

## Experiment 1.3

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**Semester:** 6  
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### AIM :-

Demonstration of association rule mining using Apriori algorithm on supermarket data.

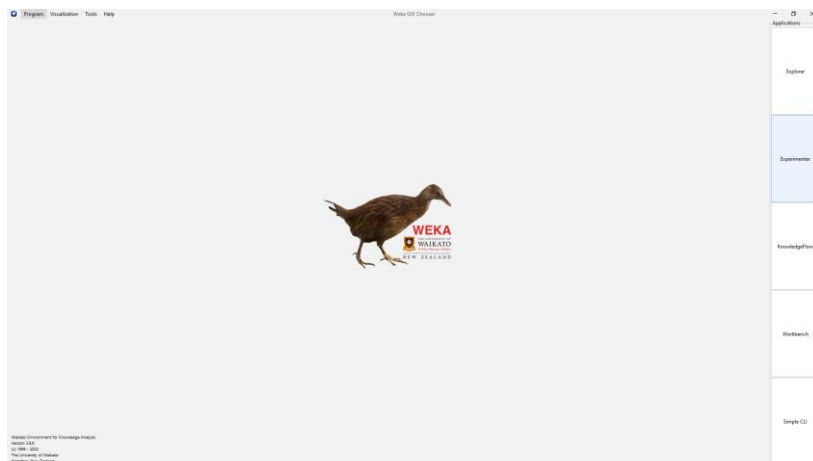
$$\begin{array}{l} \text{Rule: } X \Rightarrow Y \\ \begin{array}{l} \nearrow \text{Support} = \frac{\text{freq}(X, Y)}{N} \\ \rightarrow \text{Confidence} = \frac{\text{freq}(X, Y)}{\text{freq}(X)} \\ \searrow \text{Lift} = \frac{\text{Support}}{\text{Supp}(X) \times \text{Supp}(Y)} \end{array} \end{array}$$

### Output :-

Downloading database “supermarket”.

```
supermarket - Notepad
File Edit Format View Help
relation supermarket
@attribute 'department1' { t }
@attribute 'department2' { t }
@attribute 'department3' { t }
@attribute 'department4' { t }
@attribute 'department5' { t }
@attribute 'department6' { t }
@attribute 'department7' { t }
@attribute 'department8' { t }
@attribute 'department9' { t }
@attribute 'grocery misc' { t }
@attribute 'department11' { t }
@attribute 'baby needs' { t }
@attribute 'bread and cake' { t }
@attribute 'baking needs' { t }
@attribute 'coupons' { t }
@attribute 'juice-sat-cord-ms' { t }
@attribute 'tea' { t }
@attribute 'biscuits' { t }
@attribute 'canned fish-meat' { t }
@attribute 'canned fruit' { t }
@attribute 'canned vegetables' { t }
@attribute 'breakfast food' { t }
@attribute 'cigs-tobacco pkts' { t }
@attribute 'cigarette cartons' { t }
@attribute 'cleaners-polishers' { t }
@attribute 'coffee' { t }
@attribute 'sauces-gravy-pkle' { t }
@attribute 'confectionary' { t }
@attribute 'puddings-deserts' { t }
```

Open WEKA → Workbench → select file → Associate



Program File Edit

Weka Workbench

Preprocess

Classify

Cluster

Associate

Select attributes

Visualize

Experiment

Data mining processes

Simple CLI

Open file...

Open URL...

Open DB...

Generate...

Undo

Edit...

Save...

Filter

ChooseAllFilter

Apply

Stop

Current relation

Relation: supermarket

Instances: 4627

Attributes: 217

Sum of weights: 4627

Attributes

All

None

Invert

Pattern

No.	Name
1	<input checked="" type="checkbox"/> department1
2	<input checked="" type="checkbox"/> department2
3	<input checked="" type="checkbox"/> department3
4	<input checked="" type="checkbox"/> department4
5	<input checked="" type="checkbox"/> department5
6	<input checked="" type="checkbox"/> department6
7	<input type="checkbox"/> department7
8	<input type="checkbox"/> department8
9	<input checked="" type="checkbox"/> department9
10	<input checked="" type="checkbox"/> grocery misc
11	<input type="checkbox"/> department11
12	<input checked="" type="checkbox"/> baby needs
13	<input type="checkbox"/> bread and cake
14	<input checked="" type="checkbox"/> baking needs
15	<input checked="" type="checkbox"/> coupons
16	<input checked="" type="checkbox"/> juice-sat-cord-ms
17	<input checked="" type="checkbox"/> tea
18	<input type="checkbox"/> biscuits
19	<input type="checkbox"/> canned fish-meat

Remove

Selected attribute

Name: cigarette cartons

Missing: 4590 (99%)

Distinct: 1

Type: Nominal

Unique: 0 (0%)

No.	Label	Count	Weight
1	t	37	37

Class: total (Norm)

Visualize All

37

Status

OK

Log

x 0

Program Weka Workbench

Preprocess Classify Cluster Associate Select attributes Visualize Experiment Data mining processes Simple CLI

Associator

Choose **FPGrowth -P 2 -I -1 -N 10 -T 0 -C 0.9 -D 0.05 -U 1.0 -M 0.1**

Start Stop

Result list (right-click for ...)

15:21:59 - FPGrowth

Associator output

=== Run information ===

Scheme: weka.associations.FPGrowth -P 2 -I -1 -N 10 -T 0 -C 0.9 -D 0.05 -U 1.0 -M 0.1  
Relation: supermarket  
Instances: 4627  
Attributes: 217  
[list of attributes omitted]

=== Associator model (full training set) ===

FPGrowth found 16 rules (displaying top 10)

1. [fruit=t, frozen foods=t, biscuits=t, total=high]: 788 ==> [bread and cake=t]: 723 <conf:(0.92)> lift:(1.27) lev:
2. [fruit=t, baking needs=t, biscuits=t, total=high]: 760 ==> [bread and cake=t]: 696 <conf:(0.92)> lift:(1.27) lev:
3. [fruit=t, baking needs=t, frozen foods=t, total=high]: 770 ==> [bread and cake=t]: 705 <conf:(0.92)> lift:(1.27)
4. [fruit=t, vegetables=t, biscuits=t, total=high]: 815 ==> [bread and cake=t]: 746 <conf:(0.92)> lift:(1.27) lev:(0
5. [fruit=t, party snack foods=t, total=high]: 854 ==> [bread and cake=t]: 779 <conf:(0.91)> lift:(1.27) lev:(0.04)
6. [vegetables=t, frozen foods=t, biscuits=t, total=high]: 797 ==> [bread and cake=t]: 725 <conf:(0.91)> lift:(1.26)
7. [vegetables=t, baking needs=t, biscuits=t, total=high]: 772 ==> [bread and cake=t]: 701 <conf:(0.91)> lift:(1.26)
8. [fruit=t, biscuits=t, total=high]: 954 ==> [bread and cake=t]: 866 <conf:(0.91)> lift:(1.26) lev:(0.04) conv:(3)
9. [fruit=t, vegetables=t, frozen foods=t, total=high]: 834 ==> [bread and cake=t]: 757 <conf:(0.91)> lift:(1.26) le
10. [fruit=t, frozen foods=t, total=high]: 969 ==> [bread and cake=t]: 877 <conf:(0.91)> lift:(1.26) lev:(0.04) conv:

Status OK Log x 0