Practical 8:

Apriori algorithm

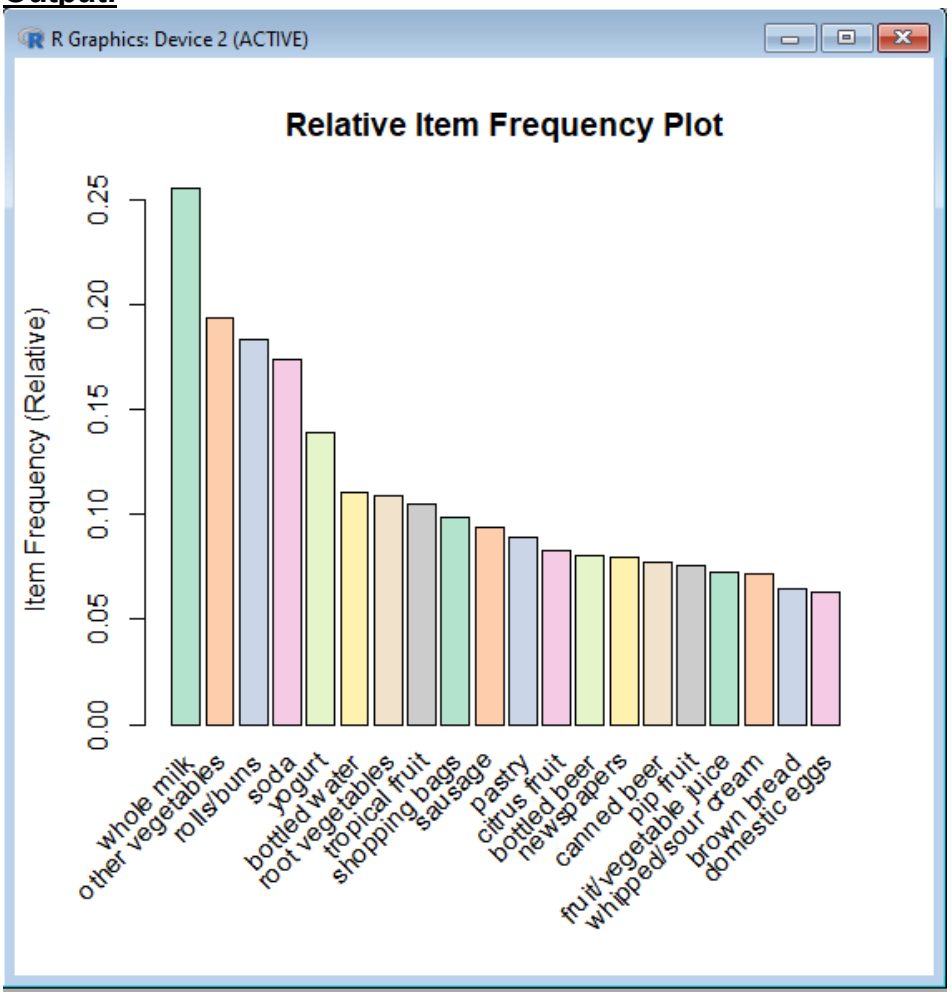
Aim: Perform Apriori algorithm using Groceries dataset from the R arules package.

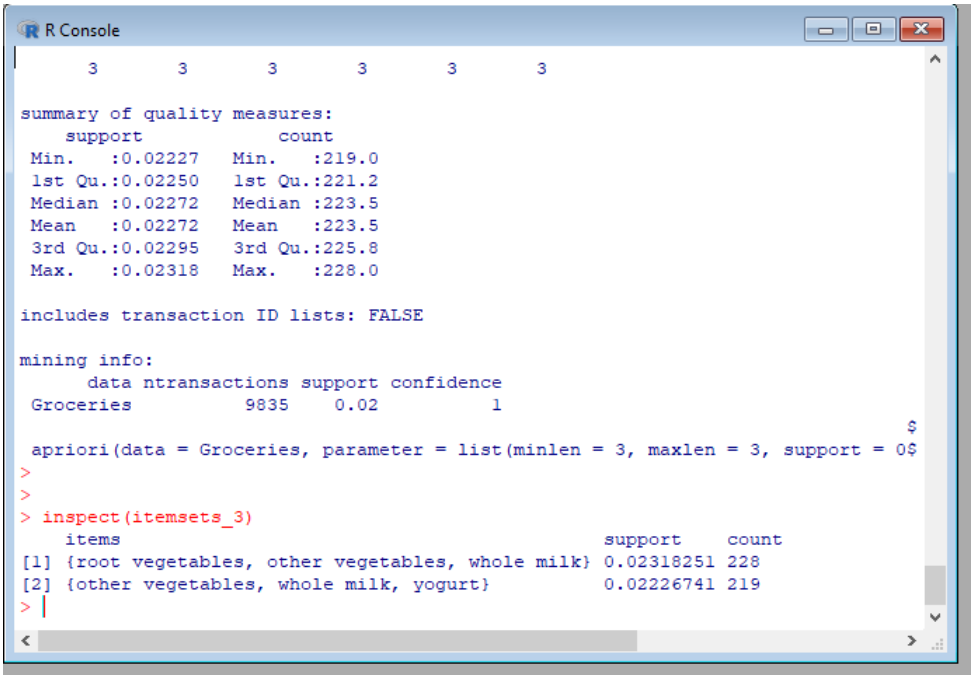
Requirement:
R tool

Code:

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

data(Groceries)
Groceries

summary(Groceries)
class(Groceries)

rules = apriori(Groceries, parameter = list(supp = 0.02, conf = 0.2))
summary (rules)

inspect(rules[1:10])

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

itemsets = apriori(Groceries, parameter = list(minlen=2, maxlen=2,support=0.02,
target="frequent itemsets"))
summary(itemsets)
inspect(itemsets)
itemsets_3 = apriori(Groceries, parameter = list(minlen=3, maxlen=3,support=0.02,
target="frequent itemsets"))
summary(itemsets_3)


inspect(itemsets_3)
```

Output:


R Graphics: Device 2 (ACTIVE)
Relative Item Frequency Plot
Item Frequency (Relative)
0.00
0.05
0.10
0.15
0.20
0.25
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


R Console
3 3 3 3 3 3
summary of quality measures:
support count
Min. :0.02227 Min. :219.0
1st Qu.:0.02250 1st Qu.:221.2
Median :0.02272 Median :223.5
Mean :0.02272 Mean :223.5
3rd Qu.:0.02295 3rd Qu.:225.8
Max. :0.02318 Max. :228.0
includes transaction ID lists: FALSE
mining info:
data ntransactions support confidence
Groceries 9835 0.02 1
$
apriori(data = Groceries, parameter = list(minlen = 3, maxlen = 3, support = 0$
>
>
> inspect(itemsets_3)
items support count
[1] {root vegetables, other vegetables, whole milk} 0.02318251 228
[2] {other vegetables, whole milk, yogurt} 0.02226741 219
>