

INF 553 HW2 Task2 Explanation

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After finding frequent itemsets, map items in each frequent itemset to their corresponding category and compute the frequency of such category itemsets, and here is the result (strings in tuple are the category number, and the numbers are the frequency):

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1 ('120103', '120103') -> 1975
2 ('120103', '120103', '120103') -> 949
3 ('110411', '110411') -> 654
4 ('120103', '120103', '120103', '120103') -> 235
5 ('110411', '110411', '110411') -> 175
6 ('100505', '100505') -> 116
7 ('110106', '130315') -> 94
8 ('100205', '100205') -> 79
9 ('110136', '110136') -> 74
10 ('110106', '500201') -> 69
11 ('500201', '500203') -> 66
12 ('110401', '110401') -> 64
13 ('110106', '500210') -> 64
14 ('110402', '110402') -> 64
15 ('120106', '120106') -> 63
16 ('100512', '100512') -> 61
17 ('500311', '500311') -> 59
18 ('100201', '100201') -> 56
19 ('100324', '100324') -> 54
20 ('120103', '130315') -> 52
21 ('500203', '500210') -> 51
22 ('100312', '100312') -> 50
```

From the result above, it's easy to find that the category in the top frequent sets are always the same category, that is, people tend to purchase products which belong to the same category together. For example,

1. people tend to purchase products from category 120103 at the same time;
2. people tend to purchase products from category 110411 at the same time;
3. people tend to purchase products from category 100505 at the same time.

These can be explained by the fact that the Ta Feng grocery has already put associated products, that is, always be purchased together, into the same product category. This makes it more convenient for customers to put them in basket and improves company sales.