Progressive Education Society's

**Modern College of Engineering, Pune**

**MCA Department**

**A.Y.2023-24**

**(410908) : Data Science Laboratory**

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Name: Harsh Ghodke Assignment No: 4 Date of Implementation: 25/09/2024 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Q.1) Use the Apriori algorithm on the grocery dataset with minimum support to 0.001 and**

**minimum confidence of 0.8 indicate the top 5 association rules that are generated and**

**highlight the strong ones, sort them by confidence.**

**Ans:-**

# Load necessary libraries

library(arules)

# Load the built-in "Groceries" dataset from the arules package

data("Groceries")

# Apply the Apriori algorithm with specified minimum support and confidence

apriori\_rules <- apriori(Groceries, parameter = list(supp = 0.001, conf = 0.8))

# Display the top 5 rules sorted by confidence

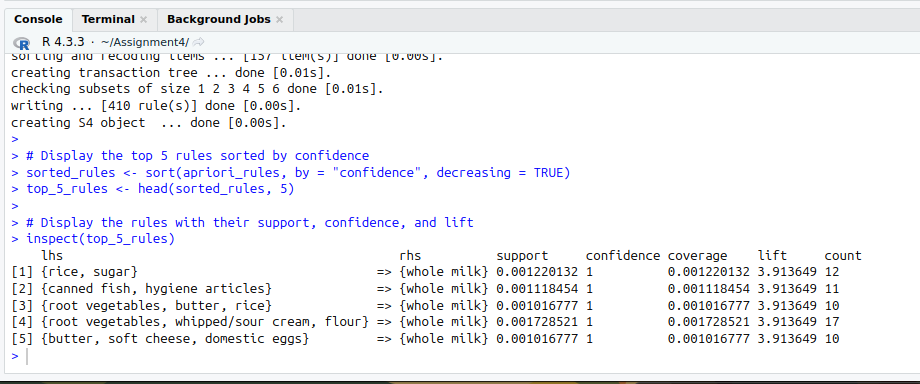
sorted\_rules <- sort(apriori\_rules, by = "confidence", decreasing = TRUE)

top\_5\_rules <- head(sorted\_rules, 5)

# Display the rules with their support, confidence, and lift

inspect(top\_5\_rules)

**Output:-**



**Q.2) Use the Eclat algorithm on a given Market Basket Dataset and predict the items which are bought frequently.**

**Ans:-**

# Load necessary libraries

library(arules)

# Load the Market Basket dataset

# For demonstration purposes, we'll use the built-in "Groceries" dataset from the arules package

data("Groceries")

# Apply the Eclat algorithm with a minimum support threshold

eclat\_result <- eclat(Groceries, parameter = list(supp = 0.001, maxlen = 5))

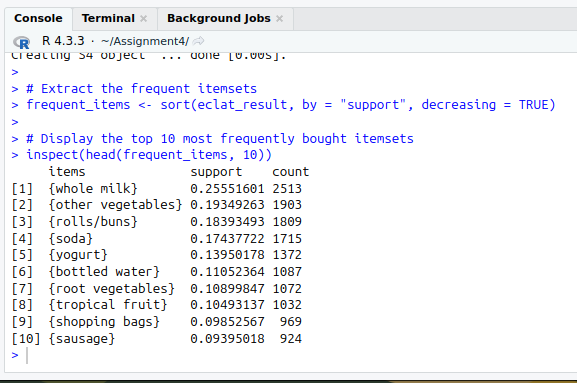
# Extract the frequent itemsets

frequent\_items <- sort(eclat\_result, by = "support", decreasing = TRUE)

# Display the top 10 most frequently bought itemsets

inspect(head(frequent\_items, 10))

**Output:-**

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