

EXPERIMENT-9

FREQUENT PATTERN MINING USING ASSOCIATION RULE THROUGH WEKA AND R TOOLS

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Subject: CSA1672, Data warehouse and data mining

OUTPUT:

Preprocess | Classify | Cluster | Associate | Select attributes | Visualize

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

Filter: Choose **Discretize** -B 1.0 -M -1.0 -R first-last -precision 6 Apply Stop

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

Attributes
All | None | Invert | Pattern

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

Remove

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.

Status: OK Log x 0

Start Stop

Result list (right-click...)

11:14:18 - Apriori

Associator output

```

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 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 1121

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) conv:(1.0)
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) conv:(1.0)
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) conv:(1.0)
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) conv:(1.0)
5. Road Surface=Dry 1908 ==> Weather Conditions=Fine without high winds 1853 <conf:(0.97)> lift:(1.16) lev:(0.1) conv:(1.0)
6. Road Surface=Dry Casualty Severity=Slight 1662 ==> Weather Conditions=Fine without high winds 1611 <conf:(0.97)> lift:(1.16) lev:(0.1) conv:(1.0)
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) conv:(1.0)
8. Lighting Conditions=Daylight: street lights present Type of Vehicle=Car 1244 ==> Casualty Severity=Slight 1136 <conf:(0.91)> lift:(1.04) lev:(0.02) [60] conv:(1.0)
9. Type of Vehicle=Car 1727 ==> Casualty Severity=Slight 1568 <conf:(0.91)> lift:(1.04) lev:(0.02) [60] conv:(1.0)
10. Road Surface=Dry Type of Vehicle=Car 1176 ==> Casualty Severity=Slight 1067 <conf:(0.91)> lift:(1.04) lev:(0.02) [60] conv:(1.0)

```

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

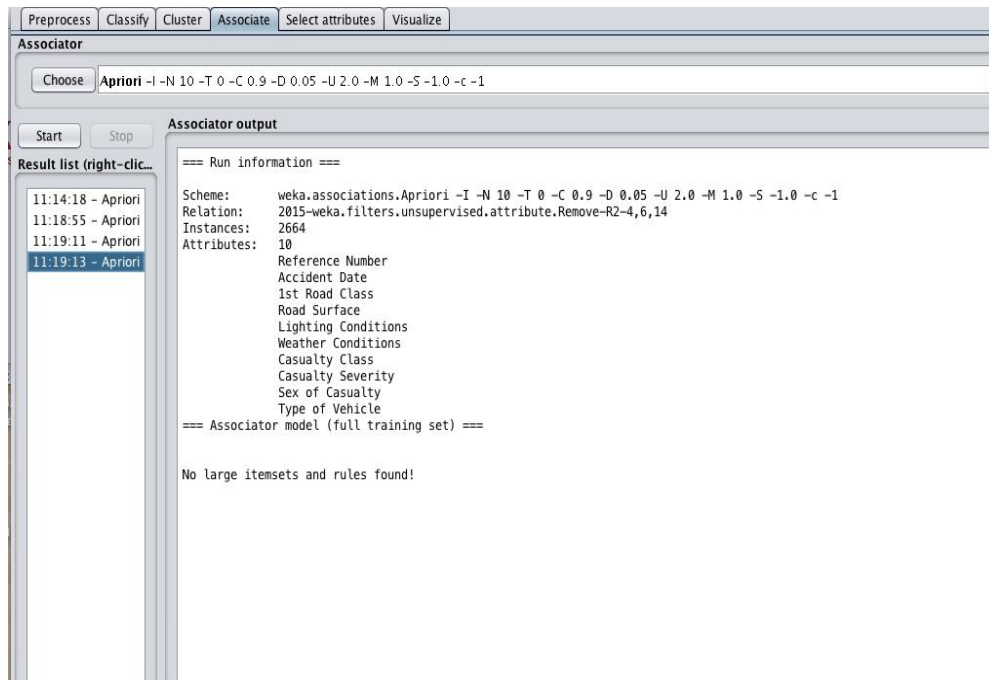
significanceLevel -1.0

treatZeroAsMissing False

upperBoundMinSupport 1.0

verbose False

Open... Save... OK Cancel



USING R-TOOL:

```
> a=apriori(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].
> |
```

