Experiment - 1.4

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Subject Name: Data Mining Lab	Subject Code: 20CSP-376

1. Aim:

Demonstration of FP Growth algorithm on supermarket data.

2. Objective:

To demonstration of FP Growth algorithm on supermarket data.

3. Summary :

FP Growth Algorithm : FP-growth algorithm is a popular and efficient algorithm used in data mining for finding frequent itemsets in large datasets. The algorithm uses a tree structure called the FP-tree to represent the frequent itemsets in the dataset. The algorithm is divided into two phases: the first phase involves building the FP-tree, and the second phase involves mining frequent itemsets from the FP-tree.

FP-growth algorithm has several advantages over traditional algorithms such as Apriori. It can handle large datasets efficiently and requires only a single pass over the dataset. It also generates fewer candidate itemsets and has a faster runtime compared to Apriori. Therefore, FP-growth algorithm is widely used in various data mining applications such as market basket analysis, text mining, and bioinformatics.

4. Script/Code/Steps:

```
setwd("C:/Users/ASUS/OneDrive/Documents")

//assigning location

getwd()

library("arules")

//creating library

data("Mushroom")

//creating dataset

fprules <- fim4r(Mushroom, method = "fpgrowth", target = "rules", supp = 70, conf = 60)

fprules

inspect(fprules[1:5])

x <- as(fprules,"data.frame")

write.csv(x, file="mushroomrules.csv")
```

5. Output Screenshots :


```
Console    Terminal    Background Jobs

R  R 4.2.2 · ~/

> library("arules")
> data("Mushroom")
> fprules <- fim4r(Mushroom, method = "fpgrowth", target = "rules", supp = 70, conf = 60)
Package fim4r is required.
Download and install the package?
1: Yes
2: No

Selection: Yes
Installing package into 'C:/Users/ASUS/AppData/Local/R/win-library/4.2'
(as 'lib' is unspecified)
trying URL 'https://mhahsler.github.io/arules/docs/fim4r/fim4r_latest.tar.gz'
```



```
> fprules
set of 168 rules
> inspect(fprules[1:5])
      lhs                       rhs                    support   confidence lift count
[1] {}                     => {VeilType=partial} 1.0000000 1.0000000  1    8124
[2] {VeilColor=white}      => {VeilType=partial} 0.9753816 1.0000000  1    7924
[3] {VeilType=partial}     => {VeilColor=white}  0.9753816 0.9753816  1    7924
[4] {}                     => {VeilColor=white}  0.9753816 0.9753816  1    7924
[5] {GillAttached=free}    => {VeilType=partial} 0.9741507 1.0000000  1    7914
> x <- as(fprules,"data.frame")
> write.csv(x, file="mushroomrules.csv")
> |
```