# market basket analysis

library(arules)

library(arulesViz)

# access inbuild data Groceries

data("Groceries")

str(Groceries)

View(Groceries)

# is the data is not in transaction format, make it in transaction with the use of read.transaction(file.choose())

# item frequency histogram

itemFrequencyPlot(Groceries,topN=10,type="absolute",main="IFP")

# make rules

rules=apriori(Groceries,parameter = list(support= 0.001,confidence=0.8))

inspect(rules[1:5])

rules= sort(rules,by="confidence",decreasing = T)

inspect(rules[1:5])

rules=apriori(Groceries,parameter = list(support= 0.001,confidence=0.9),appearance = list(default="lhs",rhs="whole milk"), control = list(verbose=F))

rules=sort(rules, decreasing = TRUE, by="confidence")

inspect(rules[1:10])

inspect(rules)

# check the redundant(duplicate) rules and remove it

# TRUE- redundant

# FALSE- not redundant

redundant\_rules=is.redundant(rules)

redundant\_rules

summary(redundant\_rules)

gr\_rules= rules[!redundant\_rules]

gr\_rules

inspect(gr\_rules[1:5])

# install igraph package for interactive plot

install.packages("igraph",dependencies = TRUE,repos = "http://cran.rstudio.com/")

plot(gr\_rules[1:10], method="graph", engine = "interactive")

# parallel coordinates plot

plot(rules[1:20],method = "paracoord",control = list(reorder = TRUE))