Experiment1.3

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Branch: CSE   **Section**: 905/A
Semester: 6   **Date of Performance**: 01/03/2023
Subject Name: Data Mining Lab   **Subject Code**: 20CSP-376

1)   Aim:

Demonstration of association rule mining using Apriori algorithm.

2)   Objective:

Creating association rules and using itemfrequency plot functions.

3)   Code and Output:

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Console    Terminal ×    Background Jobs ×

R 4.2.2 · ~/Documents/DMClassWork/

> library(arulesViz)
> library(RColorBrewer)
> setwd("/home/heefe/Documents/DMClassWork/")
> data("Groceries")
> rules <- apriori(Groceries,parameter = list(supp = 0.01,conf = 0.2))
Apriori

Parameter specification:
 confidence minval smax arem  aval originalSupport maxtime support minlen maxlen
       0.2    0.1    1 none FALSE            TRUE       5    0.01      1     10
 target   ext
  rules TRUE

Algorithmic control:
 filter tree heap memopt load sort verbose
    0.1 TRUE TRUE  FALSE TRUE    2    TRUE

Absolute minimum support count: 98

set item appearances ...[0 item(s)] done [0.00s].
set transactions ...[169 item(s), 9835 transaction(s)] done [0.01s].
sorting and recoding items ... [88 item(s)] done [0.00s].
creating transaction tree ... done [0.01s].
checking subsets of size 1 2 3 4 done [0.00s].
writing ... [232 rule(s)] done [0.00s].
creating S4 object  ... done [0.00s].
> inspect(rules[1:10])
     lhs                 rhs                 support    confidence coverage
[1]  {}              => {whole milk}         0.25551601 0.2555160  1.00000000
[2]  {hard cheese}   => {whole milk}         0.01006609 0.4107884  0.02450432
[3]  {butter milk}   => {other vegetables}   0.01037112 0.3709091  0.02796136
[4]  {butter milk}   => {whole milk}         0.01159126 0.4145455  0.02796136
[5]  {ham}           => {whole milk}         0.01148958 0.4414062  0.02602949
[6]  {sliced cheese} => {whole milk}         0.01077783 0.4398340  0.02450432
```

```
R 4.2.2 · ~/Documents/DMClassWork/
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[5]  {ham}              => {whole milk}         0.01148958 0.4414062  0.02602949
[6]  {sliced cheese}    => {whole milk}         0.01077783 0.4398340  0.02450432
[7]  {oil}              => {whole milk}         0.01128622 0.4021739  0.02806304
[8]  {onions}           => {other vegetables}   0.01423488 0.4590164  0.03101169
[9]  {onions}           => {whole milk}         0.01209964 0.3901639  0.03101169
[10] {berries}          => {yogurt}             0.01057448 0.3180428  0.03324860
     lift     count
[1]  1.000000 2513
[2]  1.607682   99
[3]  1.916916  102
[4]  1.622385  114
[5]  1.727509  113
[6]  1.721356  106
[7]  1.573968  111
[8]  2.372268  140
[9]  1.526965  119
[10] 2.279848  104
> arules::itemFrequencyPlot(Groceries, topN= 20,
+                           col = brewer.pal(8, 'Pastel2'),
+                           main = 'Relative Item Frequency Plot',
+                           type = "relative",
+                           ylab = "Item Frequency(Relative)")
> |
```

Code -

```
#Apriori algorithm

library(arules)

library(arulesViz)

library(RColorBrewer)

setwd("/home/heefe/Documents/DMClassWork/")

data("Groceries")

rules <- apriori(Groceries,parameter = list(supp = 0.01,conf = 0.2))


inspect(rules[1:10])


#using itemfrequency plot () function
arules::itemFrequencyPlot(Groceries, topN= 20,

                col = brewer.pal(8, 'Pastel2'),

                main = 'Relative Item Frequency Plot',

                type = "relative",

                ylab = "Item Frequency(Relative)")
```