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Course: Marketing Analytics

Quiz: 8

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1. What are the differences between content-based and collaborative filtering?

Answer:
 Collaborative filtering is based on the user item associations. The examples of this metric are Pearson correlation or loglikelihood ratio.
If the filtering is based on the attributes like price, color then it is termed
as content based filtering. Content based filtering depends on the attributes.
Ex: categories, tags.
Collaborative filtering is based upon the preference expressed by users for items.

2. How could you explain the matrix bubble chart in this case study?

Answer: An item in the antecedent provides the label at the top of the matrix. An item in the right hand side provides the label on the right hand side. The size of each bubble Is represented as support and Lift is reflected in its color intensity.
Lift=y in the presence of x/y in the absence of x
Lift explains the change in the probability of y over presence of x and absence of x.
Support:
 The frequency of appearing of the items in the database is called Support. Confidence is the measure of the statements being true.

vegetables} − 19 rules {sausage} − 8 rules {frozen foods, +7 items} − 35 rules {dairy

produce, +2 items} − 53 rules {bags, +4 items} − 12 rules {non −alc. drinks, +4 items} −

53 rules.

3. Suppose your client is a dairy producer, how would you like to guide his/her by the market basket model?
Answer:
Market basket analysis: It is a technique in which if you buy a certain group of items, the likelihood of buying another set of items.

I would guide him to check the association rules and their application to market basket analysis. Association rules like what goes with what? , what products are purchased or ordered together. Market basket analysis is an efficient survey which studies the consumer preferences and lifestyles.

I would suggest him to build the recommendation engine by the association rules, frequent item sets and collaborative filtering.

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       lhs                    rhs            support confidence    lift
[1]  {}                    => {dairy produce} 0.44300966  0.4430097 1.0000000
[2]  {sweetener}           => {dairy produce} 0.02572445  0.6710875 1.5148372
[3]  {poultry}             => {dairy produce} 0.03263854  0.6471774 1.4608653
[4]  {pork}                => {dairy produce} 0.03446873  0.5978836 1.3495949
[5]  {staple foods}        => {dairy produce} 0.03619725  0.7148594 1.6136430
[6]  {coffee}              => {dairy produce} 0.03324860  0.5125392 1.1569481
[7]  {eggs}                => {dairy produce} 0.04494154  0.7083333 1.5989117
[8]  {games/books/hobby}   => {dairy produce} 0.04758516  0.5373134 1.2128707
[9]  {long-life bakery products} => {dairy produce} 0.05002542  0.6007326 1.3560260
[10] {perfumery}           => {dairy produce} 0.04900864  0.6187420 1.3966783
[11] {beef}                => {dairy produce} 0.04921200  0.6004963 1.3554925
[12] {bags}                => {dairy produce} 0.04707677  0.4758479 1.0741253
[13] {vinegar/oils}        => {dairy produce} 0.05866802  0.6519774 1.4717002
[14] {chocolate}           => {dairy produce} 0.05378749  0.4943925 1.1159859
[15] {beer}                => {dairy produce} 0.04595831  0.2954248 0.6668587
[16] {frozen foods}        => {dairy produce} 0.06710727  0.5739130 1.2954865
[17] {cheese}              => {dairy produce} 0.08459583  0.6677368 1.5072736
[18] {sausage}             => {dairy produce} 0.10737163  0.5677419 1.2815566
[19] {fruit}               => {dairy produce} 0.15638027  0.6277551 1.4170235
[20] {non-alc. drinks}     => {dairy produce} 0.15190646  0.4777742 1.0784736
[21] {vegetables}          => {dairy produce} 0.17041179  0.6242086 1.4090180
[22] {bread and backed goods}    => {dairy produce} 0.18769700  0.5432607 1.2262955
[23] {bread and backed goods,
     long-life bakery products} => {dairy produce} 0.02755465  0.7112861 1.6055769
[24] {bread and backed goods,
     perfumery}            => {dairy produce} 0.02582613  0.7448680 1.6813810
[25] {beef,
     vegetables}          => {dairy produce} 0.02989324  0.6518847 1.4714909
[26] {beef,
     bread and backed goods}    => {dairy produce} 0.02663955  0.7158470 1.6158722
[27] {fruit,
     vinegar/oils}        => {dairy produce} 0.02663955  0.7683284 1.7343379
[28] {non-alc. drinks,
     vinegar/oils}        => {dairy produce} 0.02541942  0.7288630 1.6452530
[29] {vegetables,
     vinegar/oils}        => {dairy produce} 0.03141840  0.7481840 1.6888662
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[30] {bread and backed goods,
    vinegar/oils}   => {dairy produce} 0.03009659 0.7290640 1.6457069
[31] {bread and backed goods,
    chocolate}   => {dairy produce} 0.02897814 0.6462585 1.4587910
[32] {frozen foods,
    fruit}   => {dairy produce} 0.03070666 0.7401961 1.6708351