Experiment 1.3

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Branch: CSE **Section/Group:** 607-B

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Subject Name: Data Mining Lab **Subject Code:** 20CSP-376

1. Aim/Overview of the practical:

Demonstration of associate rule mining using Apriori algorithm on supermarket data

2. Objective:

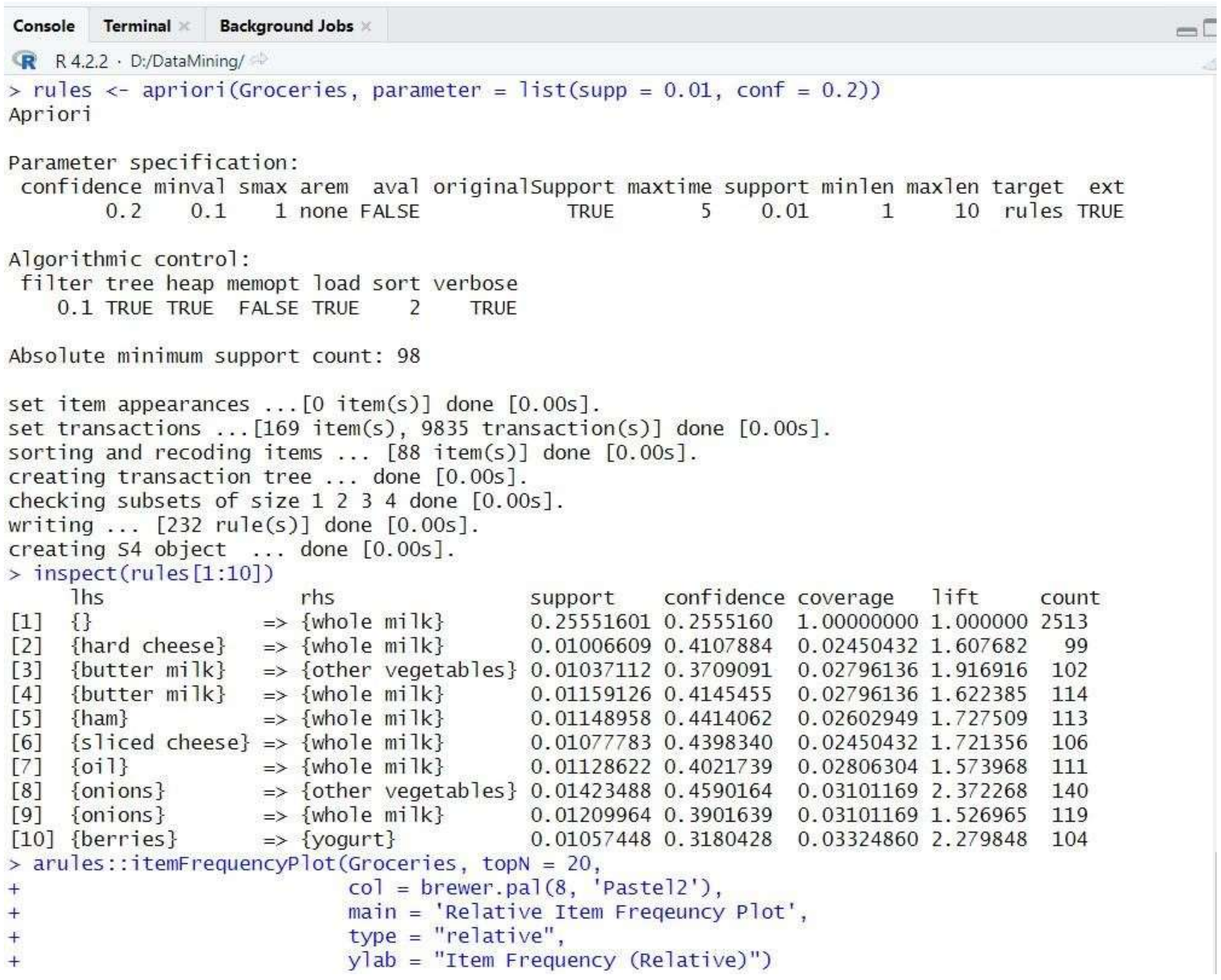
a. To learn how to import.
b. To learn how to perform associate rule mining using Apriori algorithm.
c. To learn the utilization of arules, arulesviz, RcolorBrewer.

3. Code:

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

data("Groceries")

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

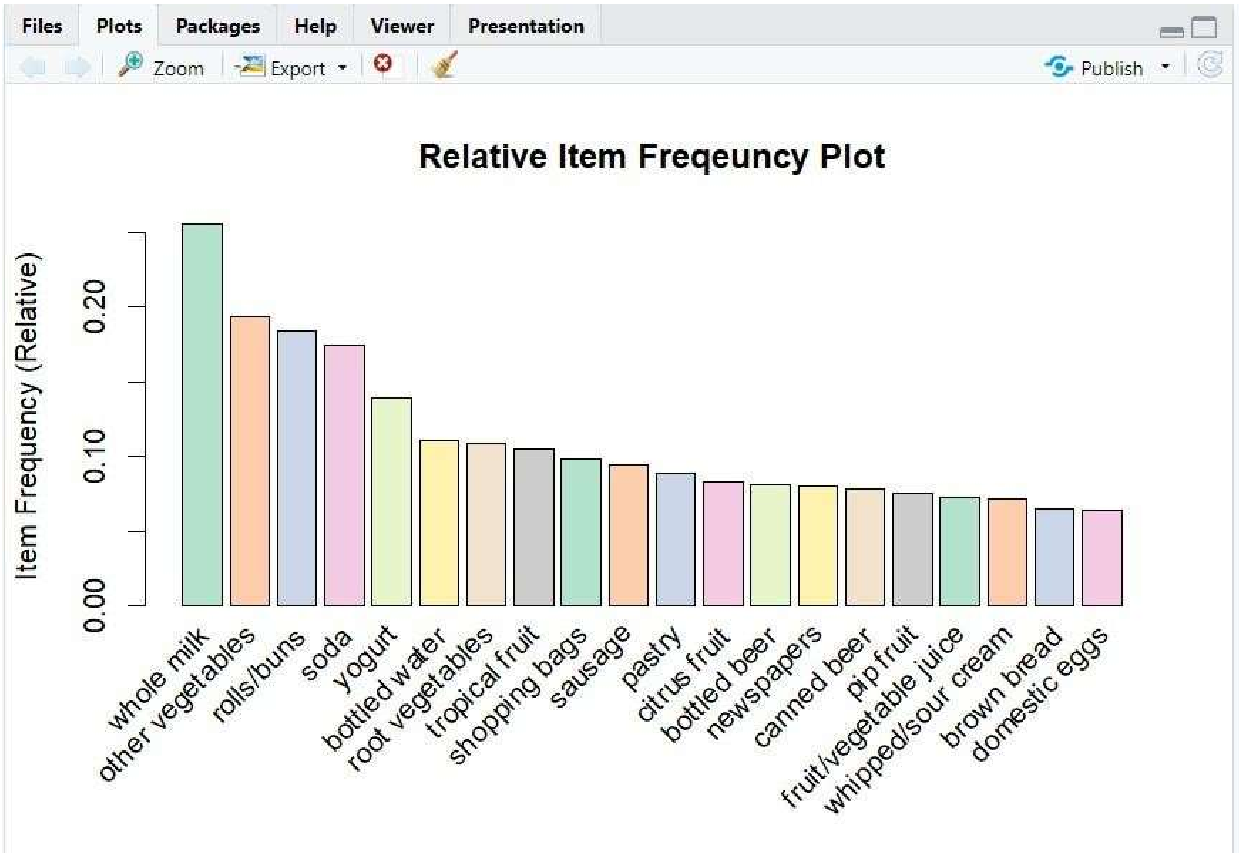
```
inspect(rules[1:10])

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

4. Output:



```
> 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].
> 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 Item Freqeuncy Plot',
+                           type = "relative",
+                           ylab = "Item Frequency (Relative)")
```

Graph output:


Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Relative Item Freqeuncy Plot
Item Frequency (Relative)
whole milk
other vegetables
rolls/buns
soda
yogurt
bottled water
root vegetables
tropical fruit
shopping bags
sausage
pastry
citrus fruit
bottled beer
newspapers
canned beer
pip fruit
fruit/vegetable juice
whipped/sour cream
brown bread
domestic eggs