



Experiment Title 4

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Branch: BE-CSE

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Subject Name: Data Mining Lab

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1. Aim/Overview of the practical: Demonstration of FP Growth algorithm on some dataset.

2. Tools used: RStudio and RWeka

3. Code:

```
library("arules")
setwd("C:\\Users\\hp\\Documents\\DATA MINING
CODES\\EXPERIMENT 4")
getwd()
data("Mushroom")
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")
```

4. Output:

RStudio:



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The screenshot shows the RStudio IDE. The source editor contains the following R code:

```
1 library("arules")
2 setwd("C:\\Users\\hp\\Documents\\DATA MINING CODES\\EXPERIMENT 4")
3 getwd()
4 data("Mushroom")
5 fprules <- findr(Mushroom, method = "fpgrowth", target = "rules", supp = 70, conf = 60)
6 fprules
7 inspect(fprules[1:5])
8 x <- as(fprules, "data.frame")
9 write.csv(x, file="mushroomrules.csv")
10
```

The console shows the output of the code execution:

```
R 4.2.2 ~\\DATA MINING CODES\\EXPERIMENT 4\\
> library("arules")
> setwd("C:\\Users\\hp\\Documents\\DATA MINING CODES\\EXPERIMENT 4")
> getwd()
[1] "C:/Users/hp/Documents/DATA MINING CODES/EXPERIMENT 4"
> data("Mushroom")
> fprules <- findr(Mushroom, method = "fpgrowth", target = "rules", supp = 70, conf = 60)
> 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] {GillAttach=free} => {veilType=partial} 0.9741507 1.0000000 1 7914
> x <- as(fprules, "data.frame")
> write.csv(x, file="mushroomrules.csv")
>
```

The environment pane on the right shows the loaded packages and data:

- Global Environment: 332 MB
- Mushroom: Large transactions (8124 elements, 1.3 MB)
- rules: Formal class rules
- x: 168 obs. of 5 variables

The User Library pane shows installed packages:

Name	Description	Version
arules	Mining Association Rules and Frequent Itemsets	1.7-5
arulesViz	Visualizing Association Rules and Frequent Itemsets	1.5-2
askpass	Safe Password Entry for R, Git, and SSH	1.1
base64enc	Tools for base64 encoding	0.1-3
bslib	Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'	0.4.2
ca	Simple, Multiple and Joint Correspondence Analysis	0.71.1
cachem	Cache R Objects with Automatic Pruning	1.0.7
cli	Helpers for Developing Command Line Interfaces	3.6.0
colorspace	A Toolbox for Manipulating and Assessing Colors and Palettes	2.1-0
cpp11	A C++11 Interface for R/C Interface	0.4.3
crossstalk	Inter-Widget Interactivity for HTML Widgets	1.2.0
curl	A Modern and Flexible Web Client for R	5.0.0
data.table	Extension of 'data.frame'	1.14.8
digest	Create Compact Hash Digests of R Objects	0.6.31
dplyr	A Grammar of Data Manipulation	1.1.0
DT	A Wrapper of the JavaScript Library 'DataTables'	0.27
ellipsis	Tools for Working with ...	0.3.2
evaluate	Parsing and Evaluation Tools that Provide More Details than the Default	0.20
fanus	ANSI Control Sequence Aware String Functions	1.0.4
farver	High Performance Colour Space Manipulation	2.1.1
fastmap	Fast Data Structures	1.1.1
foreach	Provides Foreach Looping Construct	1.5.2
fs	Cross-Platform File System Operations Based on 'libuv'	1.6.1
ggraph	Clusterin Graphics	1.3.2

csv file:

The screenshot shows an Excel spreadsheet titled "mushroomrules - Excel (Product Activation Failed)". The data is organized into columns A through W. The first few rows show the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1		rules	support	confidence	lift	count																	
2	1	{ } => {veil	1	1	1	8124																	
3	2	{veilColor=	0.975382	1	1	7924																	
4	3	{veilType=	0.975382	0.975382	1	7924																	
5	4	{ } => {veil	0.975382	0.975382	1	7924																	
6	5	{GillAttach	0.974151	1	1	7914																	
7	6	{veilType=	0.974151	0.974151	1	7914																	
8	7	{GillAttach	0.973166	1	1	7906																	
9	8	{GillAttach	0.973166	0.998989	1.024203	7906																	
10	9	{veilType=	0.973166	0.997728	1.024203	7906																	
11	10	{GillAttach	0.973166	0.998989	1.024203	7906																	
12	11	{veilColor	0.973166	0.997728	1.024203	7906																	
13	12	{ } => {Gill	0.974151	0.974151	1	7914																	
14	13	{RingNum1	0.921713	1	1	7488																	
15	14	{veilType=	0.921713	0.921713	1	7488																	
16	15	{veilColor	0.897095	1	1	7288																	
17	16	{veilType=	0.897095	0.973291	0.997856	7288																	
18	17	{veilType=	0.897095	0.919738	0.997856	7288																	
19	18	{RingNum1	0.897095	0.973291	0.997856	7288																	
20	19	{veilColor	0.897095	0.919738	0.997856	7288																	
21	20	{GillAttach	0.89808	1	1	7296																	
22	21	{veilType=	0.89808	0.974359	1.000214	7296																	
23	22	{GillAttach	0.89808	0.921911	1.000214	7296																	
24	23	{GillAttach	0.897095	1	1	7288																	
25	24	{GillAttach	0.897095	0.998904	1.024116	7288																	
26	25	{veilType=	0.897095	1	1.026535	7288																	
27	26	{GillAttach	0.897095	0.921832	1.000128	7288																	
28	27	{GillAttach	0.897095	0.998904	1.024116	7288																	
29	28	{veilColor	0.897095	1	1.026535	7288																	
30	29	{GillAttach	0.897095	0.921832	1.000128	7288																	
31	30	{RingNum1	0.89808	0.974359	1.000214	7296																	
32	31	{GillAttach	0.89808	0.921911	1.000214	7296																	
33	32	{ } => {Ring	0.921713	0.921713	1	7488																	
34	33	{GillAttach	0.838503	1	1	6812																	
		mushroomrules																					

5. Observation:

- Learnt how to use R and create a file in Rstudio.
- Learnt how to install packages in Rstudio.
- Learnt how to write data into csv file.
- Learnt how to load dataset in Rstudio.