

```
In [2]: import pandas as pd
!pip install apyori
from apyori import apriori
```

Requirement already satisfied: apyori in /usr/local/lib/python3.10/dist-packages (1.1.2)

```
In [3]: A = pd.read_csv("/content/Market_Basket_Optimisation.csv",header= None)
```

```
In [4]: A.fillna(0,inplace=True)
A.head()
```

```
Out[4]:
```

	0	1	2	3	4	5	6	7	8
0	shrimp	almonds	avocado	vegetables mix	green grapes	whole weat flour	yams	cottage cheese	energy drink
1	burgers	meatballs	eggs	0	0	0	0	0	0
2	chutney	0	0	0	0	0	0	0	0
3	turkey	avocado	0	0	0	0	0	0	0
4	mineral water	milk	energy bar	whole wheat rice	green tea	0	0	0	0

```
In [ ]:
```

```
In [5]: transactions =[]
for i in range(0,7501):
    transactions.append([str(A.values[i,j]) for j in range (0,20)])
transactions[0]
```

```
Out[5]: ['shrimp',
'almonds',
'avocado',
'vegetables mix',
'green grapes',
'whole weat flour',
'yams',
'cottage cheese',
'energy drink',
'tomato juice',
'low fat yogurt',
'green tea',
'honey',
'salad',
'mineral water',
'salmon',
'antioxydant juice',
'frozen smoothie',
'spinach',
'olive oil']
```

```
In [6]: rule_list=apriori(transactions,min_support=0.003,min_lift=3,min_length=2)
rule_list
```

```
Out[6]: <generator object apriori at 0x79feb16e8e40>
```

```
In [7]: Results = list(rule_list)
for i in Results:
    print(i)
```

RelationRecord(items=frozenset({'brownies', 'cottage cheese'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'brownies'}), items_add=frozenset({'cottage cheese'}), confidence=0.10276679841897232, lift=3.225329518580382), OrderedStatistic(items_base=frozenset({'cottage cheese'}), items_add=frozenset({'brownies'}), confidence=0.10878661087866107, lift=3.2253295185803816)])

RelationRecord(items=frozenset({'chicken', 'light cream'}), support=0.004532728969470737, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chicken'}), items_add=frozenset({'light cream'}), confidence=0.07555555555555555, lift=4.843950617283951), OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'chicken'}), confidence=0.29059829059829057, lift=4.84395061728395)])

RelationRecord(items=frozenset({'escalope', 'mushroom cream sauce'}), support=0.005732568990801226, ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope'}), items_add=frozenset({'mushroom cream sauce'}), confidence=0.0722689075630252, lift=3.7908326967150496), OrderedStatistic(items_base=frozenset({'mushroom cream sauce'}), items_add=frozenset({'escalope'}), confidence=0.3006993006993007, lift=3.790832696715049)])

RelationRecord(items=frozenset({'escalope', 'pasta'}), support=0.005865884548726837, ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope'}), items_add=frozenset({'pasta'}), confidence=0.07394957983193277, lift=4.700811850163794), OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'escalope'}), confidence=0.3728813559322034, lift=4.700811850163794)])

RelationRecord(items=frozenset({'tomato juice', 'fresh bread'}), support=0.004266097853619517, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh bread'}), items_add=frozenset({'tomato juice'}), confidence=0.09907120743034055, lift=3.2593558198902826), OrderedStatistic(items_base=frozenset({'tomato juice'}), items_add=frozenset({'fresh bread'}), confidence=0.14035087719298245, lift=3.2593558198902826)])

RelationRecord(items=frozenset({'honey', 'fresh tuna'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}), items_add=frozenset({'honey'}), confidence=0.17964071856287428, lift=3.7850703088205613), OrderedStatistic(items_base=frozenset({'honey'}), items_add=frozenset({'fresh tuna'}), confidence=0.08426966292134831, lift=3.7850703088205613)])

RelationRecord(items=frozenset({'honey', 'fromage blanc'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fromage blanc'}), items_add=frozenset({'honey'}), confidence=0.2450980392156863, lift=5.164270764485569), OrderedStatistic(items_base=frozenset({'honey'}), items_add=frozenset({'fromage blanc'}), confidence=0.0702247191011236, lift=5.16427076448557)])

RelationRecord(items=frozenset({'ground beef', 'herb & pepper'}), support=0.0015997866951073192, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper'}), confidence=0.1628222523744912, lift=3.291993841134928), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.3234501347708895, lift=3.2919938411349285)])

RelationRecord(items=frozenset({'ground beef', 'tomato sauce'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomato sauce'}), confidence=0.054274084124830396, lift=3.840659481324083), OrderedStatistic(items_base=frozenset({'tomato sauce'}), items_add=frozenset({'ground beef'}), confidence=0.3773584905660377, lift=3.840659481324083)])

RelationRecord(items=frozenset({'olive oil', 'light cream'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset

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({'light cream'}), items_add=frozenset({'olive oil'}), confidence=0.20512820512820515, lift=3.1147098515519573), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'light cream'}), confidence=0.048582995951417005, lift=3.114709851551957)))  
RelationRecord(items=frozenset({'olive oil', 'whole wheat pasta'}), support=0.007998933475536596, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'whole wheat pasta'}), confidence=0.12145748987854252, lift=4.1224100976422955), OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'olive oil'}), confidence=0.2714932126696833, lift=4.122410097642296)])  
RelationRecord(items=frozenset({'shrimp', 'pasta'}), support=0.005065991201173177, ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'shrimp'}), confidence=0.3220338983050847, lift=4.506672147735896), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'pasta'}), confidence=0.0708955223880597, lift=4.506672147735896)])  
RelationRecord(items=frozenset({'brownies', '0', 'cottage cheese'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'brownies'}), items_add=frozenset({'0', 'cottage cheese'}), confidence=0.10276679841897232, lift=3.2388813232802995), OrderedStatistic(items_base=frozenset({'cottage cheese'}), items_add=frozenset({'brownies', '0'}), confidence=0.10878661087866107, lift=3.2253295185803816), OrderedStatistic(items_base=frozenset({'brownies', '0'}), items_add=frozenset({'cottage cheese'}), confidence=0.10276679841897232, lift=3.225329518580382), OrderedStatistic(items_base=frozenset({'0', 'cottage cheese'}), items_add=frozenset({'brownies'}), confidence=0.10924369747899158, lift=3.2388813232802995)])  
RelationRecord(items=frozenset({'chicken', 'light cream', '0'}), support=0.004532728969470737, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chicken'}), items_add=frozenset({'light cream', '0'}), confidence=0.07555555555555556, lift=4.843950617283951), OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'chicken', '0'}), confidence=0.29059829059829057, lift=4.84395061728395), OrderedStatistic(items_base=frozenset({'chicken', '0'}), items_add=frozenset({'light cream'}), confidence=0.07555555555555556, lift=4.843950617283951), OrderedStatistic(items_base=frozenset({'light cream', '0'}), items_add=frozenset({'chicken'}), confidence=0.29059829059829057, lift=4.84395061728395)])  
RelationRecord(items=frozenset({'mushroom cream sauce', 'escalope', '0'}), support=0.005732568990801226, ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope'}), items_add=frozenset({'0', 'mushroom cream sauce'}), confidence=0.0722689075630252, lift=3.7908326967150496), OrderedStatistic(items_base=frozenset({'mushroom cream sauce'}), items_add=frozenset({'escalope', '0'}), confidence=0.3006993006993007, lift=3.790832696715049), OrderedStatistic(items_base=frozenset({'escalope', '0'}), items_add=frozenset({'mushroom cream sauce'}), confidence=0.0722689075630252, lift=3.7908326967150496), OrderedStatistic(items_base=frozenset({'mushroom cream sauce', '0'}), items_add=frozenset({'escalope'}), confidence=0.3006993006993007, lift=3.790832696715049)])  
RelationRecord(items=frozenset({'escalope', '0', 'pasta'}), support=0.005865884548726837, ordered_statistics=[OrderedStatistic(items_base=frozenset({'escalope'}), items_add=frozenset({'0', 'pasta'}), confidence=0.07394957983193277, lift=4.700811850163794), OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'escalope', '0'}), confidence=0.3728813559322034, lift=4.700811850163794), OrderedStatistic(items_base=frozenset({'escalope', '0'}), items_add=frozenset({'pasta'}), confidence=0.07394957983193277, lift=4.700811850163794), OrderedStatistic(items_base=frozenset({'0', 'pasta'}), items_add=frozenset({'escalope'}), confidence=0.3728813559322034, lift=4.700811850163794)])
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RelationRecord(items=frozenset({'tomato juice', '0', 'fresh bread'}), support=0.004266097853619517, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh bread'}), items_add=frozenset({'tomato juice', '0'}), confidence=0.09907120743034055, lift=3.273714215572619), OrderedStatistic(items_base=frozenset({'tomato juice'}), items_add=frozenset({'0', 'fresh bread'}), confidence=0.14035087719298245, lift=3.2593558198902826), OrderedStatistic(items_base=frozenset({'0', 'fresh bread'}), items_add=frozenset({'tomato juice'}), confidence=0.09907120743034055, lift=3.2593558198902826), OrderedStatistic(items_base=frozenset({'tomato juice', '0'}), items_add=frozenset({'fresh bread'}), confidence=0.1409691629955947, lift=3.2737142155726184)])

RelationRecord(items=frozenset({'honey', 'fresh tuna', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fresh tuna'}), items_add=frozenset({'honey', '0'}), confidence=0.17964071856287428, lift=3.795732478704563), OrderedStatistic(items_base=frozenset({'honey'}), items_add=frozenset({'fresh tuna', '0'}), confidence=0.08426966292134831, lift=3.7850703088205613), OrderedStatistic(items_base=frozenset({'fresh tuna', '0'}), items_add=frozenset({'honey'}), confidence=0.17964071856287428, lift=3.7850703088205613), OrderedStatistic(items_base=frozenset({'honey', '0'}), items_add=frozenset({'fresh tuna'}), confidence=0.08450704225352113, lift=3.7957324787045628)])

RelationRecord(items=frozenset({'honey', 'fromage blanc', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'fromage blanc'}), items_add=frozenset({'honey', '0'}), confidence=0.2450980392156863, lift=5.1788180060756694), OrderedStatistic(items_base=frozenset({'honey'}), items_add=frozenset({'0', 'fromage blanc'}), confidence=0.0702247191011236, lift=5.16427076448557), OrderedStatistic(items_base=frozenset({'fromage blanc', '0'}), items_add=frozenset({'honey'}), confidence=0.2450980392156863, lift=5.164270764485569), OrderedStatistic(items_base=frozenset({'honey', '0'}), items_add=frozenset({'fromage blanc'}), confidence=0.07042253521126761, lift=5.17881800607567)])

RelationRecord(items=frozenset({'ground beef', 'herb & pepper', '0'}), support=0.015997866951073192, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.1628222523744912, lift=3.291993841134928), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3234501347708895, lift=3.2919938411349285), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'herb & pepper'}), confidence=0.1628222523744912, lift=3.291993841134928), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef'}), confidence=0.3234501347708895, lift=3.2919938411349285)])

RelationRecord(items=frozenset({'ground beef', '0', 'tomato sauce'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomato sauce', '0'}), confidence=0.054274084124830396, lift=3.840659481324083), OrderedStatistic(items_base=frozenset({'tomato sauce'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3773584905660377, lift=3.840659481324083), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'tomato sauce'}), confidence=0.054274084124830396, lift=3.840659481324083), OrderedStatistic(items_base=frozenset({'tomato sauce', '0'}), items_add=frozenset({'ground beef'}), confidence=0.3773584905660377, lift=3.840659481324083)])

RelationRecord(items=frozenset({'olive oil', 'light cream', '0'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20512820512820515, lift=3.121027721433401), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'light cream', '0'}), confidence=0.048582995951417005, lift=3.114709851551957), OrderedStatistic(items_base=f

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rozenset({'light cream', '0'}), items_add=frozenset({'olive oil'}), confidence=0.20512820512820515, lift=3.1147098515519573), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'light cream'}), confidence=0.0486815415821501, lift=3.121027721433401)])
RelationRecord(items=frozenset({'olive oil', 'whole wheat pasta', '0'}), support=0.007998933475536596, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'whole wheat pasta', '0'}), confidence=0.12145748987854252, lift=4.1224100976422955), OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'olive oil', '0'}), confidence=0.2714932126696833, lift=4.13077198425009), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'whole wheat pasta'}), confidence=0.12170385395537525, lift=4.13077198425009), OrderedStatistic(items_base=frozenset({'whole wheat pasta', '0'}), items_add=frozenset({'olive oil'}), confidence=0.2714932126696833, lift=4.122410097642296)])
RelationRecord(items=frozenset({'shrimp', '0', 'pasta'}), support=0.005065991201173177, ordered_statistics=[OrderedStatistic(items_base=frozenset({'pasta'}), items_add=frozenset({'shrimp', '0'}), confidence=0.3220338983050847, lift=4.515095833993347), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'0', 'pasta'}), confidence=0.0708955223880597, lift=4.506672147735896), OrderedStatistic(items_base=frozenset({'0', 'pasta'}), items_add=frozenset({'shrimp'}), confidence=0.3220338983050847, lift=4.506672147735896), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'pasta'}), confidence=0.07102803738317758, lift=4.515095833993347)])
RelationRecord(items=frozenset({'avocado', 'milk', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'avocado', 'spaghetti'}), confidence=0.025720164609053502, lift=3.2154492455418384), OrderedStatistic(items_base=frozenset({'avocado', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.41666666666666663, lift=3.215449245541838)])
RelationRecord(items=frozenset({'milk', 'burgers', 'cake'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers'}), items_add=frozenset({'milk', 'cake'}), confidence=0.04281345565749235, lift=3.211437308868501), OrderedStatistic(items_base=frozenset({'milk', 'cake'}), items_add=frozenset({'burgers'}), confidence=0.27999999999999997, lift=3.211437308868501)])
RelationRecord(items=frozenset({'turkey', 'chocolate', 'burgers'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers'}), items_add=frozenset({'chocolate', 'turkey'}), confidence=0.035168195718654434, lift=3.1034898363014927), OrderedStatistic(items_base=frozenset({'chocolate', 'turkey'}), items_add=frozenset({'burgers'}), confidence=0.27058823529411763, lift=3.1034898363014927)])
RelationRecord(items=frozenset({'turkey', 'milk', 'burgers'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers'}), items_add=frozenset({'turkey', 'milk'}), confidence=0.03669724770642202, lift=3.2384241770102538), OrderedStatistic(items_base=frozenset({'milk', 'turkey'}), items_add=frozenset({'burgers'}), confidence=0.2823529411764706, lift=3.2384241770102533)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'cake'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'cake'}), confidence=0.03216783216783217, lift=3.83001443001443), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'cake'}), confidence=0.04483430799220273, lift=4.367560314928736), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'cake'}), items_add=frozenset({'tomatoes'}), confidence=0.2987012987012987, lift=4.3675603149287

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36), OrderedStatistic(items_base=frozenset({'tomatoes', 'cake'}), items_add=
frozenset({'frozen vegetables'}), confidence=0.36507936507936506, lift=3.830
0144300144296)])
RelationRecord(items=frozenset({'ground beef', 'cereals', 'spaghetti'}), sup
port=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=
frozenset({'cereals'}), items_add=frozenset({'ground beef', 'spaghetti'}), c
onfidence=0.11917098445595856, lift=3.040481477565119), OrderedStatistic(ite
ms_base=frozenset({'ground beef'}), items_add=frozenset({'cereals', 'spaghet
ti'}), confidence=0.03120759837177748, lift=4.681763907734057), OrderedStati
stic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground bee
f', 'cereals'}), confidence=0.01761102603369066, lift=3.885303125844519), Or
deredStatistic(items_base=frozenset({'ground beef', 'cereals'}), items_add=f
rozenset({'spaghetti'}), confidence=0.6764705882352942, lift=3.8853031258445
188), OrderedStatistic(items_base=frozenset({'cereals', 'spaghetti'}), items
_add=frozenset({'ground beef'}), confidence=0.45999999999999996, lift=4.6817
63907734057), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghet
ti'}), items_add=frozenset({'cereals'}), confidence=0.0782312925170068, lift
=3.0404814775651197)])
RelationRecord(items=frozenset({'ground beef', 'chicken', 'milk'}), support=
0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=froze
nset({'milk'}), items_add=frozenset({'ground beef', 'chicken'}), confidence=
0.02983539094650206, lift=3.1520460209818584), OrderedStatistic(items_base=f
rozenset({'ground beef', 'chicken'}), items_add=frozenset({'milk'}), confide
nce=0.40845070422535207, lift=3.152046020981858)])
RelationRecord(items=frozenset({'olive oil', 'chicken', 'milk'}), support=0.
0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozens
et({'chicken'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.0
6, lift=3.51609375), OrderedStatistic(items_base=frozenset({'milk'}), items_
add=frozenset({'olive oil', 'chicken'}), confidence=0.02777777777777778, lif
t=3.8585390946502063), OrderedStatistic(items_base=frozenset({'olive oil'}),
items_add=frozenset({'chicken', 'milk'}), confidence=0.054655870445344125, l
ift=3.6934566145092456), OrderedStatistic(items_base=frozenset({'chicken',
'milk'}), items_add=frozenset({'olive oil'}), confidence=0.2432432432432432
3, lift=3.693456614509246), OrderedStatistic(items_base=frozenset({'olive oi
l', 'chicken'}), items_add=frozenset({'milk'}), confidence=0.5, lift=3.85853
9094650206), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), i
tems_add=frozenset({'chicken'}), confidence=0.2109375, lift=3.51609375)])
RelationRecord(items=frozenset({'chicken', 'milk', 'pancakes'}), support=0.0
030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozens
et({'chicken'}), items_add=frozenset({'milk', 'pancakes'}), confidence=0.0511
11111111111114, lift=3.091810035842294), OrderedStatistic(items_base=frozens
et({'milk', 'pancakes'}), items_add=frozenset({'chicken'}), confidence=0.185
48387096774194, lift=3.091810035842294)])
RelationRecord(items=frozenset({'olive oil', 'chicken', 'spaghetti'}), suppo
rt=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=fr
ozenset({'olive oil'}), items_add=frozenset({'chicken', 'spaghetti'}), confi
dence=0.05263157894736842, lift=3.0603835169318647), OrderedStatistic(items_
base=frozenset({'chicken', 'spaghetti'}), items_add=frozenset({'olive oi
l'}), confidence=0.20155038759689922, lift=3.0603835169318647)])
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'shrim
p'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(ite
ms_base=frozenset({'frozen vegetables'}), items_add=frozenset({'chocolate',
'shrimp'}), confidence=0.055944055944055944, lift=3.1084175084175087), Order
edStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen v
egetables', 'chocolate'}), confidence=0.07462686567164178, lift=3.2545123221
103784), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocol

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ate'}), items_add=frozenset({'shrimp'}), confidence=0.23255813953488375, lift=3.2545123221103784), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp'}), items_add=frozenset({'frozen vegetables'}), confidence=0.29629629629629634, lift=3.1084175084175087)])

RelationRecord(items=frozenset({'ground beef', 'chocolate', 'herb & pepper'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'chocolate', 'herb & pepper'}), confidence=0.0407055630936228, lift=4.490182775959774), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.08086253369272238, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'herb & pepper'}), confidence=0.17341040462427748, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'chocolate', 'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.4411764705882354, lift=4.4901827759597746)])

RelationRecord(items=frozenset({'chocolate', 'soup', 'milk'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'chocolate', 'soup'}), confidence=0.030864197530864203, lift=3.0462150747238472), OrderedStatistic(items_base=frozenset({'chocolate', 'soup'}), items_add=frozenset({'milk'}), confidence=0.3947368421052632, lift=3.0462150747238472)])

RelationRecord(items=frozenset({'cooking oil', 'ground beef', 'spaghetti'}), support=0.004799360085321957, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'cooking oil', 'spaghetti'}), confidence=0.048846675712347354, lift=3.078982474943844), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'cooking oil', 'ground beef'}), confidence=0.027565084226646247, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'cooking oil', 'ground beef'}), items_add=frozenset({'spaghetti'}), confidence=0.5714285714285714, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'cooking oil', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3025210084033613, lift=3.0789824749438446)])

RelationRecord(items=frozenset({'ground beef', 'herb & pepper', 'eggs'}), support=0.0041327822956939075, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', 'eggs'}), confidence=0.04206241519674356, lift=3.3564912381997174), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.08355795148247978, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'herb & pepper'}), confidence=0.20666666666666667, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'herb & pepper', 'eggs'}), items_add=frozenset({'ground beef'}), confidence=0.3297872340425532, lift=3.3564912381997174)])

RelationRecord(items=frozenset({'red wine', 'spaghetti', 'eggs'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}), items_add=frozenset({'eggs', 'spaghetti'}), confidence=0.13270142180094788, lift=3.6328224997405476), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'red wine', 'eggs'}), confidence=0.021439509954058193, lift=3.0342974370828397), OrderedStatistic(items_base=frozenset({'red wine', 'eggs'}), items_add=frozenset({'spaghetti'}), confidence=0.5283018867924528, lift=3.0342974370828397), OrderedStatistic(items_base=frozenset({'spaghetti', 'eggs'}), items_add=frozenset({'red wine'}), confidence=0.10218978102189781, lift=3.632822499740547)])

RelationRecord(items=frozenset({'ground beef', 'french fries', 'herb & pepper'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'french fries', 'herb & pepper'}), confidence=0.0407055630936228, lift=4.490182775959774), OrderedStatistic(items_base=frozenset({'french fries', 'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.08086253369272238, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'ground beef', 'french fries'}), items_add=frozenset({'herb & pepper'}), confidence=0.17341040462427748, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'french fries', 'ground beef'}), items_add=frozenset({'herb & pepper'}), confidence=0.4411764705882354, lift=4.4901827759597746)])


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rb & pepper'}), confidence=0.03256445047489824, lift=4.697421981004071), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'french fries'}), confidence=0.0646900269541779, lift=4.665768194070082), OrderedStatistic(items_base=frozenset({'ground beef', 'french fries'}), items_add=frozenset({'herb & pepper'}), confidence=0.23076923076923078, lift=4.665768194070081), OrderedStatistic(items_base=frozenset({'french fries', 'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.46153846153846156, lift=4.697421981004071)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'green tea'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'green tea'}), confidence=0.04873294346978558, lift=3.38468341635983), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'green tea'}), items_add=frozenset({'tomatoes'}), confidence=0.2314814814814815, lift=3.38468341635983)])
RelationRecord(items=frozenset({'frozen vegetables', 'ground beef', 'spaghetti'}), support=0.008665511265164644, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.08819538670284939, lift=3.165328208890303), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.31100478468899523, lift=3.165328208890303)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'olive oil'}), support=0.004799360085321957, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'olive oil'}), confidence=0.037037037037037035, lift=3.2684095860566447), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.0728744939271255, lift=3.0883140053523634), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'olive oil'}), confidence=0.20338983050847456, lift=3.088314005352364), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}), items_add=frozenset({'milk'}), confidence=0.4235294117647058, lift=3.2684095860566447)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'soup'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'soup'}), confidence=0.030864197530864203, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.079155672823219, lift=3.3545011403783374), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'soup'}), confidence=0.16949152542372883, lift=3.354501140378338), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup'}), items_add=frozenset({'milk'}), confidence=0.5, lift=3.858539094650206)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'milk'}), support=0.0041327822956939075, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'milk'}), confidence=0.043356643356643354, lift=3.0973160173160172), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk'}), items_add=frozenset({'frozen vegetables'}), confidence=0.29523809523809524, lift=3.0973160173160172)])
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'mineral water'}), support=0.007199040127982935, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.07552447552447553, lift=3.2006163328197226), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables'}), confidence=0.30508474576271183, lift=3.200616332819722)])

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RelationRecord(items=frozenset({'frozen vegetables', 'olive oil', 'spaghetti'}), support=0.005732568990801226, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.08704453441295547, lift=3.124024175270713), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20574162679425836, lift=3.1240241752707125)])

RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'spaghetti'}), support=0.005999200106652446, ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.08395522388059701, lift=3.013148968078269), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.21531100478468898, lift=3.0131489680782684)])

RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'shrimp'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'shrimp'}), confidence=0.04195804195804196, lift=3.7467532467532467), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', 'tomatoes'}), confidence=0.055970149253731345, lift=3.469686690514371), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'shrimp'}), confidence=0.058479532163742694, lift=3.5092397660818713), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shrimp'}), items_add=frozenset({'tomatoes'}), confidence=0.24000000000000002, lift=3.5092397660818717), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}), items_add=frozenset({'shrimp'}), confidence=0.2479338842975207, lift=3.4696866905143704), OrderedStatistic(items_base=frozenset({'tomatoes', 'shrimp'}), items_add=frozenset({'frozen vegetables'}), confidence=0.35714285714285715, lift=3.7467532467532467)])

RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'spaghetti'}), support=0.006665777896280496, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.06993006993006994, lift=3.341053850607991), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.09746588693957116, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'tomatoes'}), confidence=0.23923444976076558, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3184713375796179, lift=3.341053850607991)])

RelationRecord(items=frozenset({'ground beef', 'grated cheese', 'spaghetti'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'grated cheese', 'spaghetti'}), confidence=0.054274084124830396, lift=3.283144395325426), OrderedStatistic(items_base=frozenset({'grated cheese', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3225806451612903, lift=3.283144395325426)])

RelationRecord(items=frozenset({'herb & pepper', 'grated cheese', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}), items_add=frozenset({'herb & pepper', 'spaghetti'}), confidence=0.058524173027989825, lift=3.5982772285487843), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'grated cheese', 'spaghetti'}), confidence=0.06199460916442048, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'grated cheese', 'spaghetti'}), items_add=frozenset({'herb & pepper'}), confidence=0.18548387096774194, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'her

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b & pepper', 'spaghetti'}), items_add=frozenset({'grated cheese'}), confidence=0.18852459016393444, lift=3.5982772285487843)])
RelationRecord(items=frozenset({'ground beef', 'tomatoes', 'green tea'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'ground beef', 'green tea'}), confidence=0.04483430799220273, lift=3.0297490472929067), OrderedStatistic(items_base=frozenset({'ground beef', 'green tea'}), items_add=frozenset({'tomatoes'}), confidence=0.2072072072072072, lift=3.0297490472929067)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'herb & pepper'}), support=0.0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'milk', 'herb & pepper'}), confidence=0.036635006784260515, lift=3.982596896938234), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07277628032345013, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'herb & pepper'}), confidence=0.16363636363636364, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'milk', 'herb & pepper'}), items_add=frozenset({'ground beef'}), confidence=0.3913043478260869, lift=3.9825968969382335)])
RelationRecord(items=frozenset({'ground beef', 'herb & pepper', 'mineral water'}), support=0.006665777896280496, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', 'mineral water'}), confidence=0.067842605156038, lift=3.9756826662143836), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.1347708894878706, lift=3.292887433382793), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'herb & pepper'}), confidence=0.16286644951140067, lift=3.2928874333827935), OrderedStatistic(items_base=frozenset({'herb & pepper', 'mineral water'}), items_add=frozenset({'ground beef'}), confidence=0.39062500000000006, lift=3.975682666214383)])
RelationRecord(items=frozenset({'ground beef', 'herb & pepper', 'spaghetti'}), support=0.006399146780429276, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', 'spaghetti'}), confidence=0.06512890094979648, lift=4.004359721511667), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.1293800539083558, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'herb & pepper'}), confidence=0.163265306122449, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'herb & pepper', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3934426229508197, lift=4.004359721511667)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'olive oil'}), support=0.004932675643247567, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07489878542510121, lift=3.4049441786283894), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'olive oil'}), confidence=0.22424242424242427, lift=3.40494417862839)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'soup'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'ground beef', 'soup'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.079155672823219, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'soup'}), confidence=0.18181818181818185, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'ground beef', 'soup'}), items_add=frozenset({'milk'}), confidence=0.410

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9589041095891, lift=3.1714019956029094))
RelationRecord(items=frozenset({'ground beef', 'pepper', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'pepper', 'spaghetti'}), confidence=0.033921302578019, lift=3.438428251861088), OrderedStatistic(items_base=frozenset({'pepper'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12562814070351758, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'pepper'}), confidence=0.08503401360544217, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'pepper', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.33783783783783783, lift=3.4384282518610876)])
RelationRecord(items=frozenset({'ground beef', 'shrimp', 'spaghetti'}), support=0.005999200106652446, ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'shrimp'}), confidence=0.03445635528330781, lift=3.0053153602336264), OrderedStatistic(items_base=frozenset({'ground beef', 'shrimp'}), items_add=frozenset({'spaghetti'}), confidence=0.5232558139534884, lift=3.005315360233627)])
RelationRecord(items=frozenset({'ground beef', 'tomato sauce', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomato sauce', 'spaghetti'}), confidence=0.03120759837177748, lift=4.980599901844742), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'tomato sauce'}), confidence=0.01761102603369066, lift=3.302507656967841), OrderedStatistic(items_base=frozenset({'tomato sauce'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.2169811320754717, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'tomato sauce'}), confidence=0.0782312925170068, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', 'tomato sauce'}), items_add=frozenset({'spaghetti'}), confidence=0.5750000000000001, lift=3.3025076569678413), OrderedStatistic(items_base=frozenset({'tomato sauce', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.4893617021276596, lift=4.980599901844742)])
RelationRecord(items=frozenset({'light cream', 'mineral water', 'spaghetti'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.20512820512820515, lift=3.4345238095238098), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'light cream'}), confidence=0.053571428571428575, lift=3.4345238095238098)])
RelationRecord(items=frozenset({'milk', 'soup', 'mineral water'}), support=0.008532195707239034, ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.16886543535620052, lift=3.518498973907945), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'soup'}), confidence=0.17777777777777776, lift=3.5184989739079446)])
RelationRecord(items=frozenset({'olive oil', 'milk', 'shrimp'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'shrimp'}), confidence=0.02469135802469136, lift=3.0362274843149164), OrderedStatistic(items_base=frozenset({'olive oil', 'shrimp'}), items_add=frozenset({'milk'}), confidence=0.3934426229508197, lift=3.0362274843149164)])
RelationRecord(items=frozenset({'olive oil', 'milk', 'soup'}), support=0.0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'soup'}), confidence=0.027777777777777778, lift=3.1098673300165838), OrderedStatistic(items_base=frozenset
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({'olive oil'}), items_add=frozenset({'milk', 'soup'}), confidence=0.0546558
70445344125, lift=3.596260387811634), OrderedStatistic(items_base=frozenset
({'soup'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.0712401
0554089709, lift=4.174781497361478), OrderedStatistic(items_base=frozenset
({'olive oil', 'milk'}), items_add=frozenset({'soup'}), confidence=0.210937
5, lift=4.174781497361478), OrderedStatistic(items_base=frozenset({'milk',
'soup'}), items_add=frozenset({'olive oil'}), confidence=0.2368421052631578
8, lift=3.5962603878116344), OrderedStatistic(items_base=frozenset({'olive o
il', 'soup'}), items_add=frozenset({'milk'}), confidence=0.4029850746268656,
lift=3.1098673300165833)])
RelationRecord(items=frozenset({'olive oil', 'milk', 'spaghetti'}), support=
0.007199040127982935, ordered_statistics=[OrderedStatistic(items_base=frozen
set({'olive oil'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=
0.10931174089068825, lift=3.0825089038385434), OrderedStatistic(items_base=f
rozenset({'milk', 'spaghetti'}), items_add=frozenset({'olive oil'}), confide
nce=0.20300751879699247, lift=3.0825089038385434)])
RelationRecord(items=frozenset({'tomatoes', 'milk', 'soup'}), support=0.0030
662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset
({'milk'}), items_add=frozenset({'tomatoes', 'soup'}), confidence=0.02366255
144032922, lift=3.4133230452674903), OrderedStatistic(items_base=frozenset
({'soup'}), items_add=frozenset({'tomatoes', 'milk'}), confidence=0.06068601
583113457, lift=4.335293378565146), OrderedStatistic(items_base=frozenset
({'tomatoes', 'milk'}), items_add=frozenset({'soup'}), confidence=0.21904761
904761905, lift=4.335293378565146), OrderedStatistic(items_base=frozenset
({'tomatoes', 'soup'}), items_add=frozenset({'milk'}), confidence=0.44230769
230769235, lift=3.4133230452674903)])
RelationRecord(items=frozenset({'milk', 'whole wheat pasta', 'spaghetti'}),
support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_bas
e=frozenset({'milk'}), items_add=frozenset({'whole wheat pasta', 'spaghettt
i'}), confidence=0.030864197530864203, lift=3.5077628133183696), OrderedStat
istic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'mil
k', 'spaghetti'}), confidence=0.13574660633484165, lift=3.8279522335249894),
OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=froz
enset({'whole wheat pasta'}), confidence=0.11278195488721805, lift=3.8279522
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hetti'}), items_add=frozenset({'milk'}), confidence=0.4545454545454546, lift
=3.5077628133183696)])
RelationRecord(items=frozenset({'olive oil', 'soup', 'mineral water'}), supp
ort=0.005199306759098787, ordered_statistics=[OrderedStatistic(items_base=fr
ozenset({'olive oil'}), items_add=frozenset({'soup', 'mineral water'}), conf
idence=0.07894736842105264, lift=3.423030118649225), OrderedStatistic(items_
base=frozenset({'soup'}), items_add=frozenset({'olive oil', 'mineral wate
r'}), confidence=0.1029023746701847, lift=3.7288440212611373), OrderedStatis
tic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset
({'soup'}), confidence=0.18840579710144928, lift=3.7288440212611373), Order
edStatistic(items_base=frozenset({'soup', 'mineral water'}), items_add=froze
nset({'olive oil'}), confidence=0.22543352601156072, lift=3.423030118649224
5)])
RelationRecord(items=frozenset({'olive oil', 'whole wheat pasta', 'mineral w
ater'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic
(items_base=frozenset({'olive oil'}), items_add=frozenset({'whole wheat past
a', 'mineral water'}), confidence=0.058704453441295545, lift=6.1158625730994
15), OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add
=frozenset({'olive oil', 'mineral water'}), confidence=0.13122171945701358,
lift=4.755044046604149), OrderedStatistic(items_base=frozenset({'olive oil',
'mineral water'}), items_add=frozenset({'whole wheat pasta'}), confidence=0.

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1400966183574879, lift=4.755044046604148), OrderedStatistic(items_base=frozenset({'whole wheat pasta', 'mineral water'}), items_add=frozenset({'olive oil'}), confidence=0.4027777777777778, lift=6.115862573099416))
RelationRecord(items=frozenset({'tomatoes', 'soup', 'mineral water'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.07387862796833773, lift=3.0282163300027394), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'soup'}), confidence=0.15300546448087432, lift=3.0282163300027394)])
RelationRecord(items=frozenset({'olive oil', 'pancakes', 'spaghetti'}), support=0.005065991201173177, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'pancakes', 'spaghetti'}), confidence=0.07692307692307693, lift=3.052910052910053), OrderedStatistic(items_base=frozenset({'pancakes', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20105820105820105, lift=3.0529100529100526)])
RelationRecord(items=frozenset({'olive oil', 'tomatoes', 'spaghetti'}), support=0.004399413411545127, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.06680161943319839, lift=3.1915856520281602), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'olive oil', 'tomatoes'}), confidence=0.02526799387442573, lift=3.5099115194827295), OrderedStatistic(items_base=frozenset({'olive oil', 'tomatoes'}), items_add=frozenset({'spaghetti'}), confidence=0.6111111111111112, lift=3.5099115194827295), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.21019108280254778, lift=3.19158565202816)])
RelationRecord(items=frozenset({'tomatoes', 'whole wheat rice', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'whole wheat rice', 'spaghetti'}), confidence=0.04483430799220273, lift=3.1726617382029496), OrderedStatistic(items_base=frozenset({'whole wheat rice', 'spaghetti'}), items_add=frozenset({'tomatoes'}), confidence=0.2169811320754717, lift=3.1726617382029496)])
RelationRecord(items=frozenset({'avocado', 'milk', '0', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'avocado', '0', 'spaghetti'}), confidence=0.025720164609053502, lift=3.2154492455418384), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'avocado', 'spaghetti'}), confidence=0.025720164609053502, lift=3.2154492455418384), OrderedStatistic(items_base=frozenset({'avocado', 'spaghetti'}), items_add=frozenset({'milk', '0'}), confidence=0.41666666666666663, lift=3.215449245541838), OrderedStatistic(items_base=frozenset({'avocado', '0', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.41666666666666663, lift=3.215449245541838)])
RelationRecord(items=frozenset({'milk', 'burgers', '0', 'cake'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'burgers'}), items_add=frozenset({'milk', 'cake', '0'}), confidence=0.04281345565749235, lift=3.211437308868501), OrderedStatistic(items_base=frozenset({'burgers', '0'}), items_add=frozenset({'milk', 'cake'}), confidence=0.04281345565749235, lift=3.211437308868501), OrderedStatistic(items_base=frozenset({'milk', 'cake'}), items_add=frozenset({'burgers', '0'}), confidence=0.27999999999999997, lift=3.211437308868501), OrderedStatistic(items_base=frozenset({'milk', 'cake', '0'}), items_add=frozenset({'burgers'}), confidence=0.27999999999999997, lift=3.211437308868501)])
RelationRecord(items=frozenset({'turkey', 'chocolate', 'burgers', '0'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=

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frozenset({'burgers'}), items_add=frozenset({'chocolate', 'turkey', '0'}), c
onfidence=0.035168195718654434, lift=3.1034898363014927), OrderedStatistic(i
tems_base=frozenset({'burgers', '0'}), items_add=frozenset({'chocolate', 'tu
rkey'}), confidence=0.035168195718654434, lift=3.1034898363014927), OrderedS
tatistic(items_base=frozenset({'chocolate', 'turkey'}), items_add=frozenset
({'burgers', '0'}), confidence=0.27058823529411763, lift=3.103489836301492
7), OrderedStatistic(items_base=frozenset({'chocolate', 'turkey', '0'}), ite
ms_add=frozenset({'burgers'}), confidence=0.27058823529411763, lift=3.103489
8363014927)])
RelationRecord(items=frozenset({'turkey', 'milk', 'burgers', '0'}), support=
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set({'burgers'}), items_add=frozenset({'turkey', 'milk', '0'}), confidence=
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rozenset({'burgers', '0'}), items_add=frozenset({'turkey', 'milk'}), confide
nce=0.03669724770642202, lift=3.2384241770102538), OrderedStatistic(items_ba
se=frozenset({'milk', 'turkey'}), items_add=frozenset({'burgers', '0'}), con
fidence=0.2823529411764706, lift=3.2384241770102533), OrderedStatistic(items
_base=frozenset({'milk', 'turkey', '0'}), items_add=frozenset({'burgers'}),
confidence=0.2823529411764706, lift=3.2384241770102533)])
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edStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen
vegetables', 'cake', '0'}), confidence=0.04483430799220273, lift=4.367560314
928736), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}),
items_add=frozenset({'tomatoes', 'cake'}), confidence=0.03216783216783217, l
ift=3.83001443001443), OrderedStatistic(items_base=frozenset({'tomatoes',
'0'}), items_add=frozenset({'frozen vegetables', 'cake'}), confidence=0.0448
3430799220273, lift=4.367560314928736), OrderedStatistic(items_base=frozenset
({'frozen vegetables', 'cake'}), items_add=frozenset({'tomatoes', '0'}), co
nfidence=0.2987012987012987, lift=4.367560314928736), OrderedStatistic(items
_base=frozenset({'tomatoes', 'cake'}), items_add=frozenset({'frozen vegetabl
es', '0'}), confidence=0.36507936507936506, lift=3.8300144300144296), Ordere
dStatistic(items_base=frozenset({'frozen vegetables', 'cake', '0'}), items_a
dd=frozenset({'tomatoes'}), confidence=0.2987012987012987, lift=4.3675603149
28736), OrderedStatistic(items_base=frozenset({'tomatoes', 'cake', '0'}), it
ems_add=frozenset({'frozen vegetables'}), confidence=0.36507936507936506, li
ft=3.8300144300144296)])
RelationRecord(items=frozenset({'ground beef', 'cereals', '0', 'spaghetti
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paghetti'}), confidence=0.11917098445595856, lift=3.040481477565119), Ordere
dStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'cere
als', '0', 'spaghetti'}), confidence=0.03120759837177748, lift=4.68176390773
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nset({'ground beef', 'cereals', '0'}), confidence=0.01761102603369066, lift=
3.885303125844519), OrderedStatistic(items_base=frozenset({'cereals', '0'}),
items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.119170984455
95856, lift=3.040481477565119), OrderedStatistic(items_base=frozenset({'grou
nd beef', '0'}), items_add=frozenset({'cereals', 'spaghetti'}), confidence=
0.03120759837177748, lift=4.681763907734057), OrderedStatistic(items_base=fr
ozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'cereal
s'}), confidence=0.01761102603369066, lift=3.885303125844519), OrderedStatis
tic(items_base=frozenset({'ground beef', 'cereals'}), items_add=frozenset
({'0', 'spaghetti'}), confidence=0.6764705882352942, lift=3.885303125844518

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8), OrderedStatistic(items_base=frozenset({'cereals', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.45999999999999996, lift=4.681763907734057), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'cereals', '0'}), confidence=0.0782312925170068, lift=3.0404814775651197), OrderedStatistic(items_base=frozenset({'ground beef', 'cereals', '0'}), items_add=frozenset({'spaghetti'}), confidence=0.6764705882352942, lift=3.8853031258445188), OrderedStatistic(items_base=frozenset({'cereals', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.45999999999999996, lift=4.681763907734057), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'cereals'}), confidence=0.0782312925170068, lift=3.0404814775651197))
RelationRecord(items=frozenset({'ground beef', 'chicken', 'milk', '0'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'ground beef', 'chicken', '0'}), confidence=0.02983539094650206, lift=3.1520460209818584), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'ground beef', 'chicken'}), confidence=0.02983539094650206, lift=3.1520460209818584), OrderedStatistic(items_base=frozenset({'ground beef', 'chicken'}), items_add=frozenset({'milk', '0'}), confidence=0.40845070422535207, lift=3.152046020981858), OrderedStatistic(items_base=frozenset({'ground beef', 'chicken', '0'}), items_add=frozenset({'milk'}), confidence=0.40845070422535207, lift=3.152046020981858)])
RelationRecord(items=frozenset({'olive oil', 'chicken', 'milk', '0'}), support=0.0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chicken'}), items_add=frozenset({'olive oil', 'milk', '0'}), confidence=0.06, lift=3.51609375), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'chicken', '0'}), confidence=0.027777777777778, lift=3.8585390946502063), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'chicken', 'milk', '0'}), confidence=0.054655870445344125, lift=3.6934566145092456), OrderedStatistic(items_base=frozenset({'chicken', '0'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.06, lift=3.51609375), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'olive oil', 'chicken'}), confidence=0.027777777777778, lift=3.8585390946502063), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'chicken', 'milk'}), confidence=0.054766734279918856, lift=3.7009484129159578), OrderedStatistic(items_base=frozenset({'chicken', 'milk'}), items_add=frozenset({'olive oil', '0'}), confidence=0.24324324324324323, lift=3.700948412915958), OrderedStatistic(items_base=frozenset({'olive oil', 'chicken'}), items_add=frozenset({'milk', '0'}), confidence=0.5, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'chicken', '0'}), confidence=0.2109375, lift=3.51609375), OrderedStatistic(items_base=frozenset({'chicken', 'milk', '0'}), items_add=frozenset({'olive oil'}), confidence=0.24324324324324323, lift=3.693456614509246), OrderedStatistic(items_base=frozenset({'olive oil', 'chicken', '0'}), items_add=frozenset({'milk'}), confidence=0.5, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', '0'}), items_add=frozenset({'chicken'}), confidence=0.2109375, lift=3.51609375)])
RelationRecord(items=frozenset({'chicken', 'milk', '0', 'pancakes'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chicken'}), items_add=frozenset({'milk', '0', 'pancakes'}), confidence=0.051111111111111114, lift=3.091810035842294), OrderedStatistic(items_base=frozenset({'chicken', '0'}), items_add=frozenset({'milk', 'pancakes'}), confidence=0.051111111111111114, lift=3.091810035842294), OrderedStatistic(items_base=frozenset({'milk', 'pancakes'}), items_add=frozenset({'chicken', '0'}), confidence=0.18548387096774194, lift=3.091810035842294), OrderedStatistic(items_base=frozenset({'chicken', '0', 'pancakes'}), items_add=frozenset({'milk'}), confidence=0.051111111111111114, lift=3.091810035842294), OrderedStatistic(items_base=frozenset({'chicken', 'milk', '0'}), items_add=frozenset({'pancakes'}), confidence=0.18548387096774194, lift=3.091810035842294), OrderedStatistic(items_base=frozenset({'chicken', 'milk', '0', 'pancakes'}), items_add=frozenset({'0'}), confidence=0.051111111111111114, lift=3.091810035842294)])


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stic(items_base=frozenset({'milk', '0', 'pancakes'}), items_add=frozenset({'chicken'}), confidence=0.18548387096774194, lift=3.091810035842294))
RelationRecord(items=frozenset({'olive oil', 'chicken', '0', 'spaghetti'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'chicken', '0', 'spaghetti'}), confidence=0.05263157894736842, lift=3.0603835169318647), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'chicken', 'spaghetti'}), confidence=0.052738336713995936, lift=3.0665911914083996), OrderedStatistic(items_base=frozenset({'chicken', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20155038759689922, lift=3.0665911914083996), OrderedStatistic(items_base=frozenset({'chicken', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20155038759689922, lift=3.0603835169318647)])
RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'shrimp', '0'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'chocolate', 'shrimp', '0'}), confidence=0.055944055944055944, lift=3.1084175084175087), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.07462686567164178, lift=3.2545123221103784), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'chocolate', 'shrimp'}), confidence=0.055944055944055944, lift=3.1084175084175087), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.07476635514018692, lift=3.2605955227124546), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'shrimp', '0'}), confidence=0.23255813953488375, lift=3.260595522712454), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.29629629629629634, lift=3.1084175084175087), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'shrimp'}), confidence=0.23255813953488375, lift=3.2545123221103784), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.29629629629629634, lift=3.1084175084175087)])
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'herb & pepper', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'chocolate', 'herb & pepper', '0'}), confidence=0.0407055630936228, lift=4.490182775959774), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.08086253369272238, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'chocolate', 'herb & pepper'}), confidence=0.0407055630936228, lift=4.490182775959774), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.08086253369272238, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.17341040462427748, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'chocolate', 'herb & pepper'}), items_add=frozenset({'ground beef', '0'}), confidence=0.4411764705882354, lift=4.4901827759597746), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'herb & pepper'}), confidence=0.17341040462427748, lift=3.5060685851393676), OrderedStatistic(items_base=frozenset({'chocolate', 'herb & pepper', '0'}), items_add=frozenset({'ground beef'}), confidence=0.4411764705882354, lift=4.4901827759597746)])
RelationRecord(items=frozenset({'chocolate', 'soup', 'milk', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'chocolate', 'soup', '0'}), confidence=
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0.030864197530864203, lift=3.0462150747238472), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'chocolate', 'soup'}), confidence=0.030864197530864203, lift=3.0462150747238472), OrderedStatistic(items_base=frozenset({'chocolate', 'soup'}), items_add=frozenset({'milk', '0'}), confidence=0.3947368421052632, lift=3.0462150747238472), OrderedStatistic(items_base=frozenset({'chocolate', 'soup', '0'}), items_add=frozenset({'milk'}), confidence=0.3947368421052632, lift=3.0462150747238472)])

RelationRecord(items=frozenset({'cooking oil', 'ground beef', '0', 'spaghetti'}), support=0.004799360085321957, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'cooking oil', '0', 'spaghetti'}), confidence=0.048846675712347354, lift=3.078982474943844), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'cooking oil', 'ground beef', '0'}), confidence=0.027565084226646247, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'cooking oil', 'spaghetti'}), confidence=0.048846675712347354, lift=3.078982474943844), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'cooking oil', 'ground beef'}), confidence=0.027565084226646247, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'cooking oil', 'ground beef'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5714285714285714, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'cooking oil', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3025210084033613, lift=3.0789824749438446), OrderedStatistic(items_base=frozenset({'cooking oil', 'ground beef', '0'}), items_add=frozenset({'spaghetti'}), confidence=0.5714285714285714, lift=3.2819951870487856), OrderedStatistic(items_base=frozenset({'cooking oil', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3025210084033613, lift=3.0789824749438446)])

RelationRecord(items=frozenset({'ground beef', 'herb & pepper', '0', 'eggs'}), support=0.0041327822956939075, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', '0', 'eggs'}), confidence=0.04206241519674356, lift=3.3564912381997174), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', '0', 'eggs'}), confidence=0.08355795148247978, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'herb & pepper', 'eggs'}), confidence=0.04206241519674356, lift=3.3564912381997174), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.08355795148247978, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.2066666666666667, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'herb & pepper', 'eggs'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3297872340425532, lift=3.3564912381997174), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'eggs'}), items_add=frozenset({'herb & pepper'}), confidence=0.2066666666666667, lift=4.178454627133872), OrderedStatistic(items_base=frozenset({'herb & pepper', '0', 'eggs'}), items_add=frozenset({'ground beef'}), confidence=0.3297872340425532, lift=3.3564912381997174)])

RelationRecord(items=frozenset({'red wine', 'spaghetti', '0', 'eggs'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'red wine'}), items_add=frozenset({'eggs', '0', 'spaghetti'}), confidence=0.13270142180094788, lift=3.6328224997405476), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'red wine', '0', 'eggs'}), confidence=0.021439509954058193, lift=3.0342974370828397), OrderedStatistic(items_base=frozenset({'red wine', '0'}), items_add=frozenset({'eggs', 'spaghetti'}), confidence=0.13270142180094788, lift=3.6328224997405476), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset

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({'red wine', 'eggs'}), confidence=0.021439509954058193, lift=3.034297437082
8397), OrderedStatistic(items_base=frozenset({'red wine', 'eggs'}), items_ad
d=frozenset({'0', 'spaghetti'}), confidence=0.5283018867924528, lift=3.03429
74370828397), OrderedStatistic(items_base=frozenset({'spaghetti', 'eggs'}),
items_add=frozenset({'red wine', '0'}), confidence=0.10218978102189781, lift
=3.632822499740547), OrderedStatistic(items_base=frozenset({'red wine', '0',
'eggs'}), items_add=frozenset({'spaghetti'}), confidence=0.5283018867924528,
lift=3.0342974370828397), OrderedStatistic(items_base=frozenset({'spaghet
t', '0', 'eggs'}), items_add=frozenset({'red wine'}), confidence=0.102189781
02189781, lift=3.632822499740547)])
RelationRecord(items=frozenset({'ground beef', 'french fries', 'herb & peppe
r', '0'}), support=0.003199573390214638, ordered_statistics=[OrderedStatisti
c(items_base=frozenset({'ground beef'}), items_add=frozenset({'french frie
s', 'herb & pepper', '0'}), confidence=0.03256445047489824, lift=4.697421981
004071), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add
=frozenset({'ground beef', 'french fries', '0'}), confidence=0.0646900269541
779, lift=4.665768194070082), OrderedStatistic(items_base=frozenset({'ground
beef', '0'}), items_add=frozenset({'french fries', 'herb & pepper'}), confid
ence=0.03256445047489824, lift=4.697421981004071), OrderedStatistic(items_ba
se=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'f
rench fries'}), confidence=0.0646900269541779, lift=4.665768194070082), Orde
redStatistic(items_base=frozenset({'ground beef', 'french fries'}), items_ad
d=frozenset({'herb & pepper', '0'}), confidence=0.23076923076923078, lift=4.
665768194070081), OrderedStatistic(items_base=frozenset({'french fries', 'he
rb & pepper'}), items_add=frozenset({'ground beef', '0'}), confidence=0.4615
3846153846156, lift=4.697421981004071), OrderedStatistic(items_base=frozens
et({'ground beef', 'french fries', '0'}), items_add=frozenset({'herb & peppe
r'}), confidence=0.23076923076923078, lift=4.665768194070081), OrderedStatis
tic(items_base=frozenset({'french fries', 'herb & pepper', '0'}), items_add=
frozenset({'ground beef'}), confidence=0.46153846153846156, lift=4.697421981
004071)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'green te
a', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStatisti
c(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetable
s', 'green tea', '0'}), confidence=0.04873294346978558, lift=3.3846834163598
3), OrderedStatistic(items_base=frozenset({'tomatoes', '0'}), items_add=froz
enset({'frozen vegetables', 'green tea'}), confidence=0.04873294346978558, l
ift=3.38468341635983), OrderedStatistic(items_base=frozenset({'frozen vegeta
bles', 'green tea'}), items_add=frozenset({'tomatoes', '0'}), confidence=0.2
314814814814815, lift=3.38468341635983), OrderedStatistic(items_base=frozens
et({'frozen vegetables', 'green tea', '0'}), items_add=frozenset({'tomatoe
s'}), confidence=0.2314814814814815, lift=3.38468341635983)])
RelationRecord(items=frozenset({'frozen vegetables', 'ground beef', '0', 'sp
aghetti'}), support=0.008665511265164644, ordered_statistics=[OrderedStatist
ic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen veget
ables', '0', 'spaghetti'}), confidence=0.08819538670284939, lift=3.165328208
890303), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_
add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.088195386702
84939, lift=3.165328208890303), OrderedStatistic(items_base=frozenset({'froz
en vegetables', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), co
nfidence=0.31100478468899523, lift=3.165328208890303), OrderedStatistic(item
s_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozens
et({'ground beef'}), confidence=0.31100478468899523, lift=3.16532820889030
3)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'olive oil',
'0'}), support=0.004799360085321957, ordered_statistics=[OrderedStatistic(it

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ems_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'olive oil', '0'}), confidence=0.037037037037037035, lift=3.2684095860566447), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.0728744939271255, lift=3.0883140053523634), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen vegetables', 'olive oil'}), confidence=0.037037037037037035, lift=3.2684095860566447), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.07302231237322514, lift=3.0945783339636255), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20338983050847456, lift=3.094578333963626), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}), items_add=frozenset({'milk', '0'}), confidence=0.4235294117647058, lift=3.2684095860566447), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'olive oil'}), confidence=0.20338983050847456, lift=3.088314005352364), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil', '0'}), items_add=frozenset({'milk'}), confidence=0.4235294117647058, lift=3.2684095860566447)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'soup', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'soup', '0'}), confidence=0.030864197530864203, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.079155672823219, lift=3.3545011403783374), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen vegetables', 'soup'}), confidence=0.030864197530864203, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.079155672823219, lift=3.3545011403783374), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'soup', '0'}), confidence=0.16949152542372883, lift=3.354501140378338), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup'}), items_add=frozenset({'milk', '0'}), confidence=0.5, lift=3.858539094650206), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'soup'}), confidence=0.16949152542372883, lift=3.354501140378338), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup', '0'}), items_add=frozenset({'milk'}), confidence=0.5, lift=3.858539094650206)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'milk', '0'}), support=0.0041327822956939075, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'milk', '0'}), confidence=0.043356643356643354, lift=3.0973160173160172), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'tomatoes', 'milk'}), confidence=0.043356643356643354, lift=3.0973160173160172), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.29523809523809524, lift=3.0973160173160172), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.29523809523809524, lift=3.0973160173160172)])
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'mineral water', '0'}), support=0.007199040127982935, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'shrimp', 'mineral water', '0'}), confidence=0.07552447552447553, lift=3.218801652892562), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.07552447552447553, lift=3.2006163328197226), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0'}), con

confidence=0.30508474576271183, lift=3.200616332819722), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3068181818181818, lift=3.218801652892562)])
RelationRecord(items=frozenset({'frozen vegetables', 'olive oil', '0', 'spaghetti'}), support=0.005732568990801226, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.08704453441295547, lift=3.124024175270713), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.08722109533468558, lift=3.1303609383037156), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20574162679425836, lift=3.1303609383037156), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20574162679425836, lift=3.1240241752707125)])
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', '0', 'spaghetti'}), support=0.005999200106652446, ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.08395522388059701, lift=3.013148968078269), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.08411214953271028, lift=3.018781022242097), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'shrimp', '0'}), confidence=0.21531100478468898, lift=3.018781022242093), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.21531100478468898, lift=3.0131489680782684)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'shrimp', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'shrimp', '0'}), confidence=0.04195804195804196, lift=3.7467532467532467), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', 'tomatoes', '0'}), confidence=0.055970149253731345, lift=3.469686690514371), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'shrimp', '0'}), confidence=0.058479532163742694, lift=3.5092397660818713), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'tomatoes', 'shrimp'}), confidence=0.04195804195804196, lift=3.7467532467532467), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'frozen vegetables', 'tomatoes'}), confidence=0.05607476635514019, lift=3.4761720861975753), OrderedStatistic(items_base=frozenset({'tomatoes', '0'}), items_add=frozenset({'frozen vegetables', 'shrimp'}), confidence=0.058479532163742694, lift=3.5092397660818713), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shrimp'}), items_add=frozenset({'tomatoes', '0'}), confidence=0.24000000000000002, lift=3.5092397660818717), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}), items_add=frozenset({'shrimp', '0'}), confidence=0.2479338842975207, lift=3.4761720861975753), OrderedStatistic(items_base=frozenset({'tomatoes', 'shrimp'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.35714285714285715, lift=3.7467532467532467), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shrimp', '0'}), items_add=frozenset({'tomatoes'}), confidence=0.24000000000000002, lift=3.5092397660818717), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes', '0'}), items_add=frozenset({'shrimp'}), confidence=0.2479338842975207, lift=3.4696866905143704), OrderedStatistic(items_base=frozenset({'tomatoes', 'shrimp', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.35714285714285715, lift=3.7467532467532467)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', '0', 'spaghetti'}), support=0.006665777896280496, ordered_statistics=[OrderedStatistic

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(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', '0', 'spaghetti'}), confidence=0.06993006993006994, lift=3.341053850607991), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.09746588693957116, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.06993006993006994, lift=3.341053850607991), OrderedStatistic(items_base=frozenset({'tomatoes', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.09746588693957116, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'tomatoes', '0'}), confidence=0.23923444976076558, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.3184713375796179, lift=3.341053850607991), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'tomatoes'}), confidence=0.23923444976076558, lift=3.4980460188216425), OrderedStatistic(items_base=frozenset({'tomatoes', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3184713375796179, lift=3.341053850607991)])
RelationRecord(items=frozenset({'ground beef', 'grated cheese', '0', 'spaghetti'}), support=0.005332622317024397, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'0', 'grated cheese', 'spaghetti'}), confidence=0.054274084124830396, lift=3.283144395325426), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'grated cheese', 'spaghetti'}), confidence=0.054274084124830396, lift=3.283144395325426), OrderedStatistic(items_base=frozenset({'grated cheese', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3225806451612903, lift=3.283144395325426), OrderedStatistic(items_base=frozenset({'grated cheese', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3225806451612903, lift=3.283144395325426)])
RelationRecord(items=frozenset({'herb & pepper', 'grated cheese', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'grated cheese'}), items_add=frozenset({'herb & pepper', '0', 'spaghetti'}), confidence=0.058524173027989825, lift=3.5982772285487843), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'0', 'grated cheese', 'spaghetti'}), confidence=0.06199460916442048, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'grated cheese', '0'}), items_add=frozenset({'herb & pepper', 'spaghetti'}), confidence=0.058524173027989825, lift=3.5982772285487843), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'grated cheese', 'spaghetti'}), confidence=0.06199460916442048, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'grated cheese', 'spaghetti'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.18548387096774194, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'herb & pepper', 'spaghetti'}), items_add=frozenset({'0', 'grated cheese'}), confidence=0.18852459016393444, lift=3.5982772285487843), OrderedStatistic(items_base=frozenset({'grated cheese', '0', 'spaghetti'}), items_add=frozenset({'herb & pepper'}), confidence=0.18548387096774194, lift=3.7501738979219197), OrderedStatistic(items_base=frozenset({'herb & pepper', '0', 'spaghetti'}), items_add=frozenset({'grated cheese'}), confidence=0.18852459016393444, lift=3.5982772285487843)])
RelationRecord(items=frozenset({'ground beef', 'tomatoes', 'green tea', '0'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'ground beef', 'green tea', '0'}), confidence=0.04483430799220273, lift=3.0297490472929067), OrderedStatistic(items_base=frozenset({'tomatoes', '0'}), items_add=frozenset({'ground beef', 'green tea'}), confidence=0.04483430799220273, lift=3.02974
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90472929067), OrderedStatistic(items_base=frozenset({'ground beef', 'green tea'}), items_add=frozenset({'tomatoes', '0'}), confidence=0.2072072072072072, lift=3.0297490472929067), OrderedStatistic(items_base=frozenset({'ground beef', 'green tea', '0'}), items_add=frozenset({'tomatoes'}), confidence=0.2072072072072072, lift=3.0297490472929067)))
RelationRecord(items=frozenset({'ground beef', 'milk', 'herb & pepper', '0'}), support=0.0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'milk', 'herb & pepper', '0'}), confidence=0.036635006784260515, lift=3.982596896938234), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'milk', '0'}), confidence=0.07277628032345013, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'milk', 'herb & pepper'}), confidence=0.036635006784260515, lift=3.982596896938234), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07277628032345013, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.16363636363636364, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'milk', 'herb & pepper'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3913043478260869, lift=3.9825968969382335), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', '0'}), items_add=frozenset({'herb & pepper'}), confidence=0.16363636363636364, lift=3.3084538103406027), OrderedStatistic(items_base=frozenset({'milk', 'herb & pepper', '0'}), items_add=frozenset({'ground beef'}), confidence=0.3913043478260869, lift=3.9825968969382335)])
RelationRecord(items=frozenset({'ground beef', 'herb & pepper', 'mineral water', '0'}), support=0.006665777896280496, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', 'mineral water', '0'}), confidence=0.067842605156038, lift=3.9756826662143836), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', 'mineral water', '0'}), confidence=0.1347708894878706, lift=3.292887433382793), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'herb & pepper', 'mineral water'}), confidence=0.067842605156038, lift=3.9756826662143836), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.1347708894878706, lift=3.292887433382793), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.16286644951140067, lift=3.2928874333827935), OrderedStatistic(items_base=frozenset({'herb & pepper', 'mineral water'}), items_add=frozenset({'ground beef', '0'}), confidence=0.39062500000000006, lift=3.975682666214383), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water', '0'}), items_add=frozenset({'herb & pepper'}), confidence=0.16286644951140067, lift=3.2928874333827935), OrderedStatistic(items_base=frozenset({'herb & pepper', 'mineral water', '0'}), items_add=frozenset({'ground beef'}), confidence=0.39062500000000006, lift=3.975682666214383)])
RelationRecord(items=frozenset({'ground beef', 'herb & pepper', '0', 'spaghetti'}), support=0.006399146780429276, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'herb & pepper', '0', 'spaghetti'}), confidence=0.06512890094979648, lift=4.004359721511667), OrderedStatistic(items_base=frozenset({'herb & pepper'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.1293800539083558, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'herb & pepper', 'spaghetti'}), confidence=0.06512890094979648, lift=4.004359721511667), OrderedStatistic(items_base=frozenset({'herb & pepper', '0'}), items_add=frozenset({'ground beef', 'spaghet

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i'}), confidence=0.1293800539083558, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'herb & pepper', '0'}), confidence=0.163265306122449, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'herb & pepper', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3934426229508197, lift=4.004359721511667), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'herb & pepper'}), confidence=0.163265306122449, lift=3.3009516475053635), OrderedStatistic(items_base=frozenset({'herb & pepper', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3934426229508197, lift=4.004359721511667)))
RelationRecord(items=frozenset({'ground beef', 'milk', 'olive oil', '0'}), support=0.004932675643247567, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'ground beef', 'milk', '0'}), confidence=0.07489878542510121, lift=3.4049441786283894), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07505070993914807, lift=3.4118507591124225), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'olive oil', '0'}), confidence=0.22424242424242427, lift=3.4118507591124225), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', '0'}), items_add=frozenset({'olive oil'}), confidence=0.22424242424242427, lift=3.40494417862839)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'soup', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'ground beef', 'soup', '0'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'ground beef', 'milk', '0'}), confidence=0.079155672823219, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'ground beef', 'soup'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.079155672823219, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'soup', '0'}), confidence=0.18181818181818185, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'ground beef', 'soup'}), items_add=frozenset({'milk', '0'}), confidence=0.4109589041095891, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', '0'}), items_add=frozenset({'soup'}), confidence=0.18181818181818185, lift=3.5984648596785807), OrderedStatistic(items_base=frozenset({'ground beef', 'soup', '0'}), items_add=frozenset({'milk'}), confidence=0.4109589041095891, lift=3.1714019956029094)])
RelationRecord(items=frozenset({'ground beef', 'pepper', '0', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'pepper', '0', 'spaghetti'}), confidence=0.033921302578019, lift=3.438428251861088), OrderedStatistic(items_base=frozenset({'pepper'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.12562814070351758, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'pepper', 'spaghetti'}), confidence=0.033921302578019, lift=3.438428251861088), OrderedStatistic(items_base=frozenset({'pepper', '0'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12562814070351758, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'pepper', '0'}), confidence=0.08503401360544217, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'pepper', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.33783783783783783, lift=3.4384282518610876), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'pepper


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r'}), confidence=0.08503401360544217, lift=3.2052268143438276), OrderedStatistic(items_base=frozenset({'pepper', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.33783783783783783, lift=3.4384282518610876))
RelationRecord(items=frozenset({'ground beef', 'shrimp', '0', 'spaghetti'}), support=0.005999200106652446, ordered_statistics=[OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'shrimp', '0'}), confidence=0.03445635528330781, lift=3.0053153602336264), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'shrimp'}), confidence=0.03445635528330781, lift=3.0053153602336264), OrderedStatistic(items_base=frozenset({'ground beef', 'shrimp'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5232558139534884, lift=3.005315360233627), OrderedStatistic(items_base=frozenset({'ground beef', 'shrimp', '0'}), items_add=frozenset({'spaghetti'}), confidence=0.5232558139534884, lift=3.005315360233627)])
RelationRecord(items=frozenset({'ground beef', 'tomato sauce', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomato sauce', '0', 'spaghetti'}), confidence=0.03120759837177748, lift=4.980599901844742), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', '0', 'tomato sauce'}), confidence=0.01761102603369066, lift=3.302507656967841), OrderedStatistic(items_base=frozenset({'tomato sauce'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.2169811320754717, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'tomato sauce', 'spaghetti'}), confidence=0.03120759837177748, lift=4.980599901844742), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'tomato sauce'}), confidence=0.01761102603369066, lift=3.302507656967841), OrderedStatistic(items_base=frozenset({'tomato sauce', '0'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.2169811320754717, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'tomato sauce', '0'}), confidence=0.0782312925170068, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', 'tomato sauce'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5750000000000001, lift=3.3025076569678413), OrderedStatistic(items_base=frozenset({'tomato sauce', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.4893617021276596, lift=4.980599901844742), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'tomato sauce'}), confidence=0.0782312925170068, lift=5.535970992170453), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'tomato sauce'}), items_add=frozenset({'spaghetti'}), confidence=0.5750000000000001, lift=3.3025076569678413), OrderedStatistic(items_base=frozenset({'tomato sauce', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.4893617021276596, lift=4.980599901844742)])
RelationRecord(items=frozenset({'light cream', 'mineral water', '0', 'spaghetti'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'light cream'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.20512820512820515, lift=3.4345238095238098), OrderedStatistic(items_base=frozenset({'light cream', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.20512820512820515, lift=3.4345238095238098), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'light cream', '0'}), confidence=0.053571428571428575, lift=3.4345238095238098), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'light cream'}), confidence=0.053571428571428575, lift=3.4345238095238098)])
RelationRecord(items=frozenset({'milk', 'soup', 'mineral water', '0'}), supp
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ort=0.008532195707239034, ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.16886543535620052, lift=3.518498973907945), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.16886543535620052, lift=3.518498973907945), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'soup', '0'}), confidence=0.17777777777777776, lift=3.5184989739079446), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'soup'}), confidence=0.17777777777777776, lift=3.5184989739079446)])
RelationRecord(items=frozenset({'olive oil', 'milk', 'shrimp', '0'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'shrimp', '0'}), confidence=0.02469135802469136, lift=3.0868312757201646), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'olive oil', 'shrimp'}), confidence=0.02469135802469136, lift=3.0362274843149164), OrderedStatistic(items_base=frozenset({'olive oil', 'shrimp'}), items_add=frozenset({'milk', '0'}), confidence=0.3934426229508197, lift=3.0362274843149164), OrderedStatistic(items_base=frozenset({'olive oil', 'shrimp', '0'}), items_add=frozenset({'milk'}), confidence=0.39999999999999997, lift=3.0868312757201646)])
RelationRecord(items=frozenset({'olive oil', 'milk', 'soup', '0'}), support=0.0035995200639914677, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'soup', '0'}), confidence=0.02777777777777778, lift=3.1098673300165838), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'milk', 'soup', '0'}), confidence=0.054655870445344125, lift=3.596260387811634), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'olive oil', 'milk', '0'}), confidence=0.07124010554089709, lift=4.174781497361478), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'olive oil', 'soup'}), confidence=0.02777777777777778, lift=3.1098673300165838), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'milk', 'soup'}), confidence=0.054766734279918856, lift=3.603555033628696), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.07124010554089709, lift=4.174781497361478), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'soup', '0'}), confidence=0.2109375, lift=4.174781497361478), OrderedStatistic(items_base=frozenset({'milk', 'soup'}), items_add=frozenset({'olive oil', '0'}), confidence=0.23684210526315788, lift=3.603555033628696), OrderedStatistic(items_base=frozenset({'olive oil', 'soup'}), items_add=frozenset({'milk', '0'}), confidence=0.4029850746268656, lift=3.1098673300165833), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', '0'}), items_add=frozenset({'soup'}), confidence=0.2109375, lift=4.174781497361478), OrderedStatistic(items_base=frozenset({'milk', 'soup', '0'}), items_add=frozenset({'olive oil'}), confidence=0.23684210526315788, lift=3.5962603878116344), OrderedStatistic(items_base=frozenset({'olive oil', 'soup', '0'}), items_add=frozenset({'milk'}), confidence=0.4029850746268656, lift=3.1098673300165833)])
RelationRecord(items=frozenset({'olive oil', 'milk', '0', 'spaghetti'}), support=0.007199040127982935, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.10931174089068825, lift=3.0825089038385434), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.10953346855983771, lift=3.088761457396025), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20300751879699247, lift=3.088761457396025), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20300751879699247, lift=3.08250890383854
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34)])

RelationRecord(items=frozenset({'tomatoes', 'milk', 'soup', '0'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'tomatoes', 'soup', '0'}), confidence=0.02366255144032922, lift=3.4133230452674903), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'tomatoes', 'milk', '0'}), confidence=0.06068601583113457, lift=4.335293378565146), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'tomatoes', 'soup'}), confidence=0.02366255144032922, lift=3.4133230452674903), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'tomatoes', 'milk'}), confidence=0.06068601583113457, lift=4.335293378565146), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk'}), items_add=frozenset({'soup', '0'}), confidence=0.21904761904761905, lift=4.335293378565146), OrderedStatistic(items_base=frozenset({'tomatoes', 'soup'}), items_add=frozenset({'milk', '0'}), confidence=0.44230769230769235, lift=3.4133230452674903), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk', '0'}), items_add=frozenset({'soup'}), confidence=0.21904761904761905, lift=4.335293378565146), OrderedStatistic(items_base=frozenset({'tomatoes', 'soup', '0'}), items_add=frozenset({'milk'}), confidence=0.44230769230769235, lift=3.4133230452674903)])

RelationRecord(items=frozenset({'milk', 'whole wheat pasta', '0', 'spaghetti'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'whole wheat pasta', '0', 'spaghetti'}), confidence=0.030864197530864203, lift=3.5077628133183696), OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.13574660633484165, lift=3.8279522335249894), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'whole wheat pasta', 'spaghetti'}), confidence=0.030864197530864203, lift=3.5077628133183696), OrderedStatistic(items_base=frozenset({'whole wheat pasta', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.13574660633484165, lift=3.8279522335249894), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'whole wheat pasta', '0'}), confidence=0.11278195488721805, lift=3.827952233524989), OrderedStatistic(items_base=frozenset({'whole wheat pasta', 'spaghetti'}), items_add=frozenset({'milk', '0'}), confidence=0.4545454545454546, lift=3.5077628133183696), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'whole wheat pasta'}), confidence=0.11278195488721805, lift=3.827952233524989), OrderedStatistic(items_base=frozenset({'whole wheat pasta', '0', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.4545454545454546, lift=3.5077628133183696)])

RelationRecord(items=frozenset({'olive oil', 'soup', 'mineral water', '0'}), support=0.005199306759098787, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'soup', 'mineral water', '0'}), confidence=0.07894736842105264, lift=3.423030118649225), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'olive oil', 'mineral water', '0'}), confidence=0.1029023746701847, lift=3.7469452058303663), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'soup', 'mineral water'}), confidence=0.07910750507099391, lift=3.429973384609973), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.1029023746701847, lift=3.7288440212611373), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'soup', '0'}), confidence=0.18840579710144928, lift=3.7288440212611373), OrderedStatistic(items_base=frozenset({'soup', 'mineral water'}), items_add=frozenset({'olive oil', '0'}), confidence=0.22543352601156072, lift=3.429973384609973), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', '0'}), items_add=frozenset({'soup'}), confidence=0.18932038834951456, lift=3.746945205830366), OrderedStatistic

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tic(items_base=frozenset({'soup', 'mineral water', '0'}), items_add=frozenset({'olive oil'}), confidence=0.22543352601156072, lift=3.4230301186492245)])
RelationRecord(items=frozenset({'olive oil', 'whole wheat pasta', 'mineral water', '0'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'whole wheat pasta', 'mineral water', '0'}), confidence=0.058704453441295545, lift=6.115862573099415), OrderedStatistic(items_base=frozenset({'whole wheat pasta'}), items_add=frozenset({'olive oil', 'mineral water', '0'}), confidence=0.13122171945701358, lift=4.77812678469446), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'whole wheat pasta', 'mineral water'}), confidence=0.0588235294117647, lift=6.128267973856208), OrderedStatistic(items_base=frozenset({'whole wheat pasta', '0'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.13122171945701358, lift=4.755044046604149), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'whole wheat pasta', '0'}), confidence=0.1400966183574879, lift=4.755044046604148), OrderedStatistic(items_base=frozenset({'whole wheat pasta', 'mineral water'}), items_add=frozenset({'olive oil', '0'}), confidence=0.4027777777777778, lift=6.128267973856209), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', '0'}), items_add=frozenset({'whole wheat pasta'}), confidence=0.1407766990291262, lift=4.77812678469446), OrderedStatistic(items_base=frozenset({'whole wheat pasta', 'mineral water', '0'}), items_add=frozenset({'olive oil'}), confidence=0.4027777777777778, lift=6.115862573099416)])
RelationRecord(items=frozenset({'tomatoes', 'soup', 'mineral water', '0'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'tomatoes', 'mineral water', '0'}), confidence=0.07387862796833773, lift=3.0282163300027394), OrderedStatistic(items_base=frozenset({'soup', '0'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.07387862796833773, lift=3.0282163300027394), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'soup', '0'}), confidence=0.15300546448087432, lift=3.0282163300027394), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', '0'}), items_add=frozenset({'soup'}), confidence=0.15300546448087432, lift=3.0282163300027394)])
RelationRecord(items=frozenset({'olive oil', 'pancakes', '0', 'spaghetti'}), support=0.005065991201173177, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'pancakes', '0', 'spaghetti'}), confidence=0.07692307692307693, lift=3.052910052910053), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'pancakes', 'spaghetti'}), confidence=0.07707910750507098, lift=3.0591025682303568), OrderedStatistic(items_base=frozenset({'pancakes', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.20105820105820105, lift=3.0591025682303568), OrderedStatistic(items_base=frozenset({'pancakes', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.20105820105820105, lift=3.0529100529100526)])
RelationRecord(items=frozenset({'olive oil', 'tomatoes', '0', 'spaghetti'}), support=0.004399413411545127, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'tomatoes', '0', 'spaghetti'}), confidence=0.06680161943319839, lift=3.1915856520281602), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'olive oil', 'tomatoes', '0'}), confidence=0.02526799387442573, lift=3.5099115194827295), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.06693711967545639, lift=3.198059456596168), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'olive oil', 'tomatoes'}), confidence=0.02526799387442573, lift=3.5099115194827295), OrderedStatistic(items_base=frozenset({'olive oil',

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'tomatoes'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.61111111
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RelationRecord(items=frozenset({'tomatoes', 'whole wheat rice', '0', 'spaghe
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lift=3.1726617382029496), OrderedStatistic(items_base=frozenset({'whole whea
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RelationRecord(items=frozenset({'ground beef', 'chocolate', 'mineral water',
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l water'}), confidence=0.033921302578019, lift=3.4855300087358976), OrderedS
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=frozenset({'ground beef', 'mineral water'}), confidence=0.1453488372093023
3, lift=3.5513408075145825), OrderedStatistic(items_base=frozenset({'ground

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beef', 'chocolate'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.14450867052023122, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'ground beef'}), confidence=0.06329113924050633, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.19685039370078738, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.09328358208955223, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.08143322475570033, lift=3.551340807514583), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), items_add=frozenset({'ground beef'}), confidence=0.34246575342465757, lift=3.4855300087358976), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', 'mineral water'}), items_add=frozenset({'frozen vegetables'}), confidence=0.30487804878048785, lift=3.1984478935698455)])
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RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'milk', 'mineral water'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.17441860465116282, lift=3.63420542635659), OrderedStatistic(items_base=frozenset({'chocolate', 'milk'}), items_add=frozenset({'frozen vegetables',

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'mineral water'}), confidence=0.1244813278008299, lift=3.4840837307239743),
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4)])
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redStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), i
tems_add=frozenset({'chocolate', 'shrimp'}), confidence=0.08955223880597014,
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tables', 'shrimp'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.192, lift=3.6460556962025317), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.13559322033898305, lift=5.913283405597162), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), items_add=frozenset({'shrimp'}), confidence=0.32876712328767127, lift=4.600899611531385), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables'}), confidence=0.4210526315789474, lift=4.417224880382776)])

RelationRecord(items=frozenset({'frozen vegetables', 'chocolate', 'mineral water', 'spaghetti'}), support=0.0041327822956939075, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1802325581395349, lift=3.0176884343853825), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.06919642857142858, lift=3.0176884343853825)])

RelationRecord(items=frozenset({'ground beef', 'chocolate', 'milk', 'mineral water'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.14450867052023122, lift=3.0109987154784847), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.06944444444444444, lift=3.0109987154784843)])

RelationRecord(items=frozenset({'olive oil', 'chocolate', 'mineral water', 'spaghetti'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'chocolate', 'mineral water', 'spaghetti'}), confidence=0.058704453441295545, lift=3.700353825740822), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'olive oil', 'spaghetti'}), confidence=0.07341772151898734, lift=3.201780983220489), OrderedStatistic(items_base=frozenset({'olive oil', 'chocolate'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.23577235772357724, lift=3.947608159117306), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.09863945578231292, lift=3.5743698445561796), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.1400966183574879, lift=3.5743698445561796), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil', 'chocolate'}), confidence=0.06473214285714286, lift=3.947608159117306), OrderedStatistic(items_base=frozenset({'olive oil', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.1686046511627907, lift=3.2017809832204884), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.2436974789915966, lift=3.700353825740822)])

RelationRecord(items=frozenset({'chocolate', 'spaghetti', 'mineral water', 'pancakes'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'pancakes'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1879194630872483, lift=3.1463926174496644), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'chocolate', 'pancakes'}), confidence=0.0625, lift=3.1463926174496644)])

RelationRecord(items=frozenset({'chocolate', 'shrimp', 'mineral water', 'spaghetti'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'chocolate', 'mineral water', 'spaghetti'}), confidence=0.04850746268656716, lift=3.0576006522011783), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.04850746268656716, lift=3.0576006522011783)])

r'}), items_add=frozenset({'shrimp', 'spaghetti'}), confidence=0.06582278481012657, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1925925925925926, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.08843537414965985, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.14689265536723162, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'chocolate', 'shrimp'}), confidence=0.05803571428571428, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'shrimp', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.16352201257861634, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.21848739495798317, lift=3.0576006522011783)])

RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'mineral water', 'eggs'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water', 'eggs'}), confidence=0.02880658436213992, lift=3.177620430888405), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'eggs'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.17177914110429446, lift=3.5792092706203134), OrderedStatistic(items_base=frozenset({'milk', 'eggs'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.12121212121212122, lift=3.392582541836273), OrderedStatistic(items_base=frozenset({'mineral water', 'eggs'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.07329842931937172, lift=3.106279764545804), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'mineral water', 'eggs'}), confidence=0.1581920903954802, lift=3.106279764545804), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'milk', 'eggs'}), confidence=0.10447761194029849, lift=3.3925825418362727), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'eggs'}), confidence=0.07777777777777778, lift=3.5792092706203134), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', 'eggs'}), items_add=frozenset({'milk'}), confidence=0.411764705882353, lift=3.177620430888405)])

RelationRecord(items=frozenset({'ground beef', 'milk', 'mineral water', 'eggs'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.16666666666666669, lift=3.4726851851851857), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.06944444444444445, lift=3.4726851851851857)])

RelationRecord(items=frozenset({'ground beef', 'spaghetti', 'mineral water', 'eggs'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.19333333333333336, lift=3.237038690476191), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.06473214285714286, lift=3.237038690476191)])

RelationRecord(items=frozenset({'milk', 'frozen smoothie', 'mineral water', 'spaghetti'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.05052631578947369, lift=3.2118465655664585), OrderedStatistic(items_base=frozenset({'milk'}), items_add

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=frozenset({'frozen smoothie', 'mineral water', 'spaghetti'}), confidence=0.02469135802469136, lift=3.6315662067296057), OrderedStatistic(items_base=frozenset({'milk', 'frozen smoothie'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.22429906542056074, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.15789473684210528, lift=4.452512861100119), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.20512820512820515, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen smoothie', 'spaghetti'}), confidence=0.06666666666666668, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'frozen smoothie', 'mineral water'}), confidence=0.09022556390977443, lift=4.452512861100119), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'milk', 'frozen smoothie'}), confidence=0.053571428571428575, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.4705882352941177, lift=3.631566206729606), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', 'spaghetti'}), items_add=frozenset({'frozen smoothie'}), confidence=0.2033898305084746, lift=3.211846565566459)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'ground beef', 'mineral water'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'milk', 'mineral water'}), confidence=0.03916083916083916, lift=3.5391018619934282), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water'}), confidence=0.037991858887381276, lift=3.433457030292132), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'ground beef', 'mineral water'}), confidence=0.02880658436213992, lift=3.1315679608755294), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.22047244094488186, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.1581920903954802, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.10447761194029849, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.1696969696969697, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.09120521172638436, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'ground beef'}), confidence=0.07777777777777778, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', 'mineral water'}), items_add=frozenset({'milk'}), confidence=0.40579710144927533, lift=3.1315679608755294), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water'}), items_add=frozenset({'ground beef'}), confidence=0.3373493975903614, lift=3.4334570302921317), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3373493975903614, lift=3.539101861993428)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'ground beef', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'milk', 'spaghetti'}), confidence=0.03216783216783217, lift=3.30

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53549190535496), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'milk', 'spaghetti'}), confidence=0.03120759837177748, lift=3.77561605462424), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk', 'ground beef'}), confidence=0.01761102603369066, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.1811023622047244, lift=5.1069504469836), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12994350282485875, lift=3.315327260847842), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.11004784688995216, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.1393939393939394, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.0782312925170068, lift=3.315327260847842), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'ground beef'}), confidence=0.08646616541353383, lift=5.1069504469836), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'ground beef'}), items_add=frozenset({'spaghetti'}), confidence=0.5348837209302326, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3709677419354839, lift=3.7756160546242397), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3150684931506849, lift=3.305354919053549))
RelationRecord(items=frozenset({'frozen vegetables', 'ground beef', 'mineral water', 'spaghetti'}), support=0.004399413411545127, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), confidence=0.04477611940298508, lift=3.731840796019901), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.25984251968503935, lift=4.350622187851519), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12313432835820895, lift=3.1416006701187937), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.15789473684210528, lift=3.857877593005315), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.10749185667752444, lift=3.857877593005315), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.11224489795918367, lift=3.1416006701187937), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'ground beef'}), confidence=0.07366071428571429, lift=4.350622187851518), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3666666666666667, lift=3.7318407960199007)])
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'olive oil', 'mineral water'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'olive oil', 'milk', 'mineral water'}), confidence=0.03496503496503497, lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'olive oil', 'mineral water'}), confidence=0.025720164609053502, lift=3.9372847904593944), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', 'mil

k', 'mineral water'})), confidence=0.05060728744939272, lift=4.573557387444516), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.14124293785310735, lift=5.118180081334097), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.09328358208955223, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.29411764705882354, lift=6.12826797385621), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'olive oil'}), confidence=0.06944444444444445, lift=6.128267973856209), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.19531250000000003, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.12077294685990338, lift=5.118180081334097), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water'}), items_add=frozenset({'olive oil'}), confidence=0.30120481927710846, lift=4.573557387444516), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil', 'mineral water'}), items_add=frozenset({'milk'}), confidence=0.5102040816326531, lift=3.937284790459394), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables'}), confidence=0.39062500000000006, lift=4.098011363636364)])

RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'soup', 'mineral water'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'milk', 'soup', 'mineral water'}), confidence=0.03216783216783217, lift=3.7701704545454553), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'soup', 'mineral water'}), confidence=0.02366255144032922, lift=4.670863114576566), OrderedStatistic(items_base=frozenset({'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk', 'soup'}), confidence=0.012863534675615214, lift=3.2163124533929905), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water'}), confidence=0.06068601583113457, lift=5.484407286136632), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'soup', 'mineral water'}), confidence=0.12994350282485875, lift=5.634139969302113), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'milk', 'soup'}), confidence=0.08582089552238806, lift=5.646864362398533), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.3833333333333333, lift=7.987175925925926), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'soup'}), confidence=0.06388888888888889, lift=7.987175925925926), OrderedStatistic(items_base=frozenset({'milk', 'soup'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.20175438596491227, lift=5.646864362398533), OrderedStatistic(items_base=frozenset({'soup', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.13294797687861273, lift=5.6341399693021135), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water'}), items_add=frozenset({'soup'}), confidence=0.27710843373493976, lift=5.484407286136631), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'soup'}), items_add=frozenset({'mineral water'}), confidence=0.7666666666666666, lift=3.21631245339299), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup', 'mineral water'}), items_add=frozenset({'milk'}), confidence=0.6052631578947368, lift=4.670863114576565), OrderedStatistic(items_base=frozenset({'milk', 'soup', 'mineral water'}), items_add=froze

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nset({'frozen vegetables'}), confidence=0.35937500000000006, lift=3.77017045
45454553]))
RelationRecord(items=frozenset({'frozen vegetables', 'milk', 'mineral wate
r', 'spaghetti'}), support=0.004532728969470737, ordered_statistics=[Ordered
Statistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset
({'milk', 'mineral water', 'spaghetti'}), confidence=0.04755244755244755, li
ft=3.0228043143297376), OrderedStatistic(items_base=frozenset({'frozen veget
ables', 'milk'}), items_add=frozenset({'mineral water', 'spaghetti'}), confi
dence=0.19209039548022597, lift=3.216227804681194), OrderedStatistic(items_b
ase=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset
({'milk', 'spaghetti'}), confidence=0.12686567164179102, lift=3.577516552575
4677), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghet
ti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.162679425
83732056, lift=3.389606592238171), OrderedStatistic(items_base=frozenset({'m
ilk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'spaghet
ti'}), confidence=0.09444444444444444, lift=3.389606592238171), OrderedStatis
tic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'froze
n vegetables', 'mineral water'}), confidence=0.12781954887218044, lift=3.577
516552575468), OrderedStatistic(items_base=frozenset({'mineral water', 'spag
hetti'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.0
7589285714285714, lift=3.216227804681194), OrderedStatistic(items_base=froze
nset({'milk', 'mineral water', 'spaghetti'}), items_add=frozenset({'frozen v
egetables'}), confidence=0.28813559322033894, lift=3.0228043143297376)])
RelationRecord(items=frozenset({'frozen vegetables', 'shrimp', 'mineral wate
r', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[Ordered
Statistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset
({'shrimp', 'mineral water', 'spaghetti'}), confidence=0.03496503496503497,
lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'shrimp'}),
items_add=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), co
nfidence=0.046641791044776115, lift=3.8873341625207294), OrderedStatistic(it
ems_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozen
set({'shrimp', 'spaghetti'}), confidence=0.09328358208955223, lift=4.4007556
55683844), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shri
mp'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.2,
lift=3.3486607142857148), OrderedStatistic(items_base=frozenset({'frozen veg
etables', 'spaghetti'}), items_add=frozenset({'shrimp', 'mineral water'}), c
onfidence=0.11961722488038279, lift=5.069202281512719), OrderedStatistic(ite
ms_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'frozen
vegetables', 'spaghetti'}), confidence=0.14124293785310735, lift=5.069202281
512719), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghet
ti'}), items_add=frozenset({'frozen vegetables', 'shrimp'}), confidence=0.055
80357142857143, lift=3.3486607142857143), OrderedStatistic(items_base=frozen
set({'shrimp', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'min
eral water'}), confidence=0.15723270440251574, lift=4.400755655683845), Orde
redStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', 'sp
aghetti'}), items_add=frozenset({'shrimp'}), confidence=0.2777777777777778,
lift=3.8873341625207294), OrderedStatistic(items_base=frozenset({'shrimp',
'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}),
confidence=0.39062500000000006, lift=4.098011363636364)])
RelationRecord(items=frozenset({'frozen vegetables', 'tomatoes', 'mineral wa
ter', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[Orde
redStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset
({'tomatoes', 'mineral water', 'spaghetti'}), confidence=0.0321678321678321
7, lift=3.4470129870129873), OrderedStatistic(items_base=frozenset({'spaghet
ti'}), items_add=frozenset({'frozen vegetables', 'tomatoes', 'mineral wate
r'}), confidence=0.01761102603369066, lift=3.0022796881525826), OrderedStati

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stic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), confidence=0.04483430799220273, lift=3.736690491661252), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.08582089552238806, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.11004784688995216, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1900826446280992, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'tomatoes'}), confidence=0.05133928571428572, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.12568306010928962, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.14649681528662423, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), items_add=frozenset({'tomatoes'}), confidence=0.2555555555555556, lift=3.7366904916612524), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes', 'mineral water'}), items_add=frozenset({'spaghetti'}), confidence=0.5227272727272727, lift=3.0022796881525826), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.32857142857142857, lift=3.447012987012987)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'mineral water', 'spaghetti'}), support=0.004399413411545127, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.2, lift=3.3486607142857148), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.10749185667752444, lift=3.0311895373613185), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.12406015037593984, lift=3.0311895373613185), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07366071428571429, lift=3.3486607142857148)])
RelationRecord(items=frozenset({'ground beef', 'olive oil', 'mineral water', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'olive oil', 'mineral water', 'spaghetti'}), confidence=0.03120759837177748, lift=3.040106433593544), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'olive oil', 'spaghetti'}), confidence=0.0749185667752443, lift=3.267233542913416), OrderedStatistic(items_base=frozenset({'ground beef', 'olive oil'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.2169811320754717, lift=3.63298096361186), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'olive oil'}), confidence=0.05133928571428572, lift=3.63298096361186), OrderedStatistic(items_base=frozenset({'olive oil', 'spaghetti'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.13372093023255816, lift=3.267233542913416), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.2987012987012987, lift=3.0401064335935435)])
RelationRecord(items=frozenset({'ground beef', 'pancakes', 'mineral water', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'pancakes'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.21100917431192662, lift=3.53

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2990661861075), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'pancakes'}), confidence=0.05133928571428572, lift=3.532990661861075)])

RelationRecord(items=frozenset({'ground beef', 'tomatoes', 'mineral water', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomatoes', 'mineral water', 'spaghetti'}), confidence=0.03120759837177748, lift=3.344117076952898), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes', 'mineral water'}), confidence=0.01761102603369066, lift=3.221958689724723), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.0749185667752443, lift=3.579389613892405), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.0782312925170068, lift=3.2066280063938146), OrderedStatistic(items_base=frozenset({'ground beef', 'tomatoes'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.26136363636363635, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes'}), confidence=0.05133928571428572, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12568306010928962, lift=3.206628006393814), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.14649681528662423, lift=3.579389613892405), OrderedStatistic(items_base=frozenset({'ground beef', 'tomatoes', 'mineral water'}), items_add=frozenset({'spaghetti'}), confidence=0.5609756097560976, lift=3.221958689724723), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.32857142857142857, lift=3.344117076952898)])

RelationRecord(items=frozenset({'olive oil', 'milk', 'mineral water', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.05060728744939272, lift=3.216993755575379), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'olive oil', 'spaghetti'}), confidence=0.06944444444444445, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.19531250000000003, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.09398496240601503, lift=3.4057062947223127), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.12077294685990338, lift=3.4057062947223127), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'olive oil', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.14534883720930233, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.211864406779661, lift=3.216993755575379)])

RelationRecord(items=frozenset({'milk', 'shrimp', 'mineral water', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'shrimp', 'spaghetti'}), confidence=0.06388888888888889, lift=3.014028651292803), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.08646616541353383, lift=3.6643090777791936), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral w

ater'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.12994350282485875, lift=3.6643090777791936), OrderedStatistic(items_base=frozenset({'shrimp', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.14465408805031446, lift=3.014028651292802)])
RelationRecord(items=frozenset({'tomatoes', 'milk', 'mineral water', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.04873294346978558, lift=3.097845838702217), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.06944444444444445, lift=3.3178520877565467), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.09398496240601503, lift=3.8523563005875343), OrderedStatistic(items_base=frozenset({'tomatoes', 'milk'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.2380952380952381, lift=3.9865008503401365), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'tomatoes', 'milk'}), confidence=0.05580357142857143, lift=3.9865008503401365), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.1366120218579235, lift=3.8523563005875348), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.15923566878980894, lift=3.3178520877565467), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', 'spaghetti'}), items_add=frozenset({'tomatoes'}), confidence=0.211864406779661, lift=3.0978458387022165)])
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'eggs', 'mineral water', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'chocolate', 'mineral water', '0', 'eggs'}), confidence=0.0407055630936228, lift=3.023093354111531), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'chocolate', 'mineral water', 'eggs'}), confidence=0.0407055630936228, lift=3.023093354111531), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'mineral water', '0', 'eggs'}), confidence=0.17341040462427748, lift=3.4051084949913752), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'ground beef', '0', 'eggs'}), confidence=0.0759493670886076, lift=3.7979746835443042), OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.20000000000000004, lift=3.7979746835443047), OrderedStatistic(items_base=frozenset({'mineral water', 'eggs'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.07853403141361257, lift=3.405108494991375), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'mineral water', 'eggs'}), confidence=0.17341040462427748, lift=3.4051084949913752), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.0759493670886076, lift=3.7979746835443042), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'eggs'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.20000000000000004, lift=3.7979746835443047), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'eggs'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.07853403141361257, lift=3.405108494991375), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'eggs'}), items_add=frozenset({'ground beef', '0'}), confidence=0.29702970297029707, lift=3.023093354111531), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0', 'eggs'}), items_add=frozenset({'ground beef'}), confidence=0.29702970297029707, lift=3.023093354111531)])
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'eggs', '0', 'sp

aggetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'spaghetti', '0', 'eggs'}), confidence=0.13294797687861273, lift=3.6395721699506356), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'ground beef', '0', 'eggs'}), confidence=0.0782312925170068, lift=3.912086167800454), OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'chocolate', '0', 'spaghetti'}), confidence=0.15333333333333335, lift=3.912086167800454), OrderedStatistic(items_base=frozenset({'spaghetti', 'eggs'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.08394160583941607, lift=3.6395721699506356), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'spaghetti', 'eggs'}), confidence=0.13294797687861273, lift=3.6395721699506356), OrderedStatistic(items_base=frozenset({'chocolate', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.0782312925170068, lift=3.912086167800454), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'eggs'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.15333333333333335, lift=3.912086167800454), OrderedStatistic(items_base=frozenset({'spaghetti', '0', 'eggs'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.08394160583941607, lift=3.6395721699506356)])
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'mineral water', 'frozen vegetables', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'chocolate', 'mineral water', '0'}), confidence=0.03496503496503497, lift=3.1984478935698455), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), confidence=0.033921302578019, lift=3.4855300087358976), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'ground beef', 'chocolate', 'mineral water'}), confidence=0.03496503496503497, lift=3.1984478935698455), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), confidence=0.033921302578019, lift=3.4855300087358976), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'ground beef', 'mineral water', '0'}), confidence=0.14534883720930233, lift=3.5513408075145825), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.14450867052023122, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'ground beef', 'frozen vegetables', '0'}), confidence=0.06329113924050633, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.19685039370078738, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.09328358208955223, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.08143322475570033, lift=3.551340807514583), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.14534883720930233, lift=3.5513408075145825), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.14450867052023122, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'frozen vegetables'}), confidence=0.06329113924050633, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.19685039370078738, lift=3.738164058606598)]

'0'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.19685039370078738, lift=3.738164058606598), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.09328358208955223, lift=4.044625140194979), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.08143322475570033, lift=3.551340807514583), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), items_add=frozenset({'ground beef', '0'}), confidence=0.34246575342465757, lift=3.4855300087358976), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.30487804878048785, lift=3.1984478935698455), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), items_add=frozenset({'ground beef'}), confidence=0.34246575342465757, lift=3.4855300087358976), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.30487804878048785, lift=3.1984478935698455))
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'frozen vegetables', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'chocolate', '0', 'spaghetti'}), confidence=0.03216783216783217, lift=3.4969696969696975), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0', 'spaghetti'}), confidence=0.03120759837177748, lift=3.967596531978015), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'chocolate', 'frozen vegetables', '0'}), confidence=0.01761102603369066, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'ground beef', 'chocolate', 'spaghetti'}), confidence=0.03216783216783217, lift=3.4969696969696975), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'spaghetti'}), confidence=0.03120759837177748, lift=3.967596531978015), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'chocolate', 'frozen vegetables'}), confidence=0.01761102603369066, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.13372093023255816, lift=3.411703053314349), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.13294797687861273, lift=4.771496529026192), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'ground beef', 'frozen vegetables', '0'}), confidence=0.0782312925170068, lift=4.620574213937544), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'chocolate', '0', 'spaghetti'}), confidence=0.1811023622047244, lift=4.620574213937543), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.11004784688995216, lift=4.771496529026192), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.0782312925170068, lift=3.411703053314349), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.13372093023255816, lift=3.411703053314349), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.13294797687861273, lift=4.771496529026192), OrderedStatistic(items_base=frozenset({'chocolate', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'frozen vegetables'}), confidence=0.0782312925170068, li

ft=4.620574213937544), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', '0'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.1811023622047244, lift=4.620574213937543), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'chocolate'}), confidence=0.11004784688995216, lift=4.771496529026192), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.0782312925170068, lift=3.4117030533143495), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'ground beef'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5348837209302326, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3898305084745763, lift=3.967596531978015), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', 'spaghetti'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.33333333333333337, lift=3.4969696969696975), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'ground beef', '0'}), items_add=frozenset({'spaghetti'}), confidence=0.5348837209302326, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.3898305084745763, lift=3.967596531978015), OrderedStatistic(items_base=frozenset({'ground beef', 'chocolate', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.33333333333333337, lift=3.4969696969696975))

RelationRecord(items=frozenset({'chocolate', 'milk', 'mineral water', 'frozen vegetables', '0'}), support=0.003999466737768298, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), confidence=0.030864197530864203, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.17441860465116282, lift=3.63420542635659), OrderedStatistic(items_base=frozenset({'chocolate', 'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.1244813278008299, lift=3.4840837307239743), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.0759493670886076, lift=3.21862613173139), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.16949152542372883, lift=3.218626131731392), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'chocolate', 'milk', '0'}), confidence=0.11194029850746269, lift=3.484083730723974), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.08333333333333334, lift=3.6342054263565897), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.17441860465116282, lift=3.63420542635659), OrderedStatistic(items_base=frozenset({'chocolate', 'milk', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.1244813278008299, lift=3.4840837307239743), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.0759493670886076, lift=3.21862613173139), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.16949152542372883, lift=3.218626131731392), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'chocolate', 'milk'}), con

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confidence=0.11194029850746269, lift=3.484083730723974), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.08333333333333334, lift=3.6342054263565897), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), items_add=frozenset({'milk', '0'}), confidence=0.4109589041095891, lift=3.1714019956029094), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), items_add=frozenset({'milk'}), confidence=0.4109589041095891, lift=3.1714019956029094)))  
RelationRecord(items=frozenset({'chocolate', 'milk', 'frozen vegetables', '0', 'spaghetti'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'chocolate', 'milk', '0', 'spaghetti'}), confidence=0.03636363636363636, lift=3.326385809312639), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0', 'spaghetti'}), confidence=0.026748971193415638, lift=3.400746320708656), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'chocolate', 'milk', 'spaghetti'}), confidence=0.03636363636363636, lift=3.326385809312639), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'spaghetti'}), confidence=0.026748971193415638, lift=3.400746320708656), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.1511627906976744, lift=4.262677041440811), OrderedStatistic(items_base=frozenset({'chocolate', 'milk'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.1078838174273859, lift=3.87194504556374), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.08843537414965985, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'chocolate', '0', 'spaghetti'}), confidence=0.14689265536723162, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'chocolate', 'milk', '0'}), confidence=0.12440191387559808, lift=3.87194504556374), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.09774436090225563, lift=4.262677041440812), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.1511627906976744, lift=4.262677041440811), OrderedStatistic(items_base=frozenset({'chocolate', 'milk', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.1078838174273859, lift=3.87194504556374), OrderedStatistic(items_base=frozenset({'chocolate', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.08843537414965985, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.14689265536723162, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti', '0', 'spaghetti'}), items_add=frozenset({'chocolate', 'milk'}), confidence=0.12440191387559808, lift=3.87194504556374), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.09774436090225563, lift=4.262677041440812), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'spaghetti'}), items_add=frozenset({'milk', '0'}), confidence=0.44067796610169485, lift=3.400746320708655), OrderedStatistic(items_base=frozenset({'chocolate', 'milk', 'spaghetti'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.3170731707317073, lift=3.3263858093126384), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.44067796610169485, lift=3.
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4007463207086555), OrderedStatistic(items_base=frozenset({'chocolate', 'milk', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3170731707317073, lift=3.3263858093126384)])
RelationRecord(items=frozenset({'chocolate', 'shrimp', 'mineral water', 'frozen vegetables', '0'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'chocolate', 'shrimp', 'mineral water', '0'}), confidence=0.033566433566433566, lift=4.417224880382775), OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), confidence=0.04477611940298507, lift=4.600899611531384), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'chocolate', 'shrimp', 'mineral water'}), confidence=0.033566433566433566, lift=4.417224880382775), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), confidence=0.04485981308411215, lift=4.609499423889387), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate'}), items_add=frozenset({'shrimp', 'mineral water', '0'}), confidence=0.13953488372093026, lift=5.946881606765329), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'shrimp', '0'}), confidence=0.06075949367088608, lift=3.6460556962025317), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.1777777777777778, lift=4.975787728026535), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'chocolate', 'shrimp', '0'}), confidence=0.08955223880597014, lift=4.975787728026535), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shrimp'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.192, lift=3.6460556962025317), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'chocolate', '0'}), confidence=0.13559322033898305, lift=5.913283405597162), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', '0'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.13953488372093026, lift=5.913283405597163), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'shrimp'}), confidence=0.06075949367088608, lift=3.6460556962025317), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.1777777777777778, lift=4.975787728026535), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'chocolate', 'shrimp'}), confidence=0.08955223880597014, lift=4.975787728026535), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'shrimp', '0'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.192, lift=3.6460556962025317), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'chocolate'}), confidence=0.13636363636363635, lift=5.946881606765327), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water'}), items_add=frozenset({'shrimp', '0'}), confidence=0.32876712328767127, lift=4.609499423889387), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.4210526315789474, lift=4.417224880382776), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate', 'mineral water', '0'}), items_add=frozenset({'shrimp'}), confidence=0.32876712328767127, lift=4.600899611531385), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.4210526315789474, lift=4.417224880382776)])
RelationRecord(items=frozenset({'chocolate', 'mineral water', 'frozen vegetables', '0', 'spaghetti'}), support=0.0041327822956939075, ordered_statistics

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items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.18023
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5), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'chocolate',
'0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.180
2325581395349, lift=3.0176884343853825), OrderedStatistic(items_base=frozens
et({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'frozen vegeta
bles', 'chocolate'}), confidence=0.06919642857142858, lift=3.017688434385382
5)])
RelationRecord(items=frozenset({'ground beef', 'chocolate', 'milk', 'mineral
water', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStat
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er'}), items_add=frozenset({'ground beef', 'chocolate', '0'}), confidence=0.
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zenset({'ground beef', 'chocolate', '0'}), items_add=frozenset({'milk', 'min
eral water'}), confidence=0.14450867052023122, lift=3.0109987154784847), Ord
eredStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_ad
d=frozenset({'ground beef', 'chocolate'}), confidence=0.06944444444444445, l
ift=3.0109987154784843)])
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'0', 'spaghetti'}), support=0.0038661511798426876, ordered_statistics=[Order
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lift=3.700353825740822), OrderedStatistic(items_base=frozenset({'olive oil',
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fidence=0.0588235294117647, lift=3.707859614434008), OrderedStatistic(items_
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er', '0'}), confidence=0.09863945578231292, lift=3.5917211544812098), Order
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rozenset({'chocolate', '0', 'spaghetti'}), confidence=0.1400966183574879, li
ft=3.5743698445561796), OrderedStatistic(items_base=frozenset({'mineral wat
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fidence=0.06473214285714286, lift=3.947608159117306), OrderedStatistic(items
_base=frozenset({'olive oil', 'spaghetti'}), items_add=frozenset({'chocolat
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204884), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral wat
er', '0'}), items_add=frozenset({'olive oil', 'spaghetti'}), confidence=0.073
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et({'olive oil', 'chocolate', '0'}), items_add=frozenset({'mineral water',
'spaghetti'}), confidence=0.23577235772357724, lift=3.947608159117306), Orde
redStatistic(items_base=frozenset({'chocolate', '0', 'spaghetti'}), items_ad
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lift=3.5743698445561796), OrderedStatistic(items_base=frozenset({'olive oi
l', 'mineral water', '0'}), items_add=frozenset({'chocolate', 'spaghetti'}),
confidence=0.1407766990291262, lift=3.5917211544812098), OrderedStatistic(it
ems_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset
({'olive oil', 'chocolate'}), confidence=0.06473214285714286, lift=3.9476081
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59117306), OrderedStatistic(items_base=frozenset({'olive oil', '0', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.1686046511627907, lift=3.2017809832204884), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.2436974789915966, lift=3.707859614434008), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.2436974789915966, lift=3.700353825740822)])

RelationRecord(items=frozenset({'pancakes', 'chocolate', 'mineral water', '0', 'spaghetti'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'chocolate', 'pancakes'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.1879194630872483, lift=3.1463926174496644), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'chocolate', 'pancakes', '0'}), confidence=0.0625, lift=3.1463926174496644), OrderedStatistic(items_base=frozenset({'chocolate', '0', 'pancakes'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1879194630872483, lift=3.1463926174496644), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'chocolate', 'pancakes'}), confidence=0.0625, lift=3.1463926174496644)])

RelationRecord(items=frozenset({'chocolate', 'shrimp', 'mineral water', '0', 'spaghetti'}), support=0.0034662045060658577, ordered_statistics=[OrderedStatistic(items_base=frozenset({'shrimp'}), items_add=frozenset({'chocolate', 'mineral water', '0', 'spaghetti'}), confidence=0.04850746268656716, lift=3.0576006522011783), OrderedStatistic(items_base=frozenset({'shrimp', '0'}), items_add=frozenset({'chocolate', 'mineral water', 'spaghetti'}), confidence=0.048598130841121495, lift=3.0633157936071624), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water'}), items_add=frozenset({'shrimp', '0', 'spaghetti'}), confidence=0.06582278481012657, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.1925925925925926, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'chocolate', 'spaghetti'}), items_add=frozenset({'shrimp', 'mineral water', '0'}), confidence=0.08843537414965985, lift=3.7690553494124917), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water'}), items_add=frozenset({'chocolate', '0', 'spaghetti'}), confidence=0.14689265536723162, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'chocolate', 'shrimp', '0'}), confidence=0.05803571428571428, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'shrimp', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water', '0'}), confidence=0.16352201257861634, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', '0'}), items_add=frozenset({'shrimp', 'spaghetti'}), confidence=0.06582278481012657, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'shrimp', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1925925925925926, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'chocolate', '0', 'spaghetti'}), items_add=frozenset({'shrimp', 'mineral water'}), confidence=0.08843537414965985, lift=3.747761251393212), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water', '0'}), items_add=frozenset({'chocolate', 'spaghetti'}), confidence=0.1477272727272727, lift=3.7690553494124917), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'chocolate', 'shrimp'}), confidence=0.05803571428571428, lift=3.2246362433862434), OrderedStatistic(items_base=frozenset({'shrimp', '0', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water'}), confidence=0.16352201257861634, lift=3.10526231987899), OrderedStatistic(items_base=frozenset({'chocolate', 'mineral water', 'spaghetti'}), items_add=frozenset({'chocolate', 'mineral water', 'spaghetti'}), confidence=0.16352201257861634, lift=3.10526231987899)])

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aggetti'}), items_add=frozenset({'shrimp', '0'}), confidence=0.2184873949579
8317, lift=3.063315793607162), OrderedStatistic(items_base=frozenset({'choco
late', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'shrimp'}),
confidence=0.21848739495798317, lift=3.0576006522011783)])
RelationRecord(items=frozenset({'milk', 'eggs', 'mineral water', 'frozen veg
etables', '0'}), support=0.0037328356219170776, ordered_statistics=[OrderedS
tatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen vegeta
bles', 'mineral water', '0', 'eggs'}), confidence=0.02880658436213992, lift=
3.177620430888405), OrderedStatistic(items_base=frozenset({'milk', '0'}), it
ems_add=frozenset({'frozen vegetables', 'mineral water', 'eggs'}), confidenc
e=0.02880658436213992, lift=3.177620430888405), OrderedStatistic(items_base=
frozenset({'frozen vegetables', 'eggs'}), items_add=frozenset({'milk', 'mine
ral water', '0'}), confidence=0.17177914110429446, lift=3.5792092706203134),
OrderedStatistic(items_base=frozenset({'milk', 'eggs'}), items_add=frozenset
({'frozen vegetables', 'mineral water', '0'}), confidence=0.1212121212121212
2, lift=3.392582541836273), OrderedStatistic(items_base=frozenset({'mineral
water', 'eggs'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), c
onfidence=0.07329842931937172, lift=3.106279764545804), OrderedStatistic(it
ems_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'mine
ral water', '0', 'eggs'}), confidence=0.1581920903954802, lift=3.10627976454
5804), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral
water'}), items_add=frozenset({'milk', '0', 'eggs'}), confidence=0.104477611
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({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0',
'eggs'}), confidence=0.07777777777777778, lift=3.5792092706203134), OrderedS
tatistic(items_base=frozenset({'frozen vegetables', '0', 'eggs'}), items_add
=frozenset({'milk', 'mineral water'}), confidence=0.17177914110429446, lift=
3.5792092706203134), OrderedStatistic(items_base=frozenset({'milk', '0', 'eg
gs'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confiden
ce=0.12121212121212122, lift=3.392582541836273), OrderedStatistic(items_base
=frozenset({'mineral water', '0', 'eggs'}), items_add=frozenset({'frozen veg
etables', 'milk'}), confidence=0.07329842931937172, lift=3.106279764545804),
OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), i
tems_add=frozenset({'mineral water', 'eggs'}), confidence=0.158192090395480
2, lift=3.106279764545804), OrderedStatistic(items_base=frozenset({'frozen v
egetables', 'mineral water', '0'}), items_add=frozenset({'milk', 'eggs'}), c
onfidence=0.10447761194029849, lift=3.3925825418362727), OrderedStatistic(it
ems_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'fr
ozen vegetables', 'eggs'}), confidence=0.07777777777777778, lift=3.579209270
6203134), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'miner
al water', 'eggs'}), items_add=frozenset({'milk', '0'}), confidence=0.411764
705882353, lift=3.177620430888405), OrderedStatistic(items_base=frozenset
({'frozen vegetables', 'mineral water', '0', 'eggs'}), items_add=frozenset
({'milk'}), confidence=0.411764705882353, lift=3.177620430888405)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'eggs', 'mineral wate
r', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStatisti
c(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'mil
k', 'mineral water', '0'}), confidence=0.16666666666666669, lift=3.472685185
1851857), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}),
items_add=frozenset({'ground beef', '0', 'eggs'}), confidence=0.0694444444444
44445, lift=3.4726851851851857), OrderedStatistic(items_base=frozenset({'gro
und beef', '0', 'eggs'}), items_add=frozenset({'milk', 'mineral water'}), co
nfidence=0.16666666666666669, lift=3.4726851851851857), OrderedStatistic(it
ems_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'gro
und beef', 'eggs'}), confidence=0.069444444444444445, lift=3.472685185185185
7)])
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RelationRecord(items=frozenset({'ground beef', 'eggs', 'mineral water', '0', 'spaghetti'}), support=0.0038661511798426876, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'eggs'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.19333333333333336, lift=3.237038690476191), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', '0', 'eggs'}), confidence=0.06473214285714286, lift=3.237038690476191), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'eggs'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.19333333333333336, lift=3.237038690476191), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'eggs'}), confidence=0.06473214285714286, lift=3.237038690476191)])

RelationRecord(items=frozenset({'milk', 'mineral water', 'frozen smoothie', '0', 'spaghetti'}), support=0.003199573390214638, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen smoothie'}), items_add=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), confidence=0.05052631578947369, lift=3.2118465655664585), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'frozen smoothie', 'mineral water', '0', 'spaghetti'}), confidence=0.02469135802469136, lift=3.6315662067296057), OrderedStatistic(items_base=frozenset({'frozen smoothie', '0'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.05063291139240506, lift=3.218622613173139), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen smoothie', 'mineral water', 'spaghetti'}), confidence=0.02469135802469136, lift=3.6315662067296057), OrderedStatistic(items_base=frozenset({'milk', 'frozen smoothie'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.22429906542056074, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.15789473684210528, lift=4.452512861100119), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.20512820512820515, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen smoothie', '0', 'spaghetti'}), confidence=0.06666666666666668, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'frozen smoothie', 'mineral water', '0'}), confidence=0.09022556390977443, lift=4.481999701239855), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'milk', 'frozen smoothie', '0'}), confidence=0.053571428571428575, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'milk', 'frozen smoothie', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.22429906542056074, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.15894039735099338, lift=4.481999701239855), OrderedStatistic(items_base=frozenset({'frozen smoothie', '0', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.20512820512820515, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'frozen smoothie', 'spaghetti'}), confidence=0.06666666666666668, lift=4.274074074074075), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'frozen smoothie', 'mineral water'}), confidence=0.09022556390977443, lift=4.452512861100119), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'milk', 'frozen smoothie'}), confidence=0.053571428571428575, lift=3.7555073431241657), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water', 'spaghetti'}), items_add=frozenset({'milk', '0'}), confidence=0.4705882352941177, lift=3.631566206729606), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', 'spag

hetti'}), items_add=frozenset({'frozen smoothie', '0'}), confidence=0.2033898305084746, lift=3.218622613173139), OrderedStatistic(items_base=frozenset({'frozen smoothie', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'milk'}), confidence=0.4705882352941177, lift=3.631566206729606), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'frozen smoothie'}), confidence=0.2033898305084746, lift=3.211846565566459)])

RelationRecord(items=frozenset({'ground beef', 'milk', 'mineral water', 'frozen vegetables', '0'}), support=0.0037328356219170776, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'milk', 'mineral water', '0'}), confidence=0.03916083916083916, lift=3.5391018619934282), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water', '0'}), confidence=0.037991858887381276, lift=3.433457030292132), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'ground beef', 'frozen vegetables', 'mineral water', '0'}), confidence=0.02880658436213992, lift=3.1315679608755294), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'ground beef', 'milk', 'mineral water'}), confidence=0.03916083916083916, lift=3.5391018619934282), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water'}), confidence=0.037991858887381276, lift=3.433457030292132), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'ground beef', 'frozen vegetables', 'mineral water'}), confidence=0.02880658436213992, lift=3.1315679608755294), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.22047244094488186, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'ground beef', 'mineral water', '0'}), confidence=0.1581920903954802, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'ground beef', 'milk', '0'}), confidence=0.10447761194029849, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.1696969696969697, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.09120521172638436, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'ground beef', 'frozen vegetables', '0'}), confidence=0.07777777777777778, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', '0'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.22047244094488186, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'ground beef', 'mineral water'}), confidence=0.1581920903954802, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.10447761194029849, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.1696969696969697, lift=4.749615558570782), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.09120521172638436, lift=3.865142899206831), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'frozen vegetables'}), confidence=0.07777777777777778, lift=4.593788276465442), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', 'mineral water'}), items_add=frozenset({'milk', '0'}), confidence=0.40579710144927533, lift=3.1315679608755294), Order

edStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water'}), items_add=frozenset({'ground beef', '0'}), confidence=0.3373493975903614, lift=3.4334570302921317), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.3373493975903614, lift=3.539101861993428), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', 'mineral water', '0'}), items_add=frozenset({'milk'}), confidence=0.40579710144927533, lift=3.1315679608755294), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water', '0'}), items_add=frozenset({'ground beef'}), confidence=0.3373493975903614, lift=3.4334570302921317), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.3373493975903614, lift=3.539101861993428)])

RelationRecord(items=frozenset({'ground beef', 'milk', 'frozen vegetables', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'ground beef', 'milk', '0', 'spaghetti'}), confidence=0.03216783216783217, lift=3.3053549190535496), OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'frozen vegetables', 'milk', '0', 'spaghetti'}), confidence=0.03120759837177748, lift=3.77561605462424), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'milk', 'frozen vegetables', '0'}), confidence=0.01761102603369066, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'ground beef', 'milk', 'spaghetti'}), confidence=0.03216783216783217, lift=3.3053549190535496), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'frozen vegetables', 'milk', 'spaghetti'}), confidence=0.03120759837177748, lift=3.77561605462424), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'milk', 'frozen vegetables'}), confidence=0.01761102603369066, lift=3.0721001460165964), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.1811023622047244, lift=5.1069504469836), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.12994350282485875, lift=3.315327260847842), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'ground beef', 'milk', '0'}), confidence=0.11004784688995216, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', 'milk'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.1393939393939394, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.0782312925170068, lift=3.315327260847842), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'ground beef', 'frozen vegetables', '0'}), confidence=0.08646616541353383, lift=5.1069504469836), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'ground beef', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.1811023622047244, lift=5.1069504469836), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'frozen vegetables', 'milk', '0'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12994350282485875, lift=3.315327260847842), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.11004784688995216, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', 'milk', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.1393939393939394, lift=5.002841815282007), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.0782312925170068, lift=3.315327260847842), Ordered

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RelationRecord(items=frozenset({'olive oil', 'milk', 'mineral water', 'frozen vegetables', '0'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'olive oil', 'milk', 'mineral water', '0'}), confidence=0.03496503496503497, lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'milk'}), items_add=frozenset({'olive oil', 'frozen vegetables', 'mineral water', '0'}), confidence=0.025720164609053502, lift=3.9372847904593944), OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water', '0'}), confidence=0.05060728744939272, lift=4.573557387444516), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'olive oil', 'milk', 'mineral water'}), confidence=0.03496503496503497, lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'olive oil', 'frozen vegetables', 'mineral water'}), confidence=0.025720164609053502, lift=3.9372847904593944), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'frozen vegetables', 'milk', 'mineral water'}), confidence=0.05070993914807302, lift=4.582834380116816), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'olive oil', 'mineral water', '0'}), confidence=0.14124293785310735, lift=5.143025615709505), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'olive oil', 'milk', '0'}), confidence=0.09328358208955223, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.29411764705882354, lift=6.12826797385621), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'olive oil', 'frozen vegetables', '0'}), confidence=0.06944444444444445, lift=6.128267973856209), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.19531250000000003, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.12077294685990338, lift=5.118180081334097), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.14124293785310735, lift=5.118180081334097), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.09328358208955223, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil', '0'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.29411764705882354, lift=6.12826797385621), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'olive oil', 'frozen vegetables'}), confidence=0.06944444444444445, lift=6.128267973856209), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.19531250000000003, lift=5.4665636660447765), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'milk'}), confidence=0.12135922330097088, lift=5.143025615709505), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', 'mineral water'}), items_add=frozenset({'olive oil', '0'}), confidence=0.30120481927710846, lift=4.582834380116816), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'olive oil', 'mineral water'}), items_add=frozenset({'milk', '0'}), confidence=0.5102040816326531, lift=3.937284790459394), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', 'mineral water'}), items_add=

frozenset({'frozen vegetables', '0'}), confidence=0.39062500000000006, lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'frozen vegetable s', 'milk', 'mineral water', '0'}), items_add=frozenset({'olive oil'}), conf idence=0.30120481927710846, lift=4.573557387444516), OrderedStatistic(items_ base=frozenset({'frozen vegetables', 'olive oil', 'mineral water', '0'}), it ems_add=frozenset({'milk'}), confidence=0.5102040816326531, lift=3.937284790 459394), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', 'minera l water', '0'}), items_add=frozenset({'frozen vegetables'}), confidence=0.39 062500000000006, lift=4.098011363636364)])

RelationRecord(items=frozenset({'milk', 'soup', 'mineral water', 'frozen veg etables', '0'}), support=0.0030662578322890282, ordered_statistics=[OrderedS tatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset ({'milk', 'soup', 'mineral water', '0'}), confidence=0.03216783216783217, li ft=3.7701704545454553), OrderedStatistic(items_base=frozenset({'milk'}), ite ms_add=frozenset({'frozen vegetables', 'soup', 'mineral water', '0'}), confi dence=0.02366255144032922, lift=4.670863114576566), OrderedStatistic(items_b ase=frozenset({'mineral water'}), items_add=frozenset({'frozen vegetables', 'milk', 'soup', '0'}), confidence=0.012863534675615214, lift=3.2163124533929 905), OrderedStatistic(items_base=frozenset({'soup'}), items_add=frozenset ({'frozen vegetables', 'milk', 'mineral water', '0'}), confidence=0.06068601 583113457, lift=5.484407286136632), OrderedStatistic(items_base=frozenset ({'frozen vegetables', '0'}), items_add=frozenset({'milk', 'soup', 'mineral water'}), confidence=0.03216783216783217, lift=3.7701704545454553), OrderedS tatistic(items_base=frozenset({'milk', '0'}), items_add=frozenset({'frozen v egetables', 'soup', 'mineral water'}), confidence=0.02366255144032922, lift= 4.670863114576566), OrderedStatistic(items_base=frozenset({'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'milk', 'soup'}), confidenc e=0.012870733072188025, lift=3.2181122924827457), OrderedStatistic(items_bas e=frozenset({'soup', '0'}), items_add=frozenset({'frozen vegetables', 'mil k', 'mineral water'}), confidence=0.06068601583113457, lift=5.48440728613663 2), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), it ems_add=frozenset({'soup', 'mineral water', '0'}), confidence=0.129943502824 85875, lift=5.634139969302113), OrderedStatistic(items_base=frozenset({'froz en vegetables', 'mineral water'}), items_add=frozenset({'milk', 'soup', '0'}), confidence=0.08582089552238806, lift=5.646864362398533), OrderedStati stic(items_base=frozenset({'frozen vegetables', 'soup'}), items_add=frozen se t({'milk', 'mineral water', '0'}), confidence=0.3833333333333333, lift=7.987 175925925926), OrderedStatistic(items_base=frozenset({'milk', 'mineral wate r'}), items_add=frozenset({'frozen vegetables', 'soup', '0'}), confidence=0. 06388888888888889, lift=7.987175925925926), OrderedStatistic(items_base=froze nset({'milk', 'soup'}), items_add=frozenset({'frozen vegetables', 'mineral w ater', '0'}), confidence=0.20175438596491227, lift=5.646864362398533), Order edStatistic(items_base=frozenset({'soup', 'mineral water'}), items_add=froze nset({'frozen vegetables', 'milk', '0'}), confidence=0.13294797687861273, li ft=5.6341399693021135), OrderedStatistic(items_base=frozenset({'frozen veget ables', 'milk', '0'}), items_add=frozenset({'soup', 'mineral water'}), confi dence=0.12994350282485875, lift=5.634139969302113), OrderedStatistic(items_b ase=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozen set({'milk', 'soup'}), confidence=0.08582089552238806, lift=5.64686436239853 3), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'soup', '0'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.38333333 33333333, lift=7.987175925925926), OrderedStatistic(items_base=frozenset({'m ilk', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'sou p'}), confidence=0.06388888888888889, lift=7.987175925925926), OrderedStatist ic(items_base=frozenset({'milk', 'soup', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.20175438596491227, lift=5.64686

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RelationRecord(items=frozenset({'milk', 'mineral water', 'frozen vegetables', '0', 'spaghetti'}), support=0.004532728969470737, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), confidence=0.04755244755244755, lift=3.0228043143297376), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.04755244755244755, lift=3.0228043143297376), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.19209039548022597, lift=3.216227804681194), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.12686567164179102, lift=3.5775165525754677), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.16267942583732056, lift=3.389606592238171), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.09444444444444444, lift=3.389606592238171), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.12781954887218044, lift=3.577516552575468), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'milk', '0'}), confidence=0.07589285714285714, lift=3.216227804681194), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'milk', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.19209039548022597, lift=3.216227804681194), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.12686567164179102, lift=3.5775165525754677), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.16267942583732056, lift=3.389606592238171), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.09444444444444444, lift=3.389606592238171), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.12781954887218044, lift=3.577516552575468), OrderedStatistic(it

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r', 'spaghetti'}), items_add=frozenset({'frozen vegetables', '0'}), confiden
ce=0.28813559322033894, lift=3.0228043143297376), OrderedStatistic(items_bas
e=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), items_add=frozenset
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imp'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0', 'spa
ghetti'}), confidence=0.046641791044776115, lift=3.8873341625207294), Ordere
dStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=froze
nset({'shrimp', 'mineral water', 'spaghetti'}), confidence=0.034965034965034
97, lift=4.098011363636364), OrderedStatistic(items_base=frozenset({'shrim
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atistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_
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items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.1
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nset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetable
s', 'shrimp', '0'}), confidence=0.05580357142857143, lift=3.348660714285714
3), OrderedStatistic(items_base=frozenset({'shrimp', 'spaghetti'}), items_ad
d=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.15723
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etables', 'mineral water'}), confidence=0.15723270440251574, lift=4.40075565
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al water', 'spaghetti'}), items_add=frozenset({'shrimp', '0'}), confidence=
0.2777777777777778, lift=3.89460020768432), OrderedStatistic(items_base=froz
en set({'shrimp', 'mineral water', 'spaghetti'}), items_add=frozenset({'froze
n vegetables', '0'}), confidence=0.39062500000000006, lift=4.09801136363636
4), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral wat
er', '0', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.27777
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77777777778, lift=3.8873341625207294), OrderedStatistic(items_base=frozenset({'shrimp', 'mineral water', '0', 'spaghetti'})), items_add=frozenset({'frozen vegetables'}), confidence=0.39062500000000006, lift=4.098011363636364)]) RelationRecord(items=frozenset({'tomatoes', 'mineral water', 'frozen vegetables', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'frozen vegetables'}), items_add=frozenset({'tomatoes', 'mineral water', '0', 'spaghetti'}), confidence=0.03216783216783217, lift=3.4470129870129873), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'frozen vegetables', 'tomatoes', 'mineral water', '0'}), confidence=0.01761102603369066, lift=3.0022796881525826), OrderedStatistic(items_base=frozenset({'tomatoes'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0', 'spaghetti'}), confidence=0.04483430799220273, lift=3.736690491661252), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0'}), items_add=frozenset({'tomatoes', 'mineral water', 'spaghetti'}), confidence=0.03216783216783217, lift=3.4470129870129873), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'tomatoes', 'mineral water'}), confidence=0.01761102603369066, lift=3.0022796881525826), OrderedStatistic(items_base=frozenset({'tomatoes', '0'}), items_add=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), confidence=0.04483430799220273, lift=3.736690491661252), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water'}), items_add=frozenset({'tomatoes', '0', 'spaghetti'}), confidence=0.08582089552238806, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water', '0'}), confidence=0.11004784688995216, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.1900826446280992, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'tomatoes', '0'}), confidence=0.05133928571428572, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'frozen vegetables', '0', 'spaghetti'}), confidence=0.12568306010928962, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water', '0'}), confidence=0.14649681528662423, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', '0'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.08582089552238806, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', '0', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.11004784688995216, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.1900826446280992, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'tomatoes'}), confidence=0.05133928571428572, lift=3.1826114226682414), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', '0'}), items_add=frozenset({'frozen vegetables', 'spaghetti'}), confidence=0.12568306010928962, lift=4.510759013778858), OrderedStatistic(items_base=frozenset({'tomatoes', '0', 'spaghetti'}), items_add=frozenset({'frozen vegetables', 'mineral water'}), confidence=0.14649681528662423, lift=4.1002709383021205), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'mineral water', 'spaghetti'}), items_add=frozenset({'tomatoes', '0'}), confidence=0.2555555555555556, lift=3.7366904916612524), OrderedStatistic(items_base=frozenset({'frozen vegetables', 'tomatoes', 'mineral water'}), items_add=frozenset({'0', 'spaghetti'}), confidence=0.5227272727272727, lift=3.0022796881525826), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', 'sp
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aggetti'}), items_add=frozenset({'frozen vegetables', '0'}), confidence=0.32
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zenset({'tomatoes'}), confidence=0.2555555555555556, lift=3.736690491661252
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et({'tomatoes', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'f
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7)])
RelationRecord(items=frozenset({'ground beef', 'milk', 'mineral water', '0',
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ineral water', '0', 'spaghetti'}), confidence=0.2, lift=3.3486607142857148),
OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), ite
ms_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.1074918566775244
4, lift=3.0311895373613185), OrderedStatistic(items_base=frozenset({'milk',
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onfidence=0.12406015037593984, lift=3.0311895373613185), OrderedStatistic(it
ems_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'gr
ound beef', 'milk', '0'}), confidence=0.07366071428571429, lift=3.3486607142
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ef', 'mineral water'}), confidence=0.12406015037593984, lift=3.0311895373613
185), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghettt
i'}), items_add=frozenset({'ground beef', 'milk'}), confidence=0.07366071428
571429, lift=3.3486607142857148)])
RelationRecord(items=frozenset({'olive oil', 'ground beef', 'mineral water',
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edStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'oli
ve oil', 'mineral water', '0', 'spaghetti'}), confidence=0.0312075983717774
8, lift=3.040106433593544), OrderedStatistic(items_base=frozenset({'ground b
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tic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozen
set({'olive oil', '0', 'spaghetti'}), confidence=0.0749185667752443, lift=3.
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ve oil'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confide
nce=0.2169811320754717, lift=3.63298096361186), OrderedStatistic(items_base=
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6), OrderedStatistic(items_base=frozenset({'olive oil', 'spaghetti'}), items
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dd=frozenset({'mineral water', 'spaghetti'}), confidence=0.2169811320754717,
lift=3.63298096361186), OrderedStatistic(items_base=frozenset({'mineral wate
r', '0', 'spaghetti'}), items_add=frozenset({'olive oil', 'ground beef'}), c
onfidence=0.05133928571428572, lift=3.63298096361186), OrderedStatistic(item
s_base=frozenset({'olive oil', '0', 'spaghetti'}), items_add=frozenset({'gro

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und beef', 'mineral water'})), confidence=0.13372093023255816, lift=3.267233542913416), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', '0'}), confidence=0.2987012987012987, lift=3.0401064335935435), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'ground beef'}), confidence=0.2987012987012987, lift=3.0401064335935435)])
RelationRecord(items=frozenset({'pancakes', 'ground beef', 'mineral water', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef', 'pancakes'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.21100917431192662, lift=3.532990661861075), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'pancakes', '0'}), confidence=0.05133928571428572, lift=3.532990661861075), OrderedStatistic(items_base=frozenset({'ground beef', 'pancakes', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.21100917431192662, lift=3.532990661861075), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'pancakes'}), confidence=0.05133928571428572, lift=3.532990661861075)])
RelationRecord(items=frozenset({'tomatoes', 'ground beef', 'mineral water', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'ground beef'}), items_add=frozenset({'tomatoes', 'mineral water', '0', 'spaghetti'}), confidence=0.03120759837177748, lift=3.344117076952898), OrderedStatistic(items_base=frozenset({'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes', 'mineral water', '0'}), confidence=0.01761102603369066, lift=3.221958689724723), OrderedStatistic(items_base=frozenset({'ground beef', '0'}), items_add=frozenset({'tomatoes', 'mineral water', 'spaghetti'}), confidence=0.03120759837177748, lift=3.344117076952898), OrderedStatistic(items_base=frozenset({'0', 'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes', 'mineral water'}), confidence=0.01761102603369066, lift=3.221958689724723), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water'}), items_add=frozenset({'tomatoes', '0', 'spaghetti'}), confidence=0.0749185667752443, lift=3.579389613892405), OrderedStatistic(items_base=frozenset({'ground beef', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water', '0'}), confidence=0.0782312925170068, lift=3.2066280063938146), OrderedStatistic(items_base=frozenset({'ground beef', 'tomatoes'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.26136363636363635, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes', '0'}), confidence=0.05133928571428572, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water'}), items_add=frozenset({'ground beef', '0', 'spaghetti'}), confidence=0.12568306010928962, lift=3.206628006393814), OrderedStatistic(items_base=frozenset({'tomatoes', 'spaghetti'}), items_add=frozenset({'ground beef', 'mineral water', '0'}), confidence=0.14649681528662423, lift=3.579389613892405), OrderedStatistic(items_base=frozenset({'ground beef', 'mineral water', '0'}), items_add=frozenset({'tomatoes', 'spaghetti'}), confidence=0.0749185667752443, lift=3.579389613892405), OrderedStatistic(items_base=frozenset({'ground beef', '0', 'spaghetti'}), items_add=frozenset({'tomatoes', 'mineral water'}), confidence=0.0782312925170068, lift=3.2066280063938146), OrderedStatistic(items_base=frozenset({'ground beef', 'tomatoes', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.26136363636363635, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'ground beef', 'tomatoes'}), confidence=0.05133928571428572, lift=4.3760907061688314), OrderedStatistic(items_base=frozenset({'tomatoes', 'mineral water', '0'}), items_add=frozenset({'ground beef', 'spaghetti'}), confidence=0.12568306010928962, lift=

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RelationRecord(items=frozenset({'olive oil', 'milk', 'mineral water', '0', 'spaghetti'}), support=0.003332888948140248, ordered_statistics=[OrderedStatistic(items_base=frozenset({'olive oil'}), items_add=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), confidence=0.05060728744939272, lift=3.216993755575379), OrderedStatistic(items_base=frozenset({'olive oil', '0'}), items_add=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.05070993914807302, lift=3.223519097878777), OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'olive oil', '0', 'spaghetti'}), confidence=0.06944444444444445, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'olive oil', 'milk'}), items_add=frozenset({'mineral water', '0', 'spaghetti'}), confidence=0.19531250000000003, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_add=frozenset({'olive oil', 'mineral water', '0'}), confidence=0.09398496240601503, lift=3.4222388495510616), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water'}), items_add=frozenset({'milk', '0', 'spaghetti'}), confidence=0.12077294685990338, lift=3.4057062947223127), OrderedStatistic(items_base=frozenset({'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil', 'milk', '0'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'olive oil', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water', '0'}), confidence=0.14534883720930233, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0'}), items_add=frozenset({'olive oil', 'spaghetti'}), confidence=0.06944444444444445, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'olive oil', 'milk', '0'}), items_add=frozenset({'mineral water', 'spaghetti'}), confidence=0.19531250000000003, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'olive oil', 'mineral water'}), confidence=0.09398496240601503, lift=3.4057062947223127), OrderedStatistic(items_base=frozenset({'olive oil', 'mineral water', '0'}), items_add=frozenset({'milk', 'spaghetti'}), confidence=0.12135922330097088, lift=3.422238849551062), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'olive oil', 'milk'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'olive oil', '0', 'spaghetti'}), items_add=frozenset({'milk', 'mineral water'}), confidence=0.14534883720930233, lift=3.0285045219638245), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', 'spaghetti'}), items_add=frozenset({'olive oil', '0'}), confidence=0.211864406779661, lift=3.223519097878777), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'olive oil'}), confidence=0.211864406779661, lift=3.216993755575379)])

RelationRecord(items=frozenset({'milk', 'shrimp', 'mineral water', '0', 'spaghetti'}), support=0.0030662578322890282, ordered_statistics=[OrderedStatistic(items_base=frozenset({'milk', 'mineral water'}), items_add=frozenset({'shrimp', '0', 'spaghetti'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'milk', '0', 'spaghetti'}), items_add=frozenset({'mineral water', 'shrimp'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'mineral water', '0', 'spaghetti'}), items_add=frozenset({'milk', 'shrimp'}), confidence=0.05580357142857143, lift=3.2701764787946432), OrderedStatistic(items_base=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), items_add=frozenset({'shrimp'}), confidence=0.05580357142857143, lift=3.2701764787946432)])

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rimp', '0', 'spaghetti'}), confidence=0.06388888888888889, lift=3.01402865129
2803), OrderedStatistic(items_base=frozenset({'milk', 'spaghetti'}), items_a
dd=frozenset({'shrimp', 'mineral water', '0'}), confidence=0.086466165413533
83, lift=3.6851290157211207), OrderedStatistic(items_base=frozenset({'shrim
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dd=frozenset({'milk', 'mineral water', 'spaghetti'}), confidence=0.048732943
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tic(items_base=frozenset({'milk', 'mineral water', '0', 'spaghetti'}), items
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```
_add=frozenset({'tomatoes'}), confidence=0.211864406779661, lift=3.097845838  
7022165)])
```

This notebook was converted with convert.ploomber.io