 0.0064
Confidence: 0.5454545454545455
Lift: 2.2892608231164475
=====
Rule: spaghetti-eggs
Support: 0.004133333333333335
Confidence: 0.3522727272727273
Lift: 2.0230057079214814
=====
Rule: spaghetti-cooking oil
Support: 0.0048
Confidence: 0.5714285714285714
Lift: 3.281557646029315
=====
Rule: mineral water-cooking oil
Support: 0.004666666666666667
Confidence: 0.2317880794701987
Lift: 2.4381635287889063
=====
Rule: spaghetti-mineral water
Support: 0.0076
Confidence: 0.37748344370860926
Lift: 2.1677839416650606
=====
Rule: frozen vegetables-eggs
Support: 0.0044

```

```

Confidence: 0.20245398773006135
Lift: 2.060250892775387
=====
Rule: frozen vegetables-eggs
Support: 0.007333333333333333
Confidence: 0.3374233128834356
Lift: 2.6035749450882375
=====
Rule: mineral water-eggs
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.036768820566839
=====
Rule: spaghetti-eggs
Support: 0.004266666666666667
Confidence: 0.47058823529411764
Lift: 2.7024592379064947
=====
Rule: eggs-ground beef
Support: 0.004133333333333335
Confidence: 0.2066666666666667
Lift: 4.177897574123989
=====
Rule: eggs-milk
Support: 0.005866666666666667
Confidence: 0.29333333333333333
Lift: 2.263374485596708
=====
Rule: mineral water-eggs
Support: 0.010133333333333333
Confidence: 0.5066666666666666
Lift: 2.1264689423614995
=====
Rule: spaghetti-eggs
Support: 0.008933333333333333
Confidence: 0.4466666666666666
Lift: 2.565084226646248
=====
Rule: spaghetti-eggs
Support: 0.0048
Confidence: 0.38297872340425526
Lift: 2.1993418265941154
=====
Rule: eggs-milk
Support: 0.004266666666666667
Confidence: 0.30188679245283023
Lift: 2.329373398555789
=====

```

```

Rule: mineral water-eggs
Support: 0.005866666666666667
Confidence: 0.4888888888888889
Lift: 2.0518559970154824
=====
Rule: mineral water-eggs
Support: 0.004933333333333333
Confidence: 0.5441176470588235
Lift: 2.2836498897264557
=====
Rule: spaghetti-eggs
Support: 0.005066666666666666
Confidence: 0.4222222222222217
Lift: 2.4247064828994382
=====
Rule: escalope-mineral water
Support: 0.004
Confidence: 0.5172413793103449
Lift: 2.1708507805414587
=====
Rule: frozen vegetables-milk
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 2.3202106535439873
=====
Rule: spaghetti-ground beef
Support: 0.0056
Confidence: 0.40384615384615385
Lift: 2.31917775945341
=====
Rule: spaghetti-french fries
Support: 0.005733333333333333
Confidence: 0.20772946859903382
Lift: 2.1850925869463587
=====
Rule: mineral water-milk
Support: 0.004
Confidence: 0.3
Lift: 2.314814814814815
=====
Rule: spaghetti-frozen vegetables
Support: 0.0041333333333333335
Confidence: 0.4133333333333333
Lift: 2.3736600306278715
=====
Rule: mineral water-frozen smoothie
Support: 0.0061333333333333335
Confidence: 0.304635761589404

```

```

Lift: 2.350584580165154
=====
Rule: spaghetti-frozen smoothie
Support: 0.0056
Confidence: 0.3925233644859813
Lift: 2.2541540839547163
=====
Rule: frozen vegetables-milk
Support: 0.005733333333333333
Confidence: 0.3385826771653543
Lift: 2.6125206571400796
=====
Rule: frozen vegetables-mineral water
Support: 0.0092
Confidence: 0.5433070866141732
Lift: 2.2802479852301616
=====
Rule: spaghetti-frozen vegetables
Support: 0.008666666666666666
Confidence: 0.5118110236220472
Lift: 2.939190411305784
=====
Rule: frozen vegetables-mineral water
Support: 0.011066666666666667
Confidence: 0.30970149253731344
Lift: 2.3896720103187765
=====
Rule: frozen vegetables-milk
Support: 0.0048
Confidence: 0.20338983050847456
Lift: 3.094165778526489
=====
Rule: frozen vegetables-shrimp
Support: 0.004666666666666667
Confidence: 0.28
Lift: 2.160493827160494
=====
Rule: frozen vegetables-milk
Support: 0.004
Confidence: 0.5
Lift: 3.858024691358025
=====
Rule: spaghetti-frozen vegetables
Support: 0.008266666666666667
Confidence: 0.35028248587570626
Lift: 2.011576297142264
=====
Rule: frozen vegetables-milk

```

```

Support: 0.004133333333333335
Confidence: 0.29523809523809524
Lift: 3.096903096903097
=====
Rule: frozen vegetables-mineral water
Support: 0.006533333333333334
Confidence: 0.5764705882352941
Lift: 2.419434477764245
=====
Rule: frozen vegetables-mineral water
Support: 0.0072
Confidence: 0.20149253731343283
Lift: 2.824661738038778
=====
Rule: frozen vegetables-mineral water
Support: 0.005066666666666666
Confidence: 0.6333333333333333
Lift: 2.6580861779518745
=====
Rule: spaghetti-frozen vegetables
Support: 0.012
Confidence: 0.20089285714285715
Lift: 2.107267732267732
=====
Rule: frozen vegetables-mineral water
Support: 0.005866666666666667
Confidence: 0.24043715846994534
Lift: 2.5220680958385873
=====
Rule: frozen vegetables-mineral water
Support: 0.0044
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: frozen vegetables-mineral water
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.036768820566839
=====
Rule: spaghetti-frozen vegetables
Support: 0.005733333333333333
Confidence: 0.5058823529411764
Lift: 2.905143680749482
=====
Rule: spaghetti-frozen vegetables
Support: 0.006
Confidence: 0.36
Lift: 2.0673813169984685

```



```

=====
Rule: frozen vegetables-shrimp
Support: 0.004
Confidence: 0.24000000000000002
Lift: 3.5087719298245617
=====
Rule: spaghetti-frozen vegetables
Support: 0.006666666666666667
Confidence: 0.23923444976076555
Lift: 3.497579674864993
=====
Rule: mineral water-grated cheese
Support: 0.005066666666666666
Confidence: 0.2900763358778626
Lift: 2.9519301480108133
=====
Rule: spaghetti-grated cheese
Support: 0.005333333333333333
Confidence: 0.4705882352941176
Lift: 2.7024592379064947
=====
Rule: spaghetti-mineral water
Support: 0.006266666666666667
Confidence: 0.3587786259541985
Lift: 2.0603673006558108
=====
Rule: spaghetti-green tea
Support: 0.0064
Confidence: 0.43243243243243246
Lift: 2.483340921319482
=====
Rule: spaghetti-green tea
Support: 0.004533333333333334
Confidence: 0.45945945945945954
Lift: 2.6385497289019497
=====
Rule: mineral water-ground beef
Support: 0.006666666666666667
Confidence: 0.390625
Lift: 3.975152645861601
=====
Rule: spaghetti-ground beef
Support: 0.0064
Confidence: 0.4
Lift: 2.2970903522205206
=====
Rule: low fat yogurt-mineral water
Support: 0.0048

```

```

Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: spaghetti-low fat yogurt
Support: 0.004
Confidence: 0.4166666666666667
Lift: 2.392802450229709
=====
Rule: mineral water-milk
Support: 0.011066666666666667
Confidence: 0.503030303030303
Lift: 2.1112072035407237
=====
Rule: milk-ground beef
Support: 0.004933333333333333
Confidence: 0.22424242424242424
Lift: 3.411395906324912
=====
Rule: milk-ground beef
Support: 0.004
Confidence: 0.410958904109589
Lift: 3.170979198376459
=====
Rule: spaghetti-milk
Support: 0.009733333333333333
Confidence: 0.44242424242424244
Lift: 2.540721147153
=====
Rule: mineral water-ground beef
Support: 0.006666666666666667
Confidence: 0.24271844660194175
Lift: 2.469997760535364
=====
Rule: mineral water-ground beef
Support: 0.007466666666666667
Confidence: 0.5137614678899083
Lift: 2.1562456682564703
=====
Rule: mineral water-shrimp
Support: 0.005066666666666666
Confidence: 0.21590909090909088
Lift: 2.1971752806216847
=====
Rule: mineral water-ground beef
Support: 0.005066666666666666
Confidence: 0.5205479452054794
Lift: 2.184728365439897
=====

```

```

Rule: spaghetti-mineral water
Support: 0.017066666666666667
Confidence: 0.4169381107491857
Lift: 2.3943612791875135
=====
Rule: mineral water-tomatoes
Support: 0.005466666666666665
Confidence: 0.2240437158469945
Lift: 2.279956402784883
=====
Rule: spaghetti-ground beef
Support: 0.006133333333333335
Confidence: 0.4339622641509434
Lift: 2.492126325522263
=====
Rule: spaghetti-ground beef
Support: 0.0064
Confidence: 0.44036697247706424
Lift: 2.5289068097840595
=====
Rule: spaghetti-shrimp
Support: 0.006
Confidence: 0.5232558139534884
Lift: 3.004914704939635
=====
Rule: spaghetti-tomatoes
Support: 0.0056
Confidence: 0.47727272727272724
Lift: 2.7408464429903936
=====
Rule: spaghetti-mineral water
Support: 0.006
Confidence: 0.3515625
Lift: 2.018927067381317
=====
Rule: spaghetti-low fat yogurt
Support: 0.0044
Confidence: 0.2894736842105263
Lift: 2.2335932423651723
=====
Rule: mineral water-milk
Support: 0.008533333333333334
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: mineral water-milk
Support: 0.0044
Confidence: 0.25984251968503935

```

```

Lift: 2.004957713619131
=====
Rule: mineral water-shrimp
Support: 0.007866666666666666
Confidence: 0.3352272727272727
Lift: 2.5866301907968574
=====
Rule: mineral water-milk
Support: 0.008533333333333334
Confidence: 0.5614035087719299
Lift: 2.3561982740847647
=====
Rule: spaghetti-mineral water
Support: 0.015733333333333332
Confidence: 0.2633928571428571
Lift: 2.0323522927689592
=====
Rule: mineral water-milk
Support: 0.006533333333333334
Confidence: 0.2677595628415301
Lift: 2.0660460095797073
=====
Rule: mineral water-turkey
Support: 0.006133333333333335
Confidence: 0.5411764705882353
Lift: 2.271305836268475
=====
Rule: spaghetti-milk
Support: 0.0072
Confidence: 0.42187499999999994
Lift: 2.42271248085758
=====
Rule: spaghetti-milk
Support: 0.004533333333333334
Confidence: 0.31775700934579443
Lift: 2.451828775816315
=====
Rule: spaghetti-milk
Support: 0.005866666666666667
Confidence: 0.41904761904761906
Lift: 2.4064756070881645
=====
Rule: spaghetti-turkey
Support: 0.0048
Confidence: 0.4235294117647058
Lift: 2.432213314115845
=====
Rule: spaghetti-milk

```

```

Support: 0.004
Confidence: 0.40540540540540543
Lift: 2.328132113737014
=====
Rule: mineral water-shrimp
Support: 0.0044
Confidence: 0.55
Lift: 2.308337996642418
=====
Rule: mineral water-soup
Support: 0.0052
Confidence: 0.2254335260115607
Lift: 3.4295161157945335
=====
Rule: spaghetti-mineral water
Support: 0.010266666666666667
Confidence: 0.3737864077669903
Lift: 2.1465528776817973
=====
Rule: mineral water-tomatoes
Support: 0.0041333333333333335
Confidence: 0.5740740740740741
Lift: 2.4093763601318163
=====
Rule: mineral water-soup
Support: 0.004266666666666667
Confidence: 0.627450980392157
Lift: 2.6333980710359137
=====
Rule: mineral water-whole wheat rice
Support: 0.0041333333333333335
Confidence: 0.20529801324503313
Lift: 2.1595162683558886
=====
Rule: spaghetti-mineral water
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1009972733724274
=====
Rule: spaghetti-mineral water
Support: 0.0068
Confidence: 0.40157480314960625
Lift: 2.306134015024538
=====
Rule: spaghetti-mineral water
Support: 0.008533333333333334
Confidence: 0.36363636363636365
Lift: 2.0882639565641097

```

```

=====
Rule: spaghetti-mineral water
Support: 0.007466666666666667
Confidence: 0.5233644859813084
Lift: 2.1965493256070583
=====
Rule: spaghetti-mineral water
Support: 0.009333333333333334
Confidence: 0.3825136612021858
Lift: 2.1966711018502245
=====
Rule: spaghetti-olive oil
Support: 0.005066666666666666
Confidence: 0.4691358024691358
Lift: 2.694118314332709
=====
Rule: spaghetti-tomatoes
Support: 0.0044
Confidence: 0.6111111111111112
Lift: 3.50944359367024
=====
Rule: spaghetti-shrimp
Support: 0.004
Confidence: 0.35714285714285715
Lift: 2.050973528768322
=====
Rule: 0-almonds
Support: 0.0052
Confidence: 0.2565789473684211
Lift: 2.9424191211974895
=====
Rule: 0-black tea
Support: 0.0041333333333333335
Confidence: 0.2897196261682243
Lift: 2.237793199033658
=====
Rule: 0-french fries
Support: 0.004266666666666667
Confidence: 0.37209302325581395
Lift: 2.178530581123032
=====
Rule: 0-ham
Support: 0.0056
Confidence: 0.21105527638190955
Lift: 2.420358674104467
=====
Rule: 0-cereals
Support: 0.006933333333333333

```

```

Confidence: 0.26943005181347146
Lift: 2.081076610299728
=====
Rule: 0-light cream
Support: 0.004533333333333334
Confidence: 0.2905982905982906
Lift: 4.843304843304844
=====
Rule: 0-tomato sauce
Support: 0.005066666666666666
Confidence: 0.3584905660377358
Lift: 2.1894782127711876
=====
Rule: 0-eggs
Support: 0.004266666666666667
Confidence: 0.4050632911392405
Lift: 2.2536904180595725
=====
Rule: 0-escalope
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 3.7903273197390845
=====
Rule: 0-escalope
Support: 0.005866666666666667
Confidence: 0.37288135593220345
Lift: 4.700185158809287
=====
Rule: 0-extra dark chocolate
Support: 0.005733333333333333
Confidence: 0.47777777777777775
Lift: 2.0063456513624485
=====
Rule: 0-fresh tuna
Support: 0.005066666666666666
Confidence: 0.2275449101796407
Lift: 2.3935299107255337
=====
Rule: 0-frozen vegetables
Support: 0.005333333333333333
Confidence: 0.2684563758389262
Lift: 2.8199199142744344
=====
Rule: 0-frozen vegetables
Support: 0.016666666666666666
Confidence: 0.2336448598130841
Lift: 2.454252729129035
=====

```

```

Rule: 0-frozen vegetables
Support: 0.016133333333333333
Confidence: 0.23586744639376217
Lift: 2.4775992268252325
=====
Rule: 0-grated cheese
Support: 0.011333333333333334
Confidence: 0.2162849872773537
Lift: 2.201000548955431
=====
Rule: 0-ground beef
Support: 0.016
Confidence: 0.3234501347708895
Lift: 3.2915549671393096
=====
Rule: 0-ground beef
Support: 0.014133333333333333
Confidence: 0.21501014198782958
Lift: 2.1880272251135984
=====
Rule: 0-pepper
Support: 0.006533333333333334
Confidence: 0.24623115577889448
Lift: 2.505744461793363
=====
Rule: 0-ground beef
Support: 0.0044
Confidence: 0.23404255319148937
Lift: 2.3817084788821847
=====
Rule: 0-ground beef
Support: 0.008933333333333333
Confidence: 0.21069182389937105
Lift: 2.144082332761578
=====
Rule: 0-spaghetti
Support: 0.0392
Confidence: 0.39891451831750335
Lift: 2.292612174238525
=====
Rule: 0-tomato sauce
Support: 0.005333333333333333
Confidence: 0.37735849056603776
Lift: 3.840147461662528
=====
Rule: 0-light mayo
Support: 0.0054666666666666665
Confidence: 0.20098039215686275

```



```

Lift: 2.114099496741193
=====
Rule: 0-meatballs
Support: 0.005466666666666665
Confidence: 0.2611464968152866
Lift: 2.017094465617559
=====
Rule: 0-milk
Support: 0.0152
Confidence: 0.3007915567282322
Lift: 2.3233127450687348
=====
Rule: 0-milk
Support: 0.009866666666666666
Confidence: 0.334841628959276
Lift: 2.586315362713254
=====
Rule: 0-mineral water
Support: 0.005066666666666666
Confidence: 0.48717948717948717
Lift: 2.0458265139116203
=====
Rule: 0-whole wheat pasta
Support: 0.008
Confidence: 0.2714932126696833
Lift: 4.138616046793953
=====
Rule: 0-pasta
Support: 0.005066666666666666
Confidence: 0.3220338983050848
Lift: 4.514493901473151
=====
Rule: 0-pepper
Support: 0.009733333333333333
Confidence: 0.3668341708542714
Lift: 2.108242361231445
=====
Rule: 0-red wine
Support: 0.010266666666666667
Confidence: 0.36492890995260663
Lift: 2.097292585934521
=====
Rule: 0-tomato sauce
Support: 0.006266666666666667
Confidence: 0.44339622641509435
Lift: 2.548254174799393
=====
Rule: 0-milk

```

```

Support: 0.005466666666666665
Confidence: 0.3203125
Lift: 2.474092430484037
=====
Rule: 0-spaghetti
Support: 0.0064
Confidence: 0.375
Lift: 2.1551724137931036
=====
Rule: 0-french fries
Support: 0.009066666666666667
Confidence: 0.412121212121217
Lift: 2.292959266253035
=====
Rule: 0-eggs
Support: 0.006
Confidence: 0.23560209424083772
Lift: 2.7018588789086895
=====
Rule: 0-eggs
Support: 0.004
Confidence: 0.2
Lift: 2.293577981651376
=====
Rule: 0-eggs
Support: 0.004133333333333335
Confidence: 0.3924050632911392
Lift: 2.1832625924952107
=====
Rule: 0-french fries
Support: 0.0056
Confidence: 0.2359550561797753
Lift: 2.7059066075662304
=====
Rule: 0-french fries
Support: 0.0056
Confidence: 0.2028985507246377
Lift: 2.3268182422550194
=====
Rule: 0-frozen vegetables
Support: 0.004933333333333333
Confidence: 0.20218579234972675
Lift: 2.123800339808054
=====
Rule: 0-milk
Support: 0.004133333333333335
Confidence: 0.3444444444444444
Lift: 2.6604874699622383

```

```

=====
Rule: 0-mineral water
Support: 0.005333333333333333
Confidence: 0.21857923497267756
Lift: 2.2243477100340323
=====
Rule: 0-spaghetti
Support: 0.005466666666666665
Confidence: 0.4555555555555555
Lift: 2.6181353767560664
=====
Rule: 0-mineral water
Support: 0.006933333333333333
Confidence: 0.28415300546448086
Lift: 2.19479664364944
=====
Rule: 0-spaghetti
Support: 0.0064
Confidence: 0.35820895522388063
Lift: 2.0586721564590844
=====
Rule: 0-spaghetti
Support: 0.0044
Confidence: 0.4177215189873418
Lift: 2.400698384984723
=====
Rule: 0-cake
Support: 0.005066666666666666
Confidence: 0.37254901960784315
Lift: 2.1410863195853054
=====
Rule: 0-cake
Support: 0.0064
Confidence: 0.48
Lift: 2.015677491601344
=====
Rule: 0-cake
Support: 0.0041333333333333335
Confidence: 0.34831460674157305
Lift: 2.0018080847216844
=====
Rule: 0-green tea
Support: 0.004
Confidence: 0.27272727272727276
Lift: 2.0682047982351324
=====
Rule: 0-milk
Support: 0.0045333333333333334

```

```

Confidence: 0.30909090909090914
Lift: 2.3874169085291643
=====
Rule: 0-mineral water
Support: 0.0076
Confidence: 0.5181818181818182
Lift: 2.1760154738878144
=====
Rule: 0-eggs
Support: 0.0041333333333333335
Confidence: 0.28703703703703703
Lift: 2.2170728916351985
=====
Rule: 0-spaghetti
Support: 0.0048
Confidence: 0.5070422535211268
Lift: 2.914035939776591
=====
Rule: 0-mineral water
Support: 0.006666666666666667
Confidence: 0.29239766081871343
Lift: 2.2584783276419675
=====
Rule: 0-spaghetti
Support: 0.0054666666666666665
Confidence: 0.36936936936936937
Lift: 2.122812467640054
=====
Rule: 0-mineral water
Support: 0.0048
Confidence: 0.21052631578947364
Lift: 2.214512438178194
=====
Rule: 0-cookies
Support: 0.004
Confidence: 0.38461538461538464
Lift: 2.251846514141596
=====
Rule: 0-eggs
Support: 0.0045333333333333334
Confidence: 0.3863636363636364
Lift: 2.3597127628072254
=====
Rule: 0-cooking oil
Support: 0.0044
Confidence: 0.3235294117647059
Lift: 2.4989398437026717
=====

```

```

Rule: 0-eggs
Support: 0.0092
Confidence: 0.27710843373493976
Lift: 2.1403844006303276
=====
Rule: 0-eggs
Support: 0.004
Confidence: 0.3333333333333333
Lift: 2.0358306188925077
=====
Rule: 0-escalope
Support: 0.0056
Confidence: 0.328125
Lift: 2.004020765472313
=====
Rule: 0-frozen smoothie
Support: 0.004
Confidence: 0.26785714285714285
Lift: 2.0689274680005885
=====
Rule: 0-frozen vegetables
Support: 0.005733333333333333
Confidence: 0.25
Lift: 2.5440976933514245
=====
Rule: 0-frozen vegetables
Support: 0.007866666666666666
Confidence: 0.34302325581395343
Lift: 2.6495102148348617
=====
Rule: 0-frozen vegetables
Support: 0.005333333333333333
Confidence: 0.23255813953488372
Lift: 3.260160834601174
=====
Rule: 0-herb & pepper
Support: 0.004
Confidence: 0.4411764705882353
Lift: 4.489584164737808
=====
Rule: 0-milk
Support: 0.006133333333333333
Confidence: 0.26589595375722547
Lift: 2.0537792514718753
=====
Rule: 0-mineral water
Support: 0.010933333333333333
Confidence: 0.20759493670886076

```

```

Lift: 2.1125671985297907
=====
Rule: 0-spaghetti
Support: 0.0092
Confidence: 0.3988439306358382
Lift: 2.292206497907116
=====
Rule: 0-mineral water
Support: 0.014
Confidence: 0.2658227848101266
Lift: 2.0532140948259006
=====
Rule: 0-milk
Support: 0.005066666666666666
Confidence: 0.30894308943089427
Lift: 2.3862751500841473
=====
Rule: 0-shrimp
Support: 0.005466666666666665
Confidence: 0.3037037037037037
Lift: 2.3458061563107906
=====
Rule: 0-milk
Support: 0.004
Confidence: 0.39473684210526316
Lift: 3.0489457423166564
=====
Rule: 0-milk
Support: 0.0108
Confidence: 0.2755102040816327
Lift: 2.128039681372034
=====
Rule: 0-mineral water
Support: 0.008266666666666667
Confidence: 0.5040650406504065
Lift: 2.116734493212793
=====
Rule: 0-mineral water
Support: 0.0056
Confidence: 0.5526315789473685
Lift: 2.320681322567337
=====
Rule: 0-spaghetti
Support: 0.006933333333333333
Confidence: 0.4227642276422764
Lift: 2.429679469208485
=====
Rule: 0-shrimp

```

```

Support: 0.0064
Confidence: 0.3555555555555556
Lift: 2.043422733077906
=====
Rule: 0-spaghetti
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0251778872468527
=====
Rule: 0-cookies
Support: 0.004666666666666667
Confidence: 0.35000000000000003
Lift: 2.6541961577350865
=====
Rule: 0-eggs
Support: 0.004
Confidence: 0.34090909090909094
Lift: 2.633180413818931
=====
Rule: 0-mineral water
Support: 0.0064
Confidence: 0.5454545454545455
Lift: 2.2905426040924364
=====
Rule: 0-eggs
Support: 0.0041333333333333335
Confidence: 0.3522727272727273
Lift: 2.024555903866249
=====
Rule: 0-cooking oil
Support: 0.0048
Confidence: 0.5714285714285714
Lift: 3.284072249589491
=====
Rule: 0-mineral water
Support: 0.004666666666666667
Confidence: 0.2317880794701987
Lift: 2.4381635287889063
=====
Rule: 0-mineral water
Support: 0.0076
Confidence: 0.37748344370860926
Lift: 2.169445078785111
=====
Rule: 0-frozen vegetables
Support: 0.0044
Confidence: 0.20245398773006135
Lift: 2.060250892775387

```

```

=====
Rule: 0-frozen vegetables
Support: 0.007333333333333333
Confidence: 0.3374233128834356
Lift: 2.6062562787083077
=====
Rule: 0-mineral water
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.0379092286410643
=====
Rule: 0-eggs
Support: 0.004266666666666667
Confidence: 0.47058823529411764
Lift: 2.704530087897228
=====
Rule: 0-eggs
Support: 0.0041333333333333335
Confidence: 0.20666666666666667
Lift: 4.177897574123989
=====
Rule: 0-eggs
Support: 0.005866666666666667
Confidence: 0.29333333333333333
Lift: 2.265705458290422
=====
Rule: 0-mineral water
Support: 0.010133333333333333
Confidence: 0.5066666666666666
Lift: 2.1276595744680846
=====
Rule: 0-eggs
Support: 0.008933333333333333
Confidence: 0.4466666666666666
Lift: 2.5670498084291187
=====
Rule: 0-eggs
Support: 0.0048
Confidence: 0.38297872340425526
Lift: 2.201027146001467
=====
Rule: 0-eggs
Support: 0.004266666666666667
Confidence: 0.30188679245283023
Lift: 2.331772341293745
=====
Rule: 0-mineral water
Support: 0.005866666666666667

```



```

Confidence: 0.488888888888889
Lift: 2.053004852556924
=====
Rule: 0-mineral water
Support: 0.00493333333333333
Confidence: 0.5441176470588235
Lift: 2.2849285290824053
=====
Rule: 0-eggs
Support: 0.00506666666666666
Confidence: 0.4222222222222217
Lift: 2.4265644955300125
=====
Rule: 0-escalope
Support: 0.004
Confidence: 0.5172413793103449
Lift: 2.172066262501448
=====
Rule: 0-frozen vegetables
Support: 0.00573333333333333
Confidence: 0.30069930069930073
Lift: 2.3226001598813135
=====
Rule: 0-spaghetti
Support: 0.0056
Confidence: 0.40384615384615385
Lift: 2.320954907161804
=====
Rule: 0-spaghetti
Support: 0.00573333333333333
Confidence: 0.20772946859903382
Lift: 2.1850925869463587
=====
Rule: 0-mineral water
Support: 0.004
Confidence: 0.3
Lift: 2.317198764160659
=====
Rule: 0-frozen vegetables
Support: 0.004
Confidence: 0.4
Lift: 2.298850574712644
=====
Rule: 0-mineral water
Support: 0.00613333333333333
Confidence: 0.304635761589404
Lift: 2.35300536758036
=====

```

```

Rule: 0-frozen smoothie
Support: 0.005466666666666665
Confidence: 0.38317757009345793
Lift: 2.2021699430658503
=====
Rule: 0-frozen vegetables
Support: 0.005733333333333333
Confidence: 0.3385826771653543
Lift: 2.6152112036458877
=====
Rule: 0-frozen vegetables
Support: 0.0092
Confidence: 0.5433070866141732
Lift: 2.2815247198243553
=====
Rule: 0-frozen vegetables
Support: 0.008666666666666666
Confidence: 0.5118110236220472
Lift: 2.9414426644945246
=====
Rule: 0-frozen vegetables
Support: 0.011066666666666667
Confidence: 0.30970149253731344
Lift: 2.392133052553914
=====
Rule: 0-frozen vegetables
Support: 0.004666666666666667
Confidence: 0.4117647058823529
Lift: 3.180468891985218
=====
Rule: 0-frozen vegetables
Support: 0.004666666666666667
Confidence: 0.28
Lift: 2.1627188465499487
=====
Rule: 0-frozen vegetables
Support: 0.004
Confidence: 0.5
Lift: 3.861997940267765
=====
Rule: 0-frozen vegetables
Support: 0.008133333333333333
Confidence: 0.29186602870813394
Lift: 2.254372003409891
=====
Rule: 0-frozen vegetables
Support: 0.004133333333333333
Confidence: 0.29523809523809524

```

```

Lift: 3.1012404961984794
=====
Rule: 0-frozen vegetables
Support: 0.006533333333333334
Confidence: 0.5764705882352941
Lift: 2.420789144325143
=====
Rule: 0-frozen vegetables
Support: 0.0072
Confidence: 0.20149253731343283
Lift: 2.824661738038778
=====
Rule: 0-frozen vegetables
Support: 0.005066666666666666
Confidence: 0.6333333333333333
Lift: 2.6595744680851063
=====
Rule: 0-frozen vegetables
Support: 0.012
Confidence: 0.20089285714285715
Lift: 2.110219087635054
=====
Rule: 0-frozen vegetables
Support: 0.005866666666666667
Confidence: 0.24043715846994534
Lift: 2.5256004040960645
=====
Rule: 0-frozen vegetables
Support: 0.0044
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: 0-frozen vegetables
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.0379092286410643
=====
Rule: 0-frozen vegetables
Support: 0.0056
Confidence: 0.4941176470588235
Lift: 2.839756592292089
=====
Rule: 0-frozen vegetables
Support: 0.006
Confidence: 0.36
Lift: 2.0689655172413794
=====
Rule: 0-frozen vegetables

```

```

Support: 0.004
Confidence: 0.24000000000000002
Lift: 3.5087719298245617
=====
Rule: 0-frozen vegetables
Support: 0.006666666666666667
Confidence: 0.23923444976076555
Lift: 3.497579674864993
=====
Rule: 0-mineral water
Support: 0.005066666666666666
Confidence: 0.2900763358778626
Lift: 2.9519301480108133
=====
Rule: 0-grated cheese
Support: 0.005333333333333333
Confidence: 0.4705882352941176
Lift: 2.704530087897228
=====
Rule: 0-mineral water
Support: 0.006266666666666667
Confidence: 0.3587786259541985
Lift: 2.061946126173555
=====
Rule: 0-green tea
Support: 0.0064
Confidence: 0.43243243243243246
Lift: 2.4852438645542096
=====
Rule: 0-spaghetti
Support: 0.004533333333333334
Confidence: 0.45945945945945954
Lift: 2.640571606088848
=====
Rule: 0-mineral water
Support: 0.006666666666666667
Confidence: 0.390625
Lift: 3.975152645861601
=====
Rule: 0-spaghetti
Support: 0.0064
Confidence: 0.4
Lift: 2.298850574712644
=====
Rule: 0-low fat yogurt
Support: 0.0048
Confidence: 0.5
Lift: 2.0996640537514

```

```

=====
Rule: 0-low fat yogurt
Support: 0.004
Confidence: 0.4166666666666667
Lift: 2.3946360153256707
=====
Rule: 0-mineral water
Support: 0.011066666666666667
Confidence: 0.503030303030303
Lift: 2.1123892904408024
=====
Rule: 0-milk
Support: 0.004933333333333333
Confidence: 0.22424242424242424
Lift: 3.4183296378418326
=====
Rule: 0-milk
Support: 0.004
Confidence: 0.410958904109589
Lift: 3.1742448824118616
=====
Rule: 0-milk
Support: 0.009733333333333333
Confidence: 0.44242424242424244
Lift: 2.5426680599094396
=====
Rule: 0-mineral water
Support: 0.006666666666666667
Confidence: 0.24271844660194175
Lift: 2.469997760535364
=====
Rule: 0-mineral water
Support: 0.007466666666666667
Confidence: 0.5137614678899083
Lift: 2.157452972661989
=====
Rule: 0-mineral water
Support: 0.005066666666666666
Confidence: 0.21590909090909088
Lift: 2.1971752806216847
=====
Rule: 0-mineral water
Support: 0.005066666666666666
Confidence: 0.5205479452054794
Lift: 2.185951617604197
=====
Rule: 0-mineral water
Support: 0.017066666666666667

```

```

Confidence: 0.4169381107491857
Lift: 2.396196038788424
=====
Rule: 0-mineral water
Support: 0.005466666666666665
Confidence: 0.2240437158469945
Lift: 2.279956402784883
=====
Rule: 0-spaghetti
Support: 0.006133333333333335
Confidence: 0.4339622641509434
Lift: 2.494036000867491
=====
Rule: 0-spaghetti
Support: 0.0064
Confidence: 0.44036697247706424
Lift: 2.5308446694084155
=====
Rule: 0-shrimp
Support: 0.006
Confidence: 0.5232558139534884
Lift: 3.0072173215717726
=====
Rule: 0-spaghetti
Support: 0.0056
Confidence: 0.47727272727272724
Lift: 2.7429467084639496
=====
Rule: 0-mineral water
Support: 0.006
Confidence: 0.3515625
Lift: 2.0204741379310347
=====
Rule: 0-low fat yogurt
Support: 0.0044
Confidence: 0.2894736842105263
Lift: 2.235893544365548
=====
Rule: 0-mineral water
Support: 0.008533333333333334
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: 0-mineral water
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 2.0070225516352163
=====

```

```

Rule: 0-mineral water
Support: 0.007866666666666666
Confidence: 0.3352272727272727
Lift: 2.589294073588615
=====
Rule: 0-mineral water
Support: 0.008533333333333334
Confidence: 0.5614035087719299
Lift: 2.35751753403666
=====
Rule: 0-mineral water
Support: 0.015733333333333332
Confidence: 0.2633928571428571
Lift: 2.0344453435339114
=====
Rule: 0-mineral water
Support: 0.006533333333333334
Confidence: 0.2677595628415301
Lift: 2.0681737603619728
=====
Rule: 0-mineral water
Support: 0.006133333333333335
Confidence: 0.5411764705882353
Lift: 2.2725775640603385
=====
Rule: 0-spaghetti
Support: 0.007066666666666666
Confidence: 0.41406249999999994
Lift: 2.379669540229885
=====
Rule: 0-spaghetti
Support: 0.004533333333333334
Confidence: 0.31775700934579443
Lift: 2.454353831198206
=====
Rule: 0-milk
Support: 0.005866666666666667
Confidence: 0.41904761904761906
Lift: 2.40831964969896
=====
Rule: 0-turkey
Support: 0.0048
Confidence: 0.4235294117647058
Lift: 2.434077079107505
=====
Rule: 0-whole wheat pasta
Support: 0.004
Confidence: 0.40540540540540543

```

```

Lift: 2.3299161230195717
=====
Rule: 0-mineral water
Support: 0.0044
Confidence: 0.55
Lift: 2.3096304591265397
=====
Rule: 0-mineral water
Support: 0.0052
Confidence: 0.2254335260115607
Lift: 3.4364866770054983
=====
Rule: 0-mineral water
Support: 0.010266666666666667
Confidence: 0.3737864077669903
Lift: 2.1481977457873005
=====
Rule: 0-mineral water
Support: 0.0041333333333333335
Confidence: 0.5740740740740741
Lift: 2.4107253950479035
=====
Rule: 0-mineral water
Support: 0.004266666666666667
Confidence: 0.627450980392157
Lift: 2.6348725380409728
=====
Rule: 0-mineral water
Support: 0.0041333333333333335
Confidence: 0.20529801324503313
Lift: 2.1595162683558886
=====
Rule: 0-mineral water
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1026072329688814
=====
Rule: 0-mineral water
Support: 0.0068
Confidence: 0.40157480314960625
Lift: 2.307901167526473
=====
Rule: 0-mineral water
Support: 0.008533333333333334
Confidence: 0.36363636363636365
Lift: 2.0898641588296765
=====
Rule: 0-mineral water

```



```

Support: 0.007466666666666667
Confidence: 0.5233644859813084
Lift: 2.197779196450063
=====
Rule: 0-mineral water
Support: 0.009333333333333334
Confidence: 0.3825136612021858
Lift: 2.1983543747252057
=====
Rule: 0-spaghetti
Support: 0.005066666666666666
Confidence: 0.4691358024691358
Lift: 2.696182772811125
=====
Rule: 0-spaghetti
Support: 0.0044
Confidence: 0.6111111111111112
Lift: 3.5121328224776507
=====
Rule: 0-shrimp
Support: 0.004
Confidence: 0.35714285714285715
Lift: 2.0525451559934322
=====
Rule: milk-chocolate
Support: 0.005466666666666665
Confidence: 0.3203125
Lift: 2.4715470679012346
=====
Rule: spaghetti-chocolate
Support: 0.0064
Confidence: 0.375
Lift: 2.153522205206738
=====
Rule: french fries-eggs
Support: 0.009066666666666667
Confidence: 0.41212121212121217
Lift: 2.292959266253035
=====
Rule: eggs-green tea
Support: 0.006
Confidence: 0.23560209424083772
Lift: 2.7018588789086895
=====
Rule: eggs-ground beef
Support: 0.004
Confidence: 0.2
Lift: 2.293577981651376

```

```

=====
Rule: eggs-pancakes
Support: 0.004133333333333335
Confidence: 0.3924050632911392
Lift: 2.1832625924952107
=====
Rule: french fries-milk
Support: 0.0056
Confidence: 0.2359550561797753
Lift: 2.7059066075662304
=====
Rule: spaghetti-french fries
Support: 0.0056
Confidence: 0.2028985507246377
Lift: 2.3268182422550194
=====
Rule: frozen vegetables-mineral water
Support: 0.004933333333333333
Confidence: 0.20218579234972675
Lift: 2.1208299896824485
=====
Rule: milk-ground beef
Support: 0.004133333333333335
Confidence: 0.3444444444444444
Lift: 2.657750342935528
=====
Rule: mineral water-ground beef
Support: 0.005333333333333333
Confidence: 0.21857923497267756
Lift: 2.2243477100340323
=====
Rule: spaghetti-ground beef
Support: 0.005466666666666665
Confidence: 0.4555555555555555
Lift: 2.6161306789178154
=====
Rule: mineral water-milk
Support: 0.006933333333333333
Confidence: 0.28415300546448086
Lift: 2.1925386224111176
=====
Rule: spaghetti-milk
Support: 0.0064
Confidence: 0.35820895522388063
Lift: 2.0570958378094217
=====
Rule: spaghetti-pancakes
Support: 0.0044

```

```

Confidence: 0.4177215189873418
Lift: 2.3988601779518097
=====
Rule: spaghetti-cake
Support: 0.0052
Confidence: 0.3823529411764706
Lift: 2.195748130799027
=====
Rule: cake-mineral water
Support: 0.0064
Confidence: 0.48
Lift: 2.0145495243424736
=====
Rule: spaghetti-cake
Support: 0.004133333333333335
Confidence: 0.34831460674157305
Lift: 2.0002753067088803
=====
Rule: green tea-chocolate
Support: 0.004
Confidence: 0.2727272727272726
Lift: 2.066115702479339
=====
Rule: milk-chocolate
Support: 0.004533333333333334
Confidence: 0.30909090909090914
Lift: 2.384960718294052
=====
Rule: mineral water-chocolate
Support: 0.0076
Confidence: 0.5181818181818182
Lift: 2.174797781960625
=====
Rule: eggs-milk
Support: 0.004133333333333335
Confidence: 0.28703703703703703
Lift: 2.2147919524462734
=====
Rule: spaghetti-ground beef
Support: 0.0048
Confidence: 0.5070422535211268
Lift: 2.911804671828829
=====
Rule: mineral water-milk
Support: 0.006666666666666667
Confidence: 0.29239766081871343
Lift: 2.2561547902678507
=====

```

```

Rule: spaghetti-milk
Support: 0.0054666666666666665
Confidence: 0.36936936936936937
Lift: 2.1211870369603907
=====
Rule: mineral water-pancakes
Support: 0.0048
Confidence: 0.21052631578947364
Lift: 2.214512438178194
=====
Rule: cookies-chocolate
Support: 0.004
Confidence: 0.38461538461538464
Lift: 2.2500900036001443
=====
Rule: eggs-cooking oil
Support: 0.0045333333333333334
Confidence: 0.3863636363636364
Lift: 2.3577927361491238
=====
Rule: cooking oil-chocolate
Support: 0.0044
Confidence: 0.3235294117647059
Lift: 2.4963689179375455
=====
Rule: eggs-milk
Support: 0.0092
Confidence: 0.27710843373493976
Lift: 2.1381823590658935
=====
Rule: eggs-chocolate
Support: 0.004
Confidence: 0.3333333333333333
Lift: 2.034174125305126
=====
Rule: escalope-mineral water
Support: 0.0056
Confidence: 0.328125
Lift: 2.002390154597234
=====
Rule: frozen smoothie-milk
Support: 0.0041333333333333335
Confidence: 0.2767857142857143
Lift: 2.1356922398589067
=====
Rule: frozen vegetables-chocolate
Support: 0.005733333333333333
Confidence: 0.25

```

```

Lift: 2.5440976933514245
=====
Rule: frozen vegetables-milk
Support: 0.008
Confidence: 0.3488372093023256
Lift: 2.691645133505599
=====
Rule: frozen vegetables-chocolate
Support: 0.004
Confidence: 0.24390243902439024
Lift: 2.558417192563534
=====
Rule: frozen vegetables-shrimp
Support: 0.005333333333333333
Confidence: 0.23255813953488372
Lift: 3.260160834601174
=====
Rule: spaghetti-frozen vegetables
Support: 0.007866666666666666
Confidence: 0.20068027210884354
Lift: 2.1050378193235333
=====
Rule: herb & pepper-chocolate
Support: 0.004
Confidence: 0.4411764705882353
Lift: 4.489584164737808
=====
Rule: milk-chocolate
Support: 0.006133333333333333
Confidence: 0.26589595375722547
Lift: 2.051666309855135
=====
Rule: mineral water-chocolate
Support: 0.010933333333333333
Confidence: 0.20759493670886076
Lift: 2.1125671985297907
=====
Rule: spaghetti-chocolate
Support: 0.0092
Confidence: 0.3988439306358382
Lift: 2.290451362763236
=====
Rule: mineral water-milk
Support: 0.014
Confidence: 0.2658227848101266
Lift: 2.0511017346460387
=====
Rule: milk-chocolate

```

```

Support: 0.0052
Confidence: 0.31707317073170727
Lift: 2.4465522433002107
=====
Rule: shrimp-milk
Support: 0.005466666666666665
Confidence: 0.3037037037037037
Lift: 2.343392775491541
=====
Rule: milk-chocolate
Support: 0.004
Confidence: 0.39473684210526316
Lift: 3.045808966861599
=====
Rule: spaghetti-milk
Support: 0.010933333333333333
Confidence: 0.2789115646258503
Lift: 2.15209540606366
=====
Rule: mineral water-chocolate
Support: 0.008266666666666667
Confidence: 0.5040650406504065
Lift: 2.115549974749887
=====
Rule: mineral water-chocolate
Support: 0.0056
Confidence: 0.5526315789473685
Lift: 2.3193826760521903
=====
Rule: spaghetti-chocolate
Support: 0.007066666666666666
Confidence: 0.4308943089430894
Lift: 2.4745078997497476
=====
Rule: spaghetti-chocolate
Support: 0.004
Confidence: 0.375
Lift: 2.153522205206738
=====
Rule: spaghetti-shrimp
Support: 0.0064
Confidence: 0.35555555555555556
Lift: 2.0418580908626853
=====
Rule: spaghetti-tomatoes
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0236272150514107

```

```

=====
Rule: cookies-green tea
Support: 0.004666666666666667
Confidence: 0.35000000000000003
Lift: 2.651515151515152
=====
Rule: eggs-cooking oil
Support: 0.004
Confidence: 0.34090909090909094
Lift: 2.6304713804713806
=====
Rule: mineral water-eggs
Support: 0.0064
Confidence: 0.5454545454545455
Lift: 2.2892608231164475
=====
Rule: spaghetti-eggs
Support: 0.0041333333333333335
Confidence: 0.3522727272727273
Lift: 2.0230057079214814
=====
Rule: spaghetti-cooking oil
Support: 0.0048
Confidence: 0.5714285714285714
Lift: 3.281557646029315
=====
Rule: mineral water-cooking oil
Support: 0.004666666666666667
Confidence: 0.2317880794701987
Lift: 2.4381635287889063
=====
Rule: spaghetti-mineral water
Support: 0.0076
Confidence: 0.37748344370860926
Lift: 2.1677839416650606
=====
Rule: frozen vegetables-eggs
Support: 0.0044
Confidence: 0.20245398773006135
Lift: 2.060250892775387
=====
Rule: frozen vegetables-eggs
Support: 0.007333333333333333
Confidence: 0.3374233128834356
Lift: 2.6035749450882375
=====
Rule: mineral water-eggs
Support: 0.0044

```

```

Confidence: 0.4852941176470588
Lift: 2.036768820566839
=====
Rule: spaghetti-eggs
Support: 0.004266666666666667
Confidence: 0.47058823529411764
Lift: 2.7024592379064947
=====
Rule: eggs-ground beef
Support: 0.0041333333333333335
Confidence: 0.20666666666666667
Lift: 4.177897574123989
=====
Rule: eggs-milk
Support: 0.005866666666666667
Confidence: 0.29333333333333333
Lift: 2.263374485596708
=====
Rule: mineral water-eggs
Support: 0.010133333333333333
Confidence: 0.5066666666666666
Lift: 2.1264689423614995
=====
Rule: spaghetti-eggs
Support: 0.008933333333333333
Confidence: 0.4466666666666666
Lift: 2.565084226646248
=====
Rule: spaghetti-eggs
Support: 0.0048
Confidence: 0.38297872340425526
Lift: 2.1993418265941154
=====
Rule: eggs-milk
Support: 0.004266666666666667
Confidence: 0.30188679245283023
Lift: 2.329373398555789
=====
Rule: mineral water-eggs
Support: 0.005866666666666667
Confidence: 0.4888888888888889
Lift: 2.0518559970154824
=====
Rule: mineral water-eggs
Support: 0.004933333333333333
Confidence: 0.5441176470588235
Lift: 2.2836498897264557
=====

```



```

Rule: spaghetti-eggs
Support: 0.005066666666666666
Confidence: 0.4222222222222217
Lift: 2.4247064828994382
=====
Rule: escalope-mineral water
Support: 0.004
Confidence: 0.5172413793103449
Lift: 2.1708507805414587
=====
Rule: frozen vegetables-milk
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 2.3202106535439873
=====
Rule: spaghetti-ground beef
Support: 0.0056
Confidence: 0.40384615384615385
Lift: 2.31917775945341
=====
Rule: spaghetti-pancakes
Support: 0.005733333333333333
Confidence: 0.20772946859903382
Lift: 2.1850925869463587
=====
Rule: mineral water-milk
Support: 0.004
Confidence: 0.3
Lift: 2.314814814814815
=====
Rule: spaghetti-frozen vegetables
Support: 0.0041333333333333335
Confidence: 0.4133333333333333
Lift: 2.3736600306278715
=====
Rule: mineral water-frozen smoothie
Support: 0.0061333333333333335
Confidence: 0.304635761589404
Lift: 2.350584580165154
=====
Rule: spaghetti-frozen smoothie
Support: 0.0056
Confidence: 0.3925233644859813
Lift: 2.2541540839547163
=====
Rule: frozen vegetables-milk
Support: 0.005733333333333333
Confidence: 0.3385826771653543

```

```

Lift: 2.6125206571400796
=====
Rule: frozen vegetables-mineral water
Support: 0.0092
Confidence: 0.5433070866141732
Lift: 2.2802479852301616
=====
Rule: spaghetti-frozen vegetables
Support: 0.008666666666666666
Confidence: 0.5118110236220472
Lift: 2.939190411305784
=====
Rule: frozen vegetables-mineral water
Support: 0.011066666666666667
Confidence: 0.30970149253731344
Lift: 2.3896720103187765
=====
Rule: frozen vegetables-milk
Support: 0.0048
Confidence: 0.20338983050847456
Lift: 3.094165778526489
=====
Rule: frozen vegetables-shrimp
Support: 0.004666666666666667
Confidence: 0.28
Lift: 2.160493827160494
=====
Rule: frozen vegetables-milk
Support: 0.004
Confidence: 0.5
Lift: 3.858024691358025
=====
Rule: spaghetti-frozen vegetables
Support: 0.008266666666666667
Confidence: 0.35028248587570626
Lift: 2.011576297142264
=====
Rule: frozen vegetables-milk
Support: 0.0041333333333333335
Confidence: 0.29523809523809524
Lift: 3.096903096903097
=====
Rule: frozen vegetables-mineral water
Support: 0.0065333333333333334
Confidence: 0.5764705882352941
Lift: 2.419434477764245
=====
Rule: frozen vegetables-mineral water

```

```

Support: 0.0072
Confidence: 0.20149253731343283
Lift: 2.824661738038778
=====
Rule: frozen vegetables-mineral water
Support: 0.005066666666666666
Confidence: 0.6333333333333333
Lift: 2.6580861779518745
=====
Rule: spaghetti-frozen vegetables
Support: 0.012
Confidence: 0.20089285714285715
Lift: 2.107267732267732
=====
Rule: frozen vegetables-mineral water
Support: 0.005866666666666667
Confidence: 0.24043715846994534
Lift: 2.5220680958385873
=====
Rule: frozen vegetables-mineral water
Support: 0.0044
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: frozen vegetables-mineral water
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.036768820566839
=====
Rule: spaghetti-frozen vegetables
Support: 0.005733333333333333
Confidence: 0.5058823529411764
Lift: 2.905143680749482
=====
Rule: spaghetti-frozen vegetables
Support: 0.006
Confidence: 0.36
Lift: 2.0673813169984685
=====
Rule: frozen vegetables-shrimp
Support: 0.004
Confidence: 0.24000000000000002
Lift: 3.5087719298245617
=====
Rule: spaghetti-frozen vegetables
Support: 0.006666666666666667
Confidence: 0.23923444976076555
Lift: 3.497579674864993

```

```

=====
Rule: mineral water-grated cheese
Support: 0.005066666666666666
Confidence: 0.2900763358778626
Lift: 2.9519301480108133
=====
Rule: spaghetti-grated cheese
Support: 0.005333333333333333
Confidence: 0.4705882352941176
Lift: 2.7024592379064947
=====
Rule: spaghetti-mineral water
Support: 0.006266666666666667
Confidence: 0.3587786259541985
Lift: 2.0603673006558108
=====
Rule: spaghetti-green tea
Support: 0.0064
Confidence: 0.43243243243243246
Lift: 2.483340921319482
=====
Rule: spaghetti-green tea
Support: 0.0045333333333333334
Confidence: 0.45945945945945954
Lift: 2.6385497289019497
=====
Rule: mineral water-ground beef
Support: 0.006666666666666667
Confidence: 0.390625
Lift: 3.975152645861601
=====
Rule: spaghetti-ground beef
Support: 0.0064
Confidence: 0.4
Lift: 2.2970903522205206
=====
Rule: low fat yogurt-mineral water
Support: 0.0048
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: spaghetti-low fat yogurt
Support: 0.004
Confidence: 0.4166666666666667
Lift: 2.392802450229709
=====
Rule: mineral water-milk
Support: 0.011066666666666667

```

```

Confidence: 0.503030303030303
Lift: 2.1112072035407237
=====
Rule: milk-ground beef
Support: 0.004933333333333333
Confidence: 0.22424242424242424
Lift: 3.411395906324912
=====
Rule: milk-ground beef
Support: 0.004
Confidence: 0.410958904109589
Lift: 3.170979198376459
=====
Rule: spaghetti-milk
Support: 0.009733333333333333
Confidence: 0.44242424242424244
Lift: 2.540721147153
=====
Rule: mineral water-ground beef
Support: 0.006666666666666667
Confidence: 0.24271844660194175
Lift: 2.469997760535364
=====
Rule: mineral water-pancakes
Support: 0.007466666666666667
Confidence: 0.5137614678899083
Lift: 2.1562456682564703
=====
Rule: mineral water-shrimp
Support: 0.005066666666666666
Confidence: 0.21590909090909088
Lift: 2.1971752806216847
=====
Rule: mineral water-ground beef
Support: 0.005066666666666666
Confidence: 0.5205479452054794
Lift: 2.184728365439897
=====
Rule: spaghetti-mineral water
Support: 0.017066666666666667
Confidence: 0.4169381107491857
Lift: 2.3943612791875135
=====
Rule: mineral water-tomatoes
Support: 0.005466666666666665
Confidence: 0.2240437158469945
Lift: 2.279956402784883
=====

```

```

Rule: spaghetti-ground beef
Support: 0.0061333333333333335
Confidence: 0.4339622641509434
Lift: 2.492126325522263
=====
Rule: spaghetti-pancakes
Support: 0.0064
Confidence: 0.44036697247706424
Lift: 2.5289068097840595
=====
Rule: spaghetti-shrimp
Support: 0.006
Confidence: 0.5232558139534884
Lift: 3.004914704939635
=====
Rule: spaghetti-tomatoes
Support: 0.0056
Confidence: 0.47727272727272724
Lift: 2.7408464429903936
=====
Rule: spaghetti-mineral water
Support: 0.006
Confidence: 0.3515625
Lift: 2.018927067381317
=====
Rule: spaghetti-low fat yogurt
Support: 0.0044
Confidence: 0.2894736842105263
Lift: 2.2335932423651723
=====
Rule: mineral water-milk
Support: 0.0085333333333333334
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: mineral water-milk
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 2.004957713619131
=====
Rule: mineral water-shrimp
Support: 0.0078666666666666666
Confidence: 0.3352272727272727
Lift: 2.5866301907968574
=====
Rule: mineral water-milk
Support: 0.0085333333333333334
Confidence: 0.5614035087719299

```

```

Lift: 2.3561982740847647
=====
Rule: spaghetti-mineral water
Support: 0.01573333333333332
Confidence: 0.2633928571428571
Lift: 2.0323522927689592
=====
Rule: mineral water-milk
Support: 0.00653333333333334
Confidence: 0.2677595628415301
Lift: 2.0660460095797073
=====
Rule: mineral water-turkey
Support: 0.006133333333333335
Confidence: 0.5411764705882353
Lift: 2.271305836268475
=====
Rule: spaghetti-milk
Support: 0.0072
Confidence: 0.42187499999999994
Lift: 2.42271248085758
=====
Rule: spaghetti-milk
Support: 0.004533333333333334
Confidence: 0.31775700934579443
Lift: 2.451828775816315
=====
Rule: spaghetti-milk
Support: 0.005866666666666667
Confidence: 0.41904761904761906
Lift: 2.4064756070881645
=====
Rule: spaghetti-turkey
Support: 0.0048
Confidence: 0.4235294117647058
Lift: 2.432213314115845
=====
Rule: spaghetti-milk
Support: 0.004
Confidence: 0.40540540540540543
Lift: 2.328132113737014
=====
Rule: mineral water-shrimp
Support: 0.0044
Confidence: 0.55
Lift: 2.308337996642418
=====
Rule: mineral water-soup

```

```

Support: 0.0052
Confidence: 0.2254335260115607
Lift: 3.4295161157945335
=====
Rule: spaghetti-mineral water
Support: 0.010266666666666667
Confidence: 0.3737864077669903
Lift: 2.1465528776817973
=====
Rule: mineral water-tomatoes
Support: 0.0041333333333333335
Confidence: 0.5740740740740741
Lift: 2.4093763601318163
=====
Rule: mineral water-pancakes
Support: 0.004266666666666667
Confidence: 0.627450980392157
Lift: 2.6333980710359137
=====
Rule: mineral water-pancakes
Support: 0.0041333333333333335
Confidence: 0.20529801324503313
Lift: 2.1595162683558886
=====
Rule: spaghetti-mineral water
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1009972733724274
=====
Rule: spaghetti-mineral water
Support: 0.0068
Confidence: 0.40157480314960625
Lift: 2.306134015024538
=====
Rule: spaghetti-mineral water
Support: 0.008533333333333334
Confidence: 0.36363636363636365
Lift: 2.0882639565641097
=====
Rule: spaghetti-mineral water
Support: 0.007466666666666667
Confidence: 0.5233644859813084
Lift: 2.1965493256070583
=====
Rule: spaghetti-mineral water
Support: 0.009333333333333334
Confidence: 0.3825136612021858
Lift: 2.1966711018502245

```



```

=====
Rule: spaghetti-pancakes
Support: 0.005066666666666666
Confidence: 0.4691358024691358
Lift: 2.694118314332709
=====
Rule: spaghetti-tomatoes
Support: 0.0044
Confidence: 0.611111111111112
Lift: 3.50944359367024
=====
Rule: spaghetti-shrimp
Support: 0.004
Confidence: 0.35714285714285715
Lift: 2.050973528768322
=====
Rule: mineral water-eggs
Support: 0.004
Confidence: 0.2
Lift: 3.79746835443038
=====
Rule: mineral water-eggs
Support: 0.0041333333333333335
Confidence: 0.3069306930693069
Lift: 2.368292384794035
=====
Rule: frozen vegetables-mineral water
Support: 0.004
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: spaghetti-frozen vegetables
Support: 0.0041333333333333335
Confidence: 0.4246575342465754
Lift: 2.438691812288909
=====
Rule: spaghetti-mineral water
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1009972733724274
=====
Rule: spaghetti-mineral water
Support: 0.0049333333333333333
Confidence: 0.35238095238095235
Lift: 2.0236272150514107
=====
Rule: spaghetti-mineral water
Support: 0.0044

```

```

Confidence: 0.49253731343283585
Lift: 2.067168355202165
=====
Rule: spaghetti-frozen vegetables
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 4.350042182227221
=====
Rule: spaghetti-frozen vegetables
Support: 0.004533333333333334
Confidence: 0.40963855421686746
Lift: 2.3524419269728223
=====
Rule: spaghetti-mineral water
Support: 0.0044
Confidence: 0.2
Lift: 3.348214285714286
=====
Rule: chocolate-0
Support: 0.005466666666666665
Confidence: 0.3203125
Lift: 2.474092430484037
=====
Rule: chocolate-spaghetti
Support: 0.0064
Confidence: 0.375
Lift: 2.1551724137931036
=====
Rule: eggs-french fries
Support: 0.009066666666666667
Confidence: 0.41212121212121217
Lift: 2.292959266253035
=====
Rule: eggs-0
Support: 0.006
Confidence: 0.23560209424083772
Lift: 2.7018588789086895
=====
Rule: eggs-ground beef
Support: 0.004
Confidence: 0.2
Lift: 2.293577981651376
=====
Rule: eggs-pancakes
Support: 0.0041333333333333335
Confidence: 0.3924050632911392
Lift: 2.1832625924952107
=====

```

```

Rule: french fries-0
Support: 0.0056
Confidence: 0.2359550561797753
Lift: 2.7059066075662304
=====
Rule: french fries-spaghetti
Support: 0.0056
Confidence: 0.2028985507246377
Lift: 2.3268182422550194
=====
Rule: mineral water-0
Support: 0.004933333333333333
Confidence: 0.20218579234972675
Lift: 2.123800339808054
=====
Rule: ground beef-0
Support: 0.004133333333333335
Confidence: 0.344444444444444444
Lift: 2.6604874699622383
=====
Rule: mineral water-ground beef
Support: 0.005333333333333333
Confidence: 0.21857923497267756
Lift: 2.2243477100340323
=====
Rule: ground beef-spaghetti
Support: 0.005466666666666665
Confidence: 0.455555555555555555
Lift: 2.6181353767560664
=====
Rule: mineral water-0
Support: 0.006933333333333333
Confidence: 0.28415300546448086
Lift: 2.19479664364944
=====
Rule: spaghetti-0
Support: 0.0064
Confidence: 0.35820895522388063
Lift: 2.0586721564590844
=====
Rule: spaghetti-pancakes
Support: 0.0044
Confidence: 0.4177215189873418
Lift: 2.400698384984723
=====
Rule: chocolate-spaghetti
Support: 0.005066666666666666
Confidence: 0.37254901960784315

```

```

Lift: 2.1410863195853054
=====
Rule: mineral water-cake
Support: 0.0064
Confidence: 0.48
Lift: 2.015677491601344
=====
Rule: spaghetti-cake
Support: 0.004133333333333335
Confidence: 0.34831460674157305
Lift: 2.0018080847216844
=====
Rule: chocolate-0
Support: 0.004
Confidence: 0.2727272727272726
Lift: 2.0682047982351324
=====
Rule: chocolate-0
Support: 0.004533333333333334
Confidence: 0.30909090909090914
Lift: 2.3874169085291643
=====
Rule: mineral water-chocolate
Support: 0.0076
Confidence: 0.5181818181818182
Lift: 2.1760154738878144
=====
Rule: eggs-0
Support: 0.004133333333333335
Confidence: 0.28703703703703703
Lift: 2.2170728916351985
=====
Rule: ground beef-spaghetti
Support: 0.0048
Confidence: 0.5070422535211268
Lift: 2.914035939776591
=====
Rule: mineral water-0
Support: 0.006666666666666667
Confidence: 0.29239766081871343
Lift: 2.2584783276419675
=====
Rule: spaghetti-0
Support: 0.005466666666666665
Confidence: 0.36936936936936937
Lift: 2.122812467640054
=====
Rule: mineral water-pancakes

```

Support: 0.0048
Confidence: 0.21052631578947364
Lift: 2.214512438178194
=====

Rule: french fries-cookies
Support: 0.004
Confidence: 0.38461538461538464
Lift: 2.251846514141596
=====

Rule: eggs-cooking oil
Support: 0.004533333333333334
Confidence: 0.3863636363636364
Lift: 2.3597127628072254
=====

Rule: cooking oil-chocolate
Support: 0.0044
Confidence: 0.3235294117647059
Lift: 2.4989398437026717
=====

Rule: eggs-chocolate
Support: 0.0092
Confidence: 0.27710843373493976
Lift: 2.1403844006303276
=====

Rule: eggs-olive oil
Support: 0.004
Confidence: 0.3333333333333333
Lift: 2.0358306188925077
=====

Rule: mineral water-escalope
Support: 0.0056
Confidence: 0.328125
Lift: 2.004020765472313
=====

Rule: frozen smoothie-chocolate
Support: 0.004
Confidence: 0.26785714285714285
Lift: 2.0689274680005885
=====

Rule: chocolate-ground beef
Support: 0.005733333333333333
Confidence: 0.25
Lift: 2.5440976933514245
=====

Rule: chocolate-0
Support: 0.007866666666666666
Confidence: 0.34302325581395343
Lift: 2.6495102148348617

```

=====
Rule: chocolate-0
Support: 0.005333333333333333
Confidence: 0.23255813953488372
Lift: 3.260160834601174
=====
Rule: herb & pepper-chocolate
Support: 0.004
Confidence: 0.4411764705882353
Lift: 4.489584164737808
=====
Rule: chocolate-ground beef
Support: 0.006133333333333335
Confidence: 0.26589595375722547
Lift: 2.0537792514718753
=====
Rule: mineral water-chocolate
Support: 0.010933333333333333
Confidence: 0.20759493670886076
Lift: 2.1125671985297907
=====
Rule: chocolate-ground beef
Support: 0.0092
Confidence: 0.3988439306358382
Lift: 2.292206497907116
=====
Rule: mineral water-chocolate
Support: 0.014
Confidence: 0.2658227848101266
Lift: 2.0532140948259006
=====
Rule: olive oil-chocolate
Support: 0.005066666666666666
Confidence: 0.30894308943089427
Lift: 2.3862751500841473
=====
Rule: chocolate-0
Support: 0.005466666666666665
Confidence: 0.3037037037037037
Lift: 2.3458061563107906
=====
Rule: chocolate-soup
Support: 0.004
Confidence: 0.39473684210526316
Lift: 3.0489457423166564
=====
Rule: chocolate-spaghetti
Support: 0.0108

```

```

Confidence: 0.2755102040816327
Lift: 2.128039681372034
=====
Rule: mineral water-olive oil
Support: 0.008266666666666667
Confidence: 0.5040650406504065
Lift: 2.116734493212793
=====
Rule: mineral water-chocolate
Support: 0.0056
Confidence: 0.5526315789473685
Lift: 2.320681322567337
=====
Rule: olive oil-chocolate
Support: 0.006933333333333333
Confidence: 0.4227642276422764
Lift: 2.429679469208485
=====
Rule: chocolate-spaghetti
Support: 0.0064
Confidence: 0.3555555555555556
Lift: 2.043422733077906
=====
Rule: chocolate-spaghetti
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0251778872468527
=====
Rule: french fries-cookies
Support: 0.004666666666666667
Confidence: 0.35000000000000003
Lift: 2.6541961577350865
=====
Rule: eggs-cooking oil
Support: 0.004
Confidence: 0.34090909090909094
Lift: 2.633180413818931
=====
Rule: mineral water-eggs
Support: 0.0064
Confidence: 0.5454545454545455
Lift: 2.2905426040924364
=====
Rule: eggs-cooking oil
Support: 0.0041333333333333335
Confidence: 0.3522727272727273
Lift: 2.024555903866249
=====

```

```

Rule: cooking oil-ground beef
Support: 0.0048
Confidence: 0.5714285714285714
Lift: 3.284072249589491
=====
Rule: mineral water-cooking oil
Support: 0.004666666666666667
Confidence: 0.2317880794701987
Lift: 2.4381635287889063
=====
Rule: mineral water-cooking oil
Support: 0.0076
Confidence: 0.37748344370860926
Lift: 2.169445078785111
=====
Rule: eggs-ground beef
Support: 0.0044
Confidence: 0.20245398773006135
Lift: 2.060250892775387
=====
Rule: eggs-0
Support: 0.007333333333333333
Confidence: 0.3374233128834356
Lift: 2.6062562787083077
=====
Rule: mineral water-eggs
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.0379092286410643
=====
Rule: eggs-grated cheese
Support: 0.004266666666666667
Confidence: 0.47058823529411764
Lift: 2.704530087897228
=====
Rule: eggs-ground beef
Support: 0.0041333333333333335
Confidence: 0.20666666666666667
Lift: 4.177897574123989
=====
Rule: eggs-ground beef
Support: 0.005866666666666667
Confidence: 0.29333333333333333
Lift: 2.265705458290422
=====
Rule: mineral water-eggs
Support: 0.010133333333333333
Confidence: 0.5066666666666666

```



```

Lift: 2.1276595744680846
=====
Rule: eggs-ground beef
Support: 0.008933333333333333
Confidence: 0.4466666666666666
Lift: 2.5670498084291187
=====
Rule: eggs-herb & pepper
Support: 0.0048
Confidence: 0.38297872340425526
Lift: 2.201027146001467
=====
Rule: eggs-0
Support: 0.004266666666666667
Confidence: 0.30188679245283023
Lift: 2.331772341293745
=====
Rule: mineral water-eggs
Support: 0.005866666666666667
Confidence: 0.4888888888888889
Lift: 2.053004852556924
=====
Rule: mineral water-eggs
Support: 0.004933333333333333
Confidence: 0.5441176470588235
Lift: 2.2849285290824053
=====
Rule: eggs-olive oil
Support: 0.005066666666666666
Confidence: 0.4222222222222217
Lift: 2.4265644955300125
=====
Rule: mineral water-escalope
Support: 0.004
Confidence: 0.5172413793103449
Lift: 2.172066262501448
=====
Rule: french fries-0
Support: 0.005733333333333333
Confidence: 0.30069930069930073
Lift: 2.3226001598813135
=====
Rule: french fries-ground beef
Support: 0.0056
Confidence: 0.40384615384615385
Lift: 2.320954907161804
=====
Rule: french fries-spaghetti

```

```

Support: 0.005733333333333333
Confidence: 0.20772946859903382
Lift: 2.1850925869463587
=====
Rule: mineral water-fresh bread
Support: 0.004
Confidence: 0.3
Lift: 2.317198764160659
=====
Rule: frozen smoothie-spaghetti
Support: 0.004
Confidence: 0.4
Lift: 2.298850574712644
=====
Rule: mineral water-frozen smoothie
Support: 0.006133333333333335
Confidence: 0.304635761589404
Lift: 2.35300536758036
=====
Rule: frozen smoothie-spaghetti
Support: 0.005466666666666665
Confidence: 0.38317757009345793
Lift: 2.2021699430658503
=====
Rule: ground beef-0
Support: 0.005733333333333333
Confidence: 0.3385826771653543
Lift: 2.6152112036458877
=====
Rule: mineral water-ground beef
Support: 0.0092
Confidence: 0.5433070866141732
Lift: 2.2815247198243553
=====
Rule: ground beef-spaghetti
Support: 0.008666666666666666
Confidence: 0.5118110236220472
Lift: 2.9414426644945246
=====
Rule: mineral water-0
Support: 0.011066666666666667
Confidence: 0.30970149253731344
Lift: 2.392133052553914
=====
Rule: olive oil-0
Support: 0.004666666666666667
Confidence: 0.4117647058823529
Lift: 3.180468891985218

```

```

=====
Rule: 0-frozen vegetables
Support: 0.004666666666666667
Confidence: 0.28
Lift: 2.1627188465499487
=====

Rule: soup-0
Support: 0.004
Confidence: 0.5
Lift: 3.861997940267765
=====

Rule: spaghetti-0
Support: 0.008133333333333333
Confidence: 0.29186602870813394
Lift: 2.254372003409891
=====

Rule: tomatoes-0
Support: 0.0041333333333333335
Confidence: 0.29523809523809524
Lift: 3.1012404961984794
=====

Rule: mineral water-olive oil
Support: 0.006533333333333334
Confidence: 0.5764705882352941
Lift: 2.420789144325143
=====

Rule: mineral water-0
Support: 0.0072
Confidence: 0.20149253731343283
Lift: 2.824661738038778
=====

Rule: mineral water-soup
Support: 0.005066666666666666
Confidence: 0.6333333333333333
Lift: 2.6595744680851063
=====

Rule: mineral water-spaghetti
Support: 0.012
Confidence: 0.20089285714285715
Lift: 2.110219087635054
=====

Rule: mineral water-tomatoes
Support: 0.005866666666666667
Confidence: 0.24043715846994534
Lift: 2.5256004040960645
=====

Rule: mineral water-turkey
Support: 0.0044

```

```

Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: mineral water-0
Support: 0.0044
Confidence: 0.4852941176470588
Lift: 2.0379092286410643
=====
Rule: olive oil-spaghetti
Support: 0.0056
Confidence: 0.4941176470588235
Lift: 2.839756592292089
=====
Rule: spaghetti-0
Support: 0.006
Confidence: 0.36
Lift: 2.0689655172413794
=====
Rule: tomatoes-0
Support: 0.004
Confidence: 0.24000000000000002
Lift: 3.5087719298245617
=====
Rule: spaghetti-tomatoes
Support: 0.006666666666666667
Confidence: 0.23923444976076555
Lift: 3.497579674864993
=====
Rule: mineral water-grated cheese
Support: 0.005066666666666666
Confidence: 0.2900763358778626
Lift: 2.9519301480108133
=====
Rule: grated cheese-ground beef
Support: 0.005333333333333333
Confidence: 0.4705882352941176
Lift: 2.704530087897228
=====
Rule: mineral water-grated cheese
Support: 0.006266666666666667
Confidence: 0.3587786259541985
Lift: 2.061946126173555
=====
Rule: ground beef-spaghetti
Support: 0.0064
Confidence: 0.43243243243243246
Lift: 2.4852438645542096
=====

```

```

Rule: olive oil-spaghetti
Support: 0.004533333333333334
Confidence: 0.45945945945945954
Lift: 2.640571606088848
=====
Rule: mineral water-ground beef
Support: 0.006666666666666667
Confidence: 0.390625
Lift: 3.975152645861601
=====
Rule: ground beef-herb & pepper
Support: 0.0064
Confidence: 0.4
Lift: 2.298850574712644
=====
Rule: mineral water-ground beef
Support: 0.0048
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: ground beef-spaghetti
Support: 0.004
Confidence: 0.4166666666666667
Lift: 2.3946360153256707
=====
Rule: mineral water-ground beef
Support: 0.011066666666666667
Confidence: 0.503030303030303
Lift: 2.1123892904408024
=====
Rule: olive oil-ground beef
Support: 0.004933333333333333
Confidence: 0.22424242424242424
Lift: 3.4183296378418326
=====
Rule: ground beef-soup
Support: 0.004
Confidence: 0.410958904109589
Lift: 3.1742448824118616
=====
Rule: ground beef-spaghetti
Support: 0.009733333333333333
Confidence: 0.44242424242424244
Lift: 2.5426680599094396
=====
Rule: mineral water-olive oil
Support: 0.006666666666666667
Confidence: 0.24271844660194175

```

```

Lift: 2.469997760535364
=====
Rule: mineral water-ground beef
Support: 0.007466666666666667
Confidence: 0.5137614678899083
Lift: 2.157452972661989
=====
Rule: mineral water-ground beef
Support: 0.005066666666666666
Confidence: 0.21590909090909088
Lift: 2.1971752806216847
=====
Rule: mineral water-ground beef
Support: 0.005066666666666666
Confidence: 0.5205479452054794
Lift: 2.185951617604197
=====
Rule: mineral water-ground beef
Support: 0.017066666666666667
Confidence: 0.4169381107491857
Lift: 2.396196038788424
=====
Rule: mineral water-ground beef
Support: 0.005466666666666665
Confidence: 0.2240437158469945
Lift: 2.279956402784883
=====
Rule: olive oil-ground beef
Support: 0.0061333333333333335
Confidence: 0.4339622641509434
Lift: 2.494036000867491
=====
Rule: ground beef-spaghetti
Support: 0.0064
Confidence: 0.44036697247706424
Lift: 2.5308446694084155
=====
Rule: ground beef-spaghetti
Support: 0.006
Confidence: 0.5232558139534884
Lift: 3.0072173215717726
=====
Rule: ground beef-spaghetti
Support: 0.0056
Confidence: 0.47727272727272724
Lift: 2.7429467084639496
=====
Rule: mineral water-herb & pepper

```

```

Support: 0.006
Confidence: 0.3515625
Lift: 2.0204741379310347
=====
Rule: spaghetti-low fat yogurt
Support: 0.0044
Confidence: 0.2894736842105263
Lift: 2.235893544365548
=====
Rule: mineral water-olive oil
Support: 0.008533333333333334
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: mineral water-0
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 2.0070225516352163
=====
Rule: mineral water-0
Support: 0.007866666666666666
Confidence: 0.3352272727272727
Lift: 2.589294073588615
=====
Rule: mineral water-soup
Support: 0.008533333333333334
Confidence: 0.5614035087719299
Lift: 2.35751753403666
=====
Rule: mineral water-spaghetti
Support: 0.015733333333333332
Confidence: 0.2633928571428571
Lift: 2.0344453435339114
=====
Rule: mineral water-tomatoes
Support: 0.006533333333333334
Confidence: 0.2677595628415301
Lift: 2.0681737603619728
=====
Rule: mineral water-turkey
Support: 0.006133333333333335
Confidence: 0.5411764705882353
Lift: 2.2725775640603385
=====
Rule: olive oil-spaghetti
Support: 0.007066666666666666
Confidence: 0.41406249999999994
Lift: 2.379669540229885

```

```

=====
Rule: spaghetti-soup
Support: 0.004533333333333334
Confidence: 0.31775700934579443
Lift: 2.454353831198206
=====
Rule: spaghetti-tomatoes
Support: 0.005866666666666667
Confidence: 0.41904761904761906
Lift: 2.40831964969896
=====
Rule: turkey-spaghetti
Support: 0.0048
Confidence: 0.4235294117647058
Lift: 2.434077079107505
=====
Rule: whole wheat pasta-spaghetti
Support: 0.004
Confidence: 0.40540540540540543
Lift: 2.3299161230195717
=====
Rule: mineral water-olive oil
Support: 0.0044
Confidence: 0.55
Lift: 2.3096304591265397
=====
Rule: mineral water-olive oil
Support: 0.0052
Confidence: 0.2254335260115607
Lift: 3.4364866770054983
=====
Rule: mineral water-olive oil
Support: 0.010266666666666667
Confidence: 0.3737864077669903
Lift: 2.1481977457873005
=====
Rule: mineral water-olive oil
Support: 0.004133333333333335
Confidence: 0.5740740740740741
Lift: 2.4107253950479035
=====
Rule: mineral water-soup
Support: 0.004266666666666667
Confidence: 0.627450980392157
Lift: 2.6348725380409728
=====
Rule: mineral water-pancakes
Support: 0.004133333333333335

```



```

Confidence: 0.20529801324503313
Lift: 2.1595162683558886
=====
Rule: mineral water-spaghetti
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1026072329688814
=====
Rule: mineral water-spaghetti
Support: 0.0068
Confidence: 0.40157480314960625
Lift: 2.307901167526473
=====
Rule: mineral water-spaghetti
Support: 0.008533333333333334
Confidence: 0.36363636363636365
Lift: 2.0898641588296765
=====
Rule: mineral water-spaghetti
Support: 0.007466666666666667
Confidence: 0.5233644859813084
Lift: 2.197779196450063
=====
Rule: mineral water-spaghetti
Support: 0.009333333333333334
Confidence: 0.3825136612021858
Lift: 2.1983543747252057
=====
Rule: olive oil-spaghetti
Support: 0.005066666666666666
Confidence: 0.4691358024691358
Lift: 2.696182772811125
=====
Rule: olive oil-spaghetti
Support: 0.0044
Confidence: 0.6111111111111112
Lift: 3.5121328224776507
=====
Rule: spaghetti-tomatoes
Support: 0.004
Confidence: 0.35714285714285715
Lift: 2.0525451559934322
=====
Rule: mineral water-eggs
Support: 0.004
Confidence: 0.2
Lift: 3.79746835443038
=====

```

```

Rule: mineral water-eggs
Support: 0.004133333333333335
Confidence: 0.3069306930693069
Lift: 2.370731408877242
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: mineral water-chocolate
Support: 0.004133333333333335
Confidence: 0.4246575342465754
Lift: 2.440560541646985
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1026072329688814
=====
Rule: mineral water-chocolate
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0251778872468527
=====
Rule: mineral water-eggs
Support: 0.0044
Confidence: 0.49253731343283585
Lift: 2.0683257842924236
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 4.350042182227221
=====
Rule: mineral water-spaghetti
Support: 0.004533333333333334
Confidence: 0.40963855421686746
Lift: 2.354244564464756
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.2
Lift: 3.348214285714286
=====
Rule: mineral water-eggs
Support: 0.004
Confidence: 0.2

```

```

Lift: 3.79746835443038
=====
Rule: mineral water-eggs
Support: 0.004133333333333335
Confidence: 0.3069306930693069
Lift: 2.368292384794035
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.5
Lift: 2.098489087856743
=====
Rule: mineral water-chocolate
Support: 0.004133333333333335
Confidence: 0.4246575342465754
Lift: 2.438691812288909
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1009972733724274
=====
Rule: mineral water-chocolate
Support: 0.004933333333333333
Confidence: 0.35238095238095235
Lift: 2.0236272150514107
=====
Rule: mineral water-eggs
Support: 0.0044
Confidence: 0.49253731343283585
Lift: 2.067168355202165
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 4.350042182227221
=====
Rule: mineral water-spaghetti
Support: 0.004533333333333334
Confidence: 0.40963855421686746
Lift: 2.3524419269728223
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.2
Lift: 3.348214285714286
=====
Rule: mineral water-eggs

```

```

Support: 0.004
Confidence: 0.2
Lift: 3.79746835443038
=====
Rule: mineral water-eggs
Support: 0.0041333333333333335
Confidence: 0.3069306930693069
Lift: 2.370731408877242
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.5
Lift: 2.0996640537514
=====
Rule: mineral water-chocolate
Support: 0.0041333333333333335
Confidence: 0.4246575342465754
Lift: 2.440560541646985
=====
Rule: mineral water-chocolate
Support: 0.004
Confidence: 0.36585365853658536
Lift: 2.1026072329688814
=====
Rule: mineral water-chocolate
Support: 0.0049333333333333333
Confidence: 0.35238095238095235
Lift: 2.0251778872468527
=====
Rule: mineral water-eggs
Support: 0.0044
Confidence: 0.49253731343283585
Lift: 2.0683257842924236
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.25984251968503935
Lift: 4.350042182227221
=====
Rule: mineral water-spaghetti
Support: 0.0045333333333333334
Confidence: 0.40963855421686746
Lift: 2.354244564464756
=====
Rule: mineral water-ground beef
Support: 0.0044
Confidence: 0.2
Lift: 3.348214285714286

```

=====