***Market Basket Analysis:***

According to the name Market Basket Analysis refers to the Basket of Products a customer buy together, example:

**Burger + fries**

**Bread + Butter + Milk + Eggs**

**Soap + Shampoo + Conditioner**

Further we can term Grocery as one basket with different products in it and Hardware as another basket. It is relatively less likely that customer will purchase a grocery item with Hardware or vice versa.

Hence *like clusters the baskets are* ***homogenous within themselves*** *and* ***heterogeneous among each other’s.***

So once it is known that customer who buy one product is likely to buy another of the same basket, it become possible for the company to market the right products together, or to make the buyers of one product the target prospective buyers for another.

**In my work Experience** I advised my Organization to prepare the marketing strategies for same type of Gem Stones. we found that the customers willing to Purchase high end Sapphires usually attracted towards the same quality of gem stone in Emerald or Ruby or both thus ended up by giving us comparatively more sales.

Some strategies could be like:

1. A catalogue with same basket products on one page like Sweaters with Jackets (which can be on discounts for marketing)
2. Include Offerings on Telephonic orders like in a pizza shop a CR asks do you need coke or extra cheese or any add-ons.
3. While buying a product on Amazon different other products of same category are displayed.

All these are the examples of product baskets.

***Analysis in R:***

*Get the rules*

rules <- apriori(Groceries, parameter = list(supp = 0.001, conf = 0.8))

*# Show the top 5 rules, but only 2 digits*

options(digits=2)

inspect(rules[1:5])

lhs rhs support confidence lift

1 {liquor,red/blush wine} => {bottled beer} 0.0019 0.90 11.2

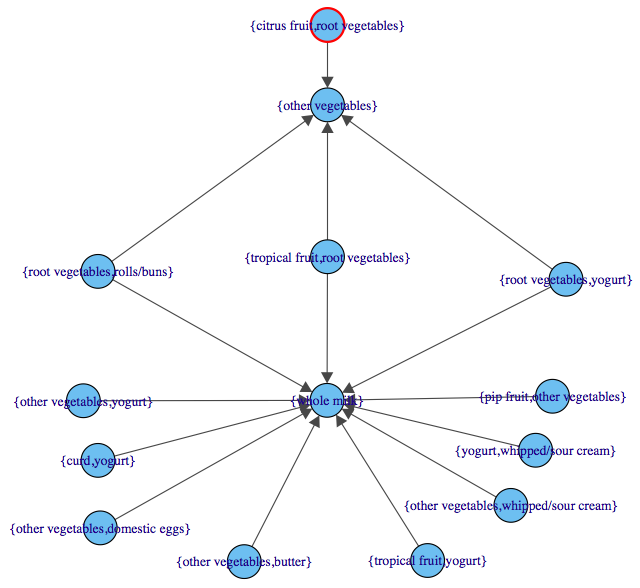
2 {curd,cereals} => {whole milk} 0.0010 0.91 3.6

3 {yogurt,cereals} => {whole milk} 0.0017 0.81 3.2

4 {butter,jam} => {whole milk} 0.0010 0.83 3.3

5 {soups,bottled beer} => {whole milk} 0.0011 0.92 3.6

If someone buys yogurt and cereals, they are 81% likely to buy whole milk too. Since Whole milk is Summing up with various other Products it would be wise to Market other products with Whole Milk.



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