

R Lab Activity

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> data("Groceries")
> summary(Groceries)
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
    2513      1903      1805      1715
  yogurt      (Other)
    1372      34055

element (itemset/transaction) length distribution:
sizes
 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
2159 1643 1299 1005 855 645 545 438 350 246 182 117 78 77 55 46
17 18 19 20 21 22 23 24 26 27 28 29 32
25 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 level2 level1
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,
coffee)
[3] (whole milk)
[4] (pip fruit,
yogurt,
cream cheese ,
meat spreads)
[5] (other vegetables,
whole milk,
condensed milk,
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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: 5

set item appearances ...[0 item(s)] done [0.00s].
set transactions ...[169 item(s), 9835 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].
writing ... [5668 rule(s)] done [0.00s].
creating 54 object ... 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))
lhs rhs support confidence coverage lift count
[1] (Instant food products, => (hamburger meat) 0.001220132 0.6315789 0.001931876 18.99565 12
[2] (soda, => (salty snack) 0.001220132 0.6315789 0.001931876 16.49779 12
[3] (flour, => (sugar) 0.001016777 0.5555556 0.001830198 16.40807 10
[4] (ham, => (white bread) 0.001931876 0.6333333 0.003050330 15.04549 19
[5] (whole milk, => (hamburger meat) 0.001525165 0.5000000 0.003050330 15.03823 15
[6] (Instant food products) => (other vegetables,
curd,
yogurt,
whipped/sour cream) => (cream cheese ) 0.001016777 0.5882353 0.001728521 14.83409 10
[7] (processed cheese, => (white bread) 0.001118454 0.5238095 0.002135231 12.44364 11
domestic eggs)
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[8] (tropical fruit,
other vegetables,
yogurt,
white bread) => (butter) 0.001016777 0.6666667 0.001525165 12.03058 10
[9] (hamburger meat,
yogurt,
whipped/sour cream) => (butter) 0.001016777 0.6250000 0.001626843 11.27867 10
[10] (tropical fruit,
other vegetables,
whole milk,
yogurt,
domestic eggs) => (butter) 0.001016777 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")
>
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