Experiment 1.3

Student Name: Anshuman Singh
UID: 20BCS2665
Branch: CSE
Section/Group: 902-A
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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. Objective:

To demonstration of association rule mining using Apriory algorithm on supermarket data

Summary: Association rule mining finds interesting associations and relationships among large sets of data items. This rule shows how frequently a itemset occurs in a transaction. A typical example is a Market Based Analysis.

Market Based Analysis is one of the key techniques used by large relations to show associations between items. It allows retailers to identify relationships between the items that people buy together frequently.

Given a set of transactions, we can find rules that will predict the occurrence of an item based on the occurrences of other items in the transaction.

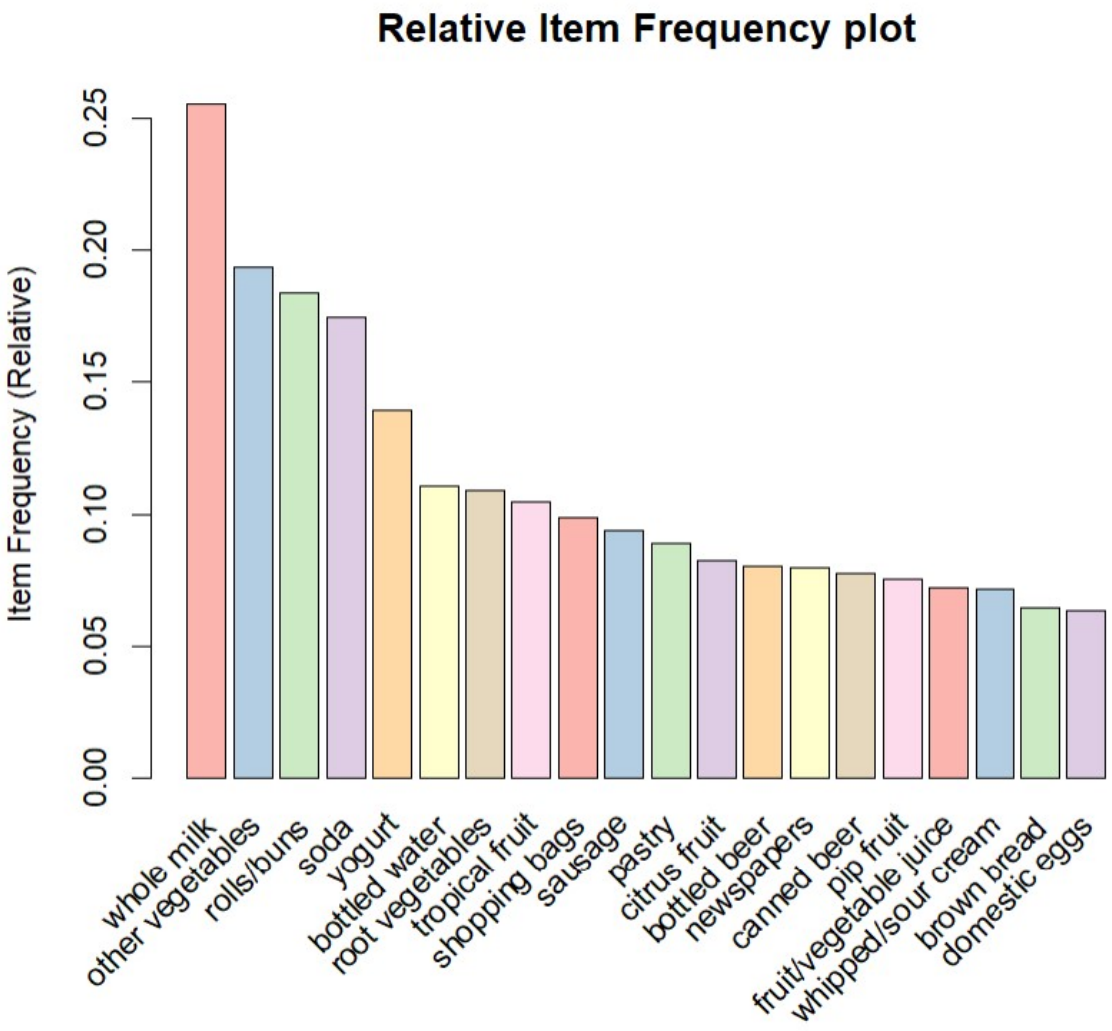
3. Script and Output:

CODE: -

```
library(arules) library(arulesViz)
library(RColorBrewer) data("Groceries") rules <-
apriori(Groceries,              parameter = list(supp =
0.01, conf = 0.2)) inspect(rules[1:10])
arules::itemFrequencyPlot(Groceries, topN = 20,
                  col= brewer.pal(8, 'Pastel2'),
main= 'Relative Itrem Frequency plot',
type= "relative",                 ylab = "Item
Frequency (Relative)")
```

SCREENSHOTS: -

```
library(arules)
library(arulesViz)
library(RColorBrewer)
data("Groceries")
rules <- apriori(Groceries,
                 parameter = list(supp = 0.01, conf = 0.2))
inspect(rules[1:10])
arules::itemFrequencyPlot(Groceries, topN = 20,
                          col= brewer.pal(8, 'Pastel2'),
                          main= 'Relative Itrem Frequency plot',
                          type= "relative",
                          ylab = "Item Frequency (Relative)")
```



```
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 [0.00s].
checking subsets of size 1 2 3 4 done [0.00s].
writing ... [232 rule(s)] done [0.00s].
creating S4 object  ... done [0.00s].
> 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
> arules::itemFrequencyPlot(Groceries, topN = 20,
+                           col= brewer.pal(8, 'Pastel2'),
+                           main= 'Relative Itrem Frequency plot',
+                           type= "relative",
+                           ylab = "Item Frequency (Relative)")
>
```