Carrefour Sales Data

# Loading the data   
library(readr)  
Supermarket\_Sales\_Dataset\_II <- read\_csv("C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv")

##   
## -- Column specification --------------------------------------------------------  
## cols(  
## .default = col\_character()  
## )  
## i Use `spec()` for the full column specifications.

## Warning: 7500 parsing failures.  
## row col expected actual file  
## 1 -- 20 columns 3 columns 'C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv'  
## 2 -- 20 columns 1 columns 'C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv'  
## 3 -- 20 columns 2 columns 'C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv'  
## 4 -- 20 columns 5 columns 'C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv'  
## 5 -- 20 columns 1 columns 'C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv'  
## ... ... .......... ......... ...........................................................  
## See problems(...) for more details.

View(Supermarket\_Sales\_Dataset\_II)

library(Matrix)  
library(arules)

## Warning: package 'arules' was built under R version 4.0.5

##   
## Attaching package: 'arules'

## The following objects are masked from 'package:base':  
##   
## abbreviate, write

path <- "C:/Users/mutho/Downloads/Supermarket\_Sales\_Dataset II.csv"  
Transactions<-read.transactions(path, sep = ",")

## Warning in asMethod(object): removing duplicated items in transactions

Transactions

## transactions in sparse format with  
## 7501 transactions (rows) and  
## 119 items (columns)

items<-as.data.frame(itemLabels(Transactions))  
colnames(items) <- "Item"  
head(items, 10)

## Item  
## 1 almonds  
## 2 antioxydant juice  
## 3 asparagus  
## 4 avocado  
## 5 babies food  
## 6 bacon  
## 7 barbecue sauce  
## 8 black tea  
## 9 blueberries  
## 10 body spray

rules <- apriori (Transactions, parameter = list(supp = 0.001, conf = 0.8))

## Apriori  
##   
## Parameter specification:  
## confidence minval smax arem aval originalSupport maxtime support minlen  
## 0.8 0.1 1 none FALSE TRUE 5 0.001 1  
## maxlen target ext  
## 10 rules TRUE  
##   
## Algorithmic control:  
## filter tree heap memopt load sort verbose  
## 0.1 TRUE TRUE FALSE TRUE 2 TRUE  
##   
## Absolute minimum support count: 7   
##   
## set item appearances ...[0 item(s)] done [0.00s].  
## set transactions ...[119 item(s), 7501 transaction(s)] done [0.00s].  
## sorting and recoding items ... [116 item(s)] done [0.00s].  
## creating transaction tree ... done [0.00s].  
## checking subsets of size 1 2 3 4 5 6 done [0.01s].  
## writing ... [74 rule(s)] done [0.00s].  
## creating S4 object ... done [0.00s].

rules

## set of 74 rules

itemFrequency(Transactions[, 8:10],type = "absolute")

## black tea blueberries body spray   
## 107 69 86

round(itemFrequency(Transactions[, 8:10],type = "relative")\*100,2)

## black tea blueberries body spray   
## 1.43 0.92 1.15

# Building a apriori model with Min Support as 0.002 and confidence as 0.8.  
rules2 <- apriori (Transactions,parameter = list(supp = 0.002, conf = 0.8))

## Apriori  
##   
## Parameter specification:  
## confidence minval smax arem aval originalSupport maxtime support minlen  
## 0.8 0.1 1 none FALSE TRUE 5 0.002 1  
## maxlen target ext  
## 10 rules TRUE  
##   
## Algorithmic control:  
## filter tree heap memopt load sort verbose  
## 0.1 TRUE TRUE FALSE TRUE 2 TRUE  
##   
## Absolute minimum support count: 15   
##   
## set item appearances ...[0 item(s)] done [0.00s].  
## set transactions ...[119 item(s), 7501 transaction(s)] done [0.01s].  
## sorting and recoding items ... [115 item(s)] done [0.00s].  
## creating transaction tree ... done [0.00s].  
## checking subsets of size 1 2 3 4 5 done [0.00s].  
## writing ... [2 rule(s)] done [0.00s].  
## creating S4 object ... done [0.00s].

# Building apriori model with Min Support as 0.002 and confidence as 0.6.  
rules3 <- apriori (Transactions, parameter = list(supp = 0.001, conf = 0.6))

## Apriori  
##   
## Parameter specification:  
## confidence minval smax arem aval originalSupport maxtime support minlen  
## 0.6 0.1 1 none FALSE TRUE 5 0.001 1  
## maxlen target ext  
## 10 rules TRUE  
##   
## Algorithmic control:  
## filter tree heap memopt load sort verbose  
## 0.1 TRUE TRUE FALSE TRUE 2 TRUE  
##   
## Absolute minimum support count: 7   
##   
## set item appearances ...[0 item(s)] done [0.00s].  
## set transactions ...[119 item(s), 7501 transaction(s)] done [0.00s].  
## sorting and recoding items ... [116 item(s)] done [0.00s].  
## creating transaction tree ... done [0.00s].  
## checking subsets of size 1 2 3 4 5 6 done [0.00s].  
## writing ... [545 rule(s)] done [0.00s].  
## creating S4 object ... done [0.00s].

rules2

## set of 2 rules

rules3

## set of 545 rules

inspect(rules[1:5])

## lhs rhs support confidence  
## [1] {frozen smoothie,spinach} => {mineral water} 0.001066524 0.8888889   
## [2] {bacon,pancakes} => {spaghetti} 0.001733102 0.8125000   
## [3] {nonfat milk,turkey} => {mineral water} 0.001199840 0.8181818   
## [4] {ground beef,nonfat milk} => {mineral water} 0.001599787 0.8571429   
## [5] {mushroom cream sauce,pasta} => {escalope} 0.002532996 0.9500000   
## coverage lift count  
## [1] 0.001199840 3.729058 8   
## [2] 0.002133049 4.666587 13   
## [3] 0.001466471 3.432428 9   
## [4] 0.001866418 3.595877 12   
## [5] 0.002666311 11.976387 19

rules<-sort(rules, by="confidence", decreasing=TRUE)  
inspect(rules[1:5])

## lhs rhs support   
## [1] {french fries,mushroom cream sauce,pasta} => {escalope} 0.001066524  
## [2] {ground beef,light cream,olive oil} => {mineral water} 0.001199840  
## [3] {cake,meatballs,mineral water} => {milk} 0.001066524  
## [4] {cake,olive oil,shrimp} => {mineral water} 0.001199840  
## [5] {mushroom cream sauce,pasta} => {escalope} 0.002532996  
## confidence coverage lift count  
## [1] 1.00 0.001066524 12.606723 8   
## [2] 1.00 0.001199840 4.195190 9   
## [3] 1.00 0.001066524 7.717078 8   
## [4] 1.00 0.001199840 4.195190 9   
## [5] 0.95 0.002666311 11.976387 19