

# EXPERIMENT-9

## FREQUENT PATTERN MINING USING ASSOCIATION RULE THROUGH WEKA AND R TOOLS

OUTPUT:

Preprocess Classify Cluster Associate Select attributes Visualize

Open file... Open URL... Open DB... Generate... Undo Edit... Save...

Filter

Choose Discretize -B 10 -M -1.0 -R first-last -precision 6 Apply Stop

Current relation

Relation: 2015-weka.filters.unsupervised.attribute.... Attributes: 15  
Instances: 2664 Sum of weights: 2664

Attributes

All None Invert Pattern

No.	Name
1	Reference Number
2	Grid Ref: Easting
3	Grid Ref: Northing
4	Number of Vehicles
5	Accident Date
6	Time (24hr)
7	1st Road Class
8	Road Surface
9	Lighting Conditions
10	Weather Conditions
11	Casualty Class
12	Casualty Severity
13	Sex of Casualty
14	Age of Casualty
15	Type of Vehicle

Remove

Status

OK Log x 0

Selected attribute

Name: Reference Number  
Missing: 0 (0%) Distinct: 1979 Type: Nominal  
Unique: 1539 (58%)

No.	Label	Count	Weight
1	21G0539	5	5.0
2	21G1108	1	1.0
3	21H0565	1	1.0
4	21H0638	2	2.0
5	21H0242	1	1.0
6	21H0756	2	2.0
7	21H1028	1	1.0
8	21J0605	1	1.0
9	21J0614	1	1.0
10	21K0209	1	1.0

Class: Type of Vehicle (Nom) Visualize All

Too many values to display.

Start Stop

Result list (right-click...)

11:14:18 - Apriori

Associator output

Large itemsets L(4):

Road Surface=Dry Lighting Conditions=Daylight: street lights present Weather Conditions=Fine without high winds 1520

Road Surface=Dry Lighting Conditions=Daylight: street lights present Casualty Severity=Slight 1366

Road Surface=Dry Weather Conditions=Fine without high winds Casualty Class=Driver/Rider 1121

Road Surface=Dry Weather Conditions=Fine without high winds Casualty Severity=Slight 1611

Road Surface=Dry Weather Conditions=Fine without high winds Sex of Casualty=Male 1069

Road Surface=Dry Weather Conditions=Fine without high winds Type of Vehicle=Car 1136

Road Surface=Dry Casualty Severity=Slight Type of Vehicle=Car 1067

Lighting Conditions=Daylight: street lights present Weather Conditions=Fine without high winds Casualty Class=Driver/Rider 1121

Lighting Conditions=Daylight: street lights present Weather Conditions=Fine without high winds Casualty Severity=Slight 1366

Lighting Conditions=Daylight: street lights present Casualty Class=Driver/Rider Casualty Severity=Slight 1097

Lighting Conditions=Daylight: street lights present Casualty Severity=Slight Type of Vehicle=Car 1136

Weather Conditions=Fine without high winds Casualty Class=Driver/Rider Casualty Severity=Slight 1184

Weather Conditions=Fine without high winds Casualty Severity=Slight Sex of Casualty=Male 1066

Weather Conditions=Fine without high winds Casualty Severity=Slight Type of Vehicle=Car 1271

Size of set of large itemsets L(4): 1

Large Itemsets L(4):

Road Surface=Dry Lighting Conditions=Daylight: street lights present Weather Conditions=Fine without high winds Casualty Severity=Slight 1366

Best rules found:

1. Road Surface=Dry Sex of Casualty=Male 1093 ==> Weather Conditions=Fine without high winds 1069 <conf:(0.98)> lift:(1.16) lev:(0.1)
2. Road Surface=Dry Casualty Class=Driver/Rider 1149 ==> Weather Conditions=Fine without high winds 1121 <conf:(0.97)> lift:(1.16) lev:(0.1)
3. Road Surface=Dry Lighting Conditions=Daylight: street lights present 1560 ==> Weather Conditions=Fine without high winds 1121 <conf:(0.97)> lift:(1.16) lev:(0.1)
4. Road Surface=Dry Lighting Conditions=Daylight: street lights present Casualty Severity=Slight 1366 ==> Weather Conditions=Fine without high winds 1121 <conf:(0.97)> lift:(1.16) lev:(0.1)
5. Road Surface=Dry 1908 ==> Weather Conditions=Fine without high winds 1853 <conf:(0.97)> lift:(1.16) lev:(0.1)
6. Road Surface=Dry Casualty Severity=Slight 1662 ==> Weather Conditions=Fine without high winds 1611 <conf:(0.97)> lift:(1.16) lev:(0.1)
7. Road Surface=Dry Type of Vehicle=Car 1176 ==> Weather Conditions=Fine without high winds 1136 <conf:(0.97)> lift:(1.16) lev:(0.1)
8. Lighting Conditions=Daylight: street lights present Type of Vehicle=Car 1244 ==> Casualty Severity=Slight 1136 <conf:(0.97)> lift:(1.16) lev:(0.1)
9. Type of Vehicle=Car 1727 ==> Casualty Severity=Slight 1568 <conf:(0.91)> lift:(1.04) lev:(0.02) [60] conv:(1.5)
10. Road Surface=Dry Type of Vehicle=Car 1176 ==> Casualty Severity=Slight 1067 <conf:(0.91)> lift:(1.04) lev:(0.02)

Status

OK Log x 0

weka.associations.Apriori

**About**

Class implementing an Apriori-type algorithm.

More

Capabilities

car False

classIndex -1

delta 0.05

doNotCheckCapabilities False

lowerBoundMinSupport 0.5

metricType Confidence

minMetric 0.9

numRules 10

outputItemSets True

removeAllMissingCols False

significanceLevel -1.0

treatZeroAsMissing False

upperBoundMinSupport 1.0

verbose False

Open... Save... OK Cancel

Preprocess Classify Cluster Associate Select attributes Visualize

Associator

Choose Apriori -I -N 10 -T 0 -C 0.9 -D 0.05 -U 2.0 -M 1.0 -S -1.0 -c -1

Start Stop

Result list (right-click...)

11:14:18 - Apriori

11:18:55 - Apriori

11:19:11 - Apriori

11:19:13 - Apriori

Associator output

=== Run information ===

Scheme: weka.associations.Apriori -I -N 10 -T 0 -C 0.9 -D 0.05 -U 2.0 -M 1.0 -S -1.0 -c -1

Relation: 2015-weka.filters.unsupervised.attribute.Remove-R2-4,6,14

Instances: 2664

Attributes: 10

Reference Number

Accident Date

1st Road Class

Road Surface

Lighting Conditions

Weather Conditions

Casualty Class

Casualty Severity

Sex of Casualty

Type of Vehicle

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

No large itemsets and rules found!

**USING R-TOOL:**

```

> a=priori(data,parameter = list(sup=0.3,conf=0.9))
Apriori

Parameter specification:
confidence minval smax arem aval originalSupport maxtime support minlen maxlen
      0.9   0.1   1 none FALSE          TRUE     5   0.3     1    10
target  ext
rules FALSE

Algorithmic control:
filter tree heap memopt load sort verbose
  0.1 TRUE TRUE  FALSE TRUE    2    TRUE

Absolute minimum support count: 799

set item appearances ...[0 item(s)] done [0.00s].
set transactions ...[2393 item(s), 2664 transaction(s)] done [0.00s].
sorting and recoding items ... [10 item(s)] done [0.00s].
creating transaction tree ... done [0.02s].
checking subsets of size 1 2 3 4 5 done [0.00s].
writing ... [30 rule(s)] done [0.00s].
creating s4 object ... done [0.00s].
> |

```