

R Lab Activity

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RGui - [R Console]
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> data("Groceries")
> Groceries
#> # A matrix of 9835 transactions by 169 items
#> # transactions as itemMatrix in sparse format with
#> # 9835 rows (elements/itemsets/transactions) and
#> # 169 columns (items) and a density of 0.02609146

most frequent items:
      whole milk other vegetables      rolls/buns      soda
           2515            1803            1805            1715
      yogurt          (Other)
           1372            34055

element (itemset/transaction) length distribution:
sizes
   2    3    4    5    6    7    8    9    10   11   12   13   14   15   16
 2150 1643 1259 1005 855 645 545 498 350 246 182 117 78 77 55 46
 17   18   19   20   21   22   23   24   26   27   28   29   32
 29   14   14   9   11   4   6   1   1   1   1   3   1

Min. 1st Qu. Median Mean 3rd Qu. Max.
1.000 2.000 3.000 4.409 6.000 32.000

includes extended item information - examples:
  labels levels
1 frankfurter sausage meat and sausage
2 sausage sausage meat and sausage
3 liver loaf sausage meat and sausage
> inspect(Head(Groceries, 5))
  items
[1] (citrus fruit,
     semi-finished bread,
     margarine,
     ready soups)
[2] (tropical fruit,
     yogurt,
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[4] (pip fruit,  
yogurt,  
cream cheese ,  
milk, bread);  
[5] (other vegetables,  
whole milk,  
condensed milk,  
  
long life bakery product)  
> grocery_rules <- apriori(Groceries, parameter = list(supp = 0.001, conf = 0.5, minlen=2))  
Apriori  
  
Parameter specification:  
confidence minval smax arem aval originalSupport maxtime support minlen  
0.5 0.1 1 none FALSE TRUE 5 0.001 2  
maxlen target ext  
10 rules TRUE  
  
Algorithmic control:  
filter tree heap memopt load sort verbose  
0.1 TRUE TRUE FALSE TRUE 2 TRUE  
  
Absolute minimum support count: 9  
  
set item appearances ... [0 item(s)] done [0.00s].  
set transactions ... [169 items(s), 9838 transaction(s)] done [0.00s].  
sorting and recoding items ... [157 item(s)] done [0.00s].  
creating transaction tree ... done [0.00s].  
checking subsets of size 1 2 3 4 5 6 done [0.01s].  
generating rules ... [5668 rules(s)] done [0.00s].  
creating 54 objects done [0.00s].  
> length(grocery_rules)  
[1] 5668  
> rules_sorted_by_lift <- sort(grocery_rules, by = "lift", decreasing = TRUE)  
> inspect(head(rules_sorted_by_lift, 10))  
#> #> the following table shows the lift values for the first 10 rules.  
#> #> The columns are: lhs support confidence coverage lift count  
#> #> (Instant food products,  
#> (soda, &gt; (hamburger meat) 0.001220132 0.6315789 0.001931876 18.9565 12  
#> (soda, &gt; (popcorn) 0.001220132 0.6315789 0.001931876 16.69779 12  
#> (fries, &gt; (baking powder) 0.001016777 0.5555556 0.001830198 16.40087 10  
#> (ham, &gt; (processed cheese) 0.001931876 0.6333333 0.003050330 15.04549 19  
#> (whole milk, &gt; (Instant food products) 0.001525165 0.5000000 0.003050330 15.03823 15  
#> (other vegetables, &gt; (curd, 0.001525165 0.5000000 0.003050330 15.03823 15  
#> yogurt, &gt; (whipped/sour cream) 0.001016777 0.5882353 0.001728521 14.83409 10  
#> (processed cheese, &gt; (domestic eggs) 0.001118454 0.5238095 0.002135231 12.44364 11  
  
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[8] {tropical fruit,  
other vegetables,  
yogurt,  
white bread}     => (butter)      0.00101e7777  0.6666667 0.001525165 12.03058   10  
[9] {(hamburger meat,  
yogurt,  
whole sour cream)} => (butter)      0.00101e7777  0.6250000 0.001626843 11.27867   10  
[10] {(tropical fruit,  
other vegetables,  
whole milk,  
yogurt,  
dramic eggs)}    => (butter)      0.00101e7777  0.6250000 0.001626843 11.27867   10  
#> plot(grocery_rules, method = "scatterplot", measure = c("support", "confidence"), shading = "lift")  
To reduce overplotting, jitter is added! Use jitter = 0 to prevent jitter.  
Error in UseMethod("depth") :  
  no applicable method for 'depth' applied to an object of class "NULL"  
Error in UseMethod("depth") :  
  no applicable method for 'depth' applied to an object of class "NULL"  
> >> top_20_rules <- head(sort(grocery_rules, by = "lift"), 20)  
> top_20_rules <- head(sort(grocery_rules, by = "lift"), 20)  
> plot(top_20_rules, method = "graph", engine = "htmlwidget")  
>  
4
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