



Progressive Education Society's
Modern College of Engineering, Shivajinagar, Pune-05.
(An Autonomous Institute Affiliated to Savitribai Phule Pune University)
Department of MCA

PRACTICAL SUBMISSION RECORD- A.Y. 2025-26

Class: SYMCA Division : A Semester: III	Course Code: MCA01604 Course Name: Data Science Laboratory	Batch: S2
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CO No: CO605.1		Assignment No: 9

Title : 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.

Code:

```
# Load required libraries
```

```
library(arules)
```

```
library(arulesViz)
```

```
# Load the Groceries dataset
```

```
data("Groceries")
```

```
# View dataset summary
```

```
summary(Groceries)
```

```
# -----
```

```
# Run Apriori algorithm
```

```
# -----
```

```
rules <- apriori(Groceries,
```

```
parameter = list(supp = 0.001, conf = 0.8, target = "rules"))
```

```
# Display summary of generated rules
```

```
summary(rules)
```

```
# -----
```

```
# Sort rules by confidence and select top 5
```

```
# -----
```

```
sorted_rules <- sort(rules, by = "confidence", decreasing = TRUE)
```

```
top5_rules <- head(sorted_rules, 5)
```

```
# Display the top 5 rules
```



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```
cat("\nTop 5 Association Rules (sorted by confidence):\n")
```

```
inspect(top5_rules)
```

```
# -----
```

```
# Highlighting strong rules (confidence > 0.9)
```

```
# -----
```

```
strong_rules <- subset(top5_rules, confidence > 0.9)
```

```
cat("\nStrong Rules (Confidence > 0.9):\n")
```

```
if (length(strong_rules) > 0) {
```

```
 inspect(strong_rules)
```

```
} else {
```

```
 cat("No strong rules with confidence > 0.9 found.\n")
```

```
}
```

```
# -----
```

```
# Visualization
```

```
# -----
```

```
# Plot all rules (optional)
```

```
plot(sorted_rules[1:10], method = "graph", control = list(type = "items", main = "Top 10 Association Rules"))
```

```
# Highlight strong rules in a different color
```

```
if (length(strong_rules) > 0) {
```

```
 plot(strong_rules, method = "graph", control = list(type = "items", main = "Strong Rules (Confidence > 0.9)"))
```

```
}
```

Output :



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