Experiment 1.3

Student Name: Kanishk Soni **UID: 20BCS9398**
Branch: BE-CSE **Section/Group: 20BCS-DM_708B**
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Subject Name: Data Mining Lab **Subject Code: 20CSP-376**

1. Aim:

Demonstration of association rule mining using Apriory algorithm on supermarket data.

2. Code and Output:

PROGRAM

```
library(arules)
library(arulesViz)
library(RColorBrewer)

# import dataset
data("Groceries")

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

# using inspect() function
inspect(rules[1:10])

# using itemFrequencyPlot() function
arules::itemFrequencyPlot(Groceries, topN = 20,
                          col = brewer.pal(8, 'Pastel2'),
                          main = 'Relative Item Frequency Plot',
                          type = "relative",
                          ylab = "Item Frequency (Relative)")
```

OUTPUT

```
> library(arules)
> library(arulesViz)
> library(RColorBrewer)
> # import dataset
> data("Groceries")
> # using apriori() function
> rules <- apriori(Groceries,
+                  parameter = list(supp = 0.01, conf = 0.2))
Apriori

Parameter specification:
 confidence minval smax arem  aval originalSupport maxtime support minlen maxlen target  ext
        0.2    0.1    1 none FALSE            TRUE       5    0.01      1     10  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 [0.00s].
sorting and recoding items ... [88 item(s)] done [0.00s].
creating transaction tree ... done [0.00s].
checking subsets of size 1 2 3 4 done [0.00s].
writing ... [232 rule(s)] done [0.00s].
creating S4 object  ... done [0.00s].
> # using inspect() function
> inspect(rules[1:10])
     lhs                rhs                support    confidence coverage   lift     count
[1]  {}              => {whole milk}       0.25551601 0.2555160  1.00000000 1.000000 2513
[2]  {hard cheese}   => {whole milk}       0.01006609 0.4107884  0.02450432 1.607682   99
[3]  {butter milk}   => {other vegetables} 0.01037112 0.3709091  0.02796136 1.916916  102
[4]  {butter milk}   => {whole milk}       0.01159126 0.4145455  0.02796136 1.622385  114
[5]  {ham}           => {whole milk}       0.01148958 0.4414062  0.02602949 1.727509  113
[6]  {sliced cheese} => {whole milk}       0.01077783 0.4398340  0.02450432 1.721356  106
[7]  {oil}           => {whole milk}       0.01128622 0.4021739  0.02806304 1.573968  111
[8]  {onions}        => {other vegetables} 0.01423488 0.4590164  0.03101169 2.372268  140
[9]  {onions}        => {whole milk}       0.01209964 0.3901639  0.03101169 1.526965  119
[10] {berries}       => {yogurt}           0.01057448 0.3180428  0.03324860 2.279848  104
> # using itemFrequencyPlot() function
```