

Prajakta Deokule

3330

A1

ASSIGNMENT 2

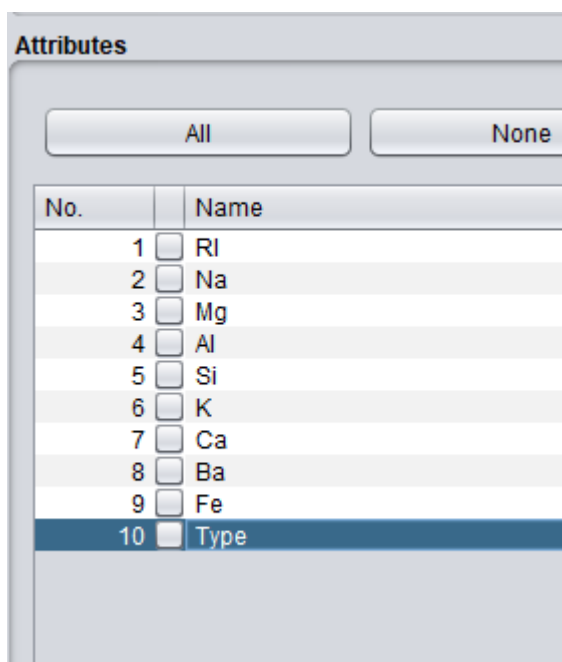
Load any one dataset in Weka and observe the following : List the attribute names and their types, Number of records in each dataset, class attribute (if any), Plot Histogram, Determine the number of records for each class, Visualize the data in various dimensions; Apply various pre-processing tasks; Apply classification OR clustering algorithms on the chosen dataset and observe the results.

Dataset taken- glass.arff

Instances:214

Attributes:10

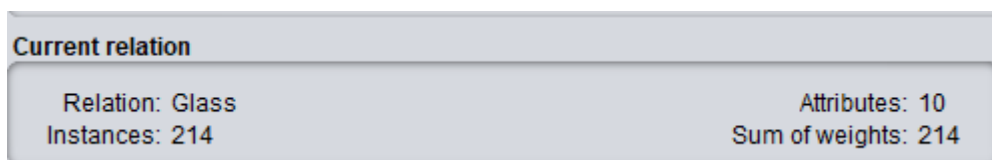
List the attribute name and their types



Attributes		
<input type="button" value="All"/> <input type="button" value="None"/>		
No.		Name
1	<input type="checkbox"/>	RI
2	<input type="checkbox"/>	Na
3	<input type="checkbox"/>	Mg
4	<input type="checkbox"/>	Al
5	<input type="checkbox"/>	Si
6	<input type="checkbox"/>	K
7	<input type="checkbox"/>	Ca
8	<input type="checkbox"/>	Ba
9	<input type="checkbox"/>	Fe
10	<input type="checkbox"/>	Type

All the attributes are numeric type.

Number of records in each dataset

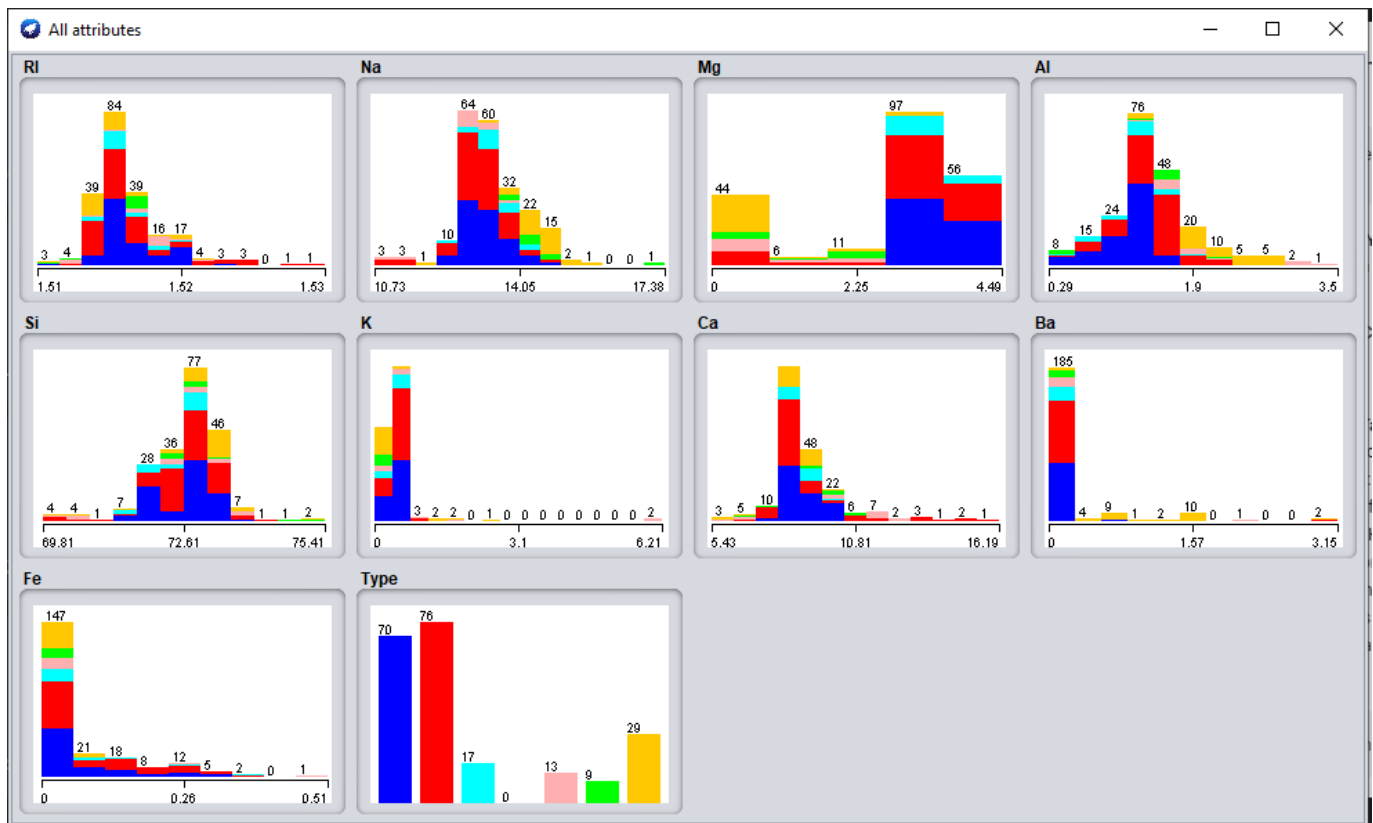


Current relation	
Relation: Glass	Attributes: 10
Instances: 214	Sum of weights: 214

Class attribute: **Type attribute**

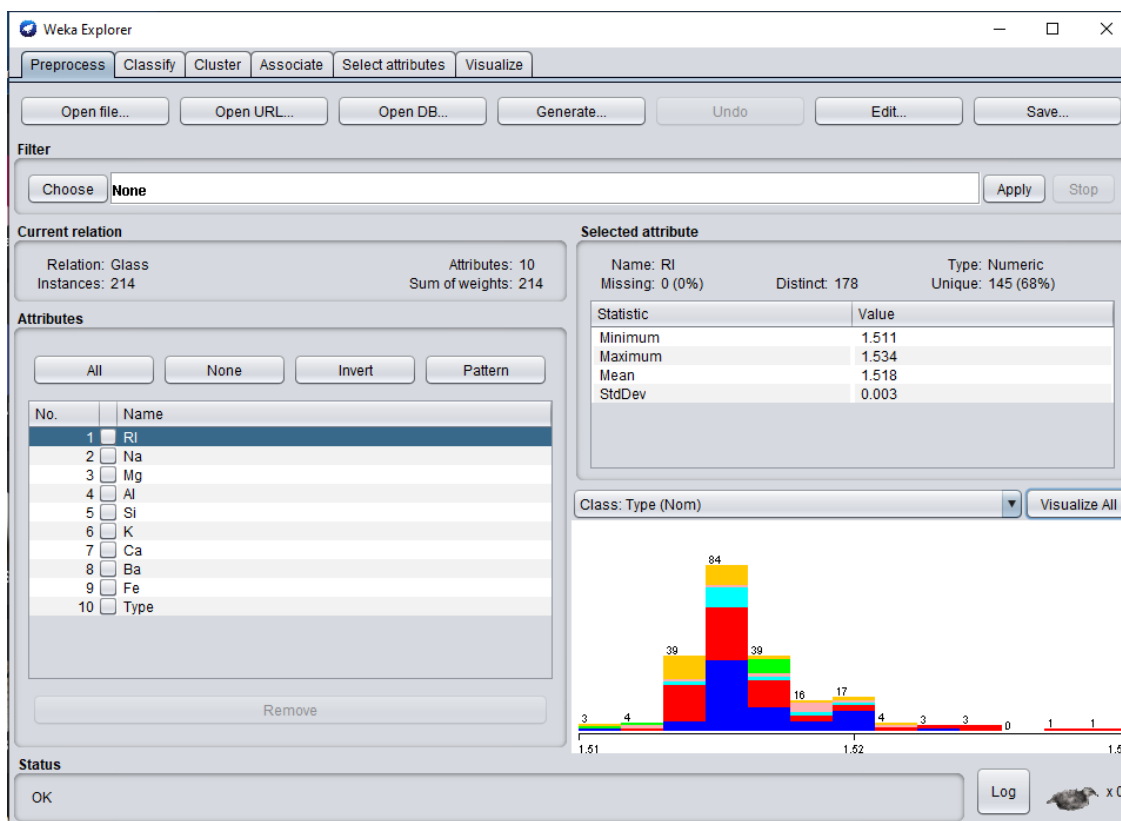
Plot Histogram

Visualize all attributes:



Plotting the histogram for selected attribute

Selected attribute RI



Weka Explorer

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

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

Filter

Choose **None** Apply Stop

Current relation

Relation: Glass Attributes: 10
Instances: 214 Sum of weights: 214

Attributes

All | None | Invert | Pattern

No.	Name
1	<input type="checkbox"/> RI
2	<input type="checkbox"/> Na
3	<input type="checkbox"/> Mg
4	<input type="checkbox"/> Al
5	<input type="checkbox"/> Si
6	<input checked="" type="checkbox"/> K
7	<input type="checkbox"/> Ca
8	<input type="checkbox"/> Ba
9	<input type="checkbox"/> Fe
10	<input type="checkbox"/> Type

Remove

Selected attribute

Name: K Type: Numeric
Missing: 0 (0%) Distinct: 65 Unique: 30 (14%)

Statistic	Value
Minimum	0
Maximum	6.21
Mean	0.497
StdDev	0.652

Class: Type (Nom) Visualize All

The histogram shows the distribution of attribute K values, ranging from 0 to 6.21. The x-axis is labeled with 0, 3.1, and 6.21. The y-axis represents frequency, with labels 77 and 127. The bars are colored by class Type: blue (Type 1), red (Type 2), green (Type 3), yellow (Type 4), and cyan (Type 5). The distribution is skewed to the right, with a peak around 3.1.

Status

OK Log x 0

The screenshot shows the Weka Explorer interface. The 'Selected attribute' table is displayed, showing the distribution of the 'Type' attribute. The table has columns for 'No.', 'Label', 'Count', and 'Weight'. The data is as follows:

No.	Label	Count	Weight
1	build wind float	70	70.0
2	build wind non-float	76	76.0
3	vehic wind float	17	17.0
4	vehic wind non-float	0	0.0
5	containers	13	13.0
6	tableware	9	9.0
7	headlamps	29	29.0

Below the table, a bar chart visualizes the counts for each attribute value. The x-axis represents the attribute values (1-7) and the y-axis represents the count. The bars are colored: 1 (blue, 70), 2 (red, 76), 3 (cyan, 17), 4 (black, 0), 5 (pink, 13), 6 (green, 9), and 7 (yellow, 29).

Weka Explorer: Visualizing Glass

X: RI (Num) Y: Type (Nom)

Colour: Type (Nom) Select Instance

Reset Clear Open Save Jitter

Plot: Glass

h
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1.51 1.52 1.53

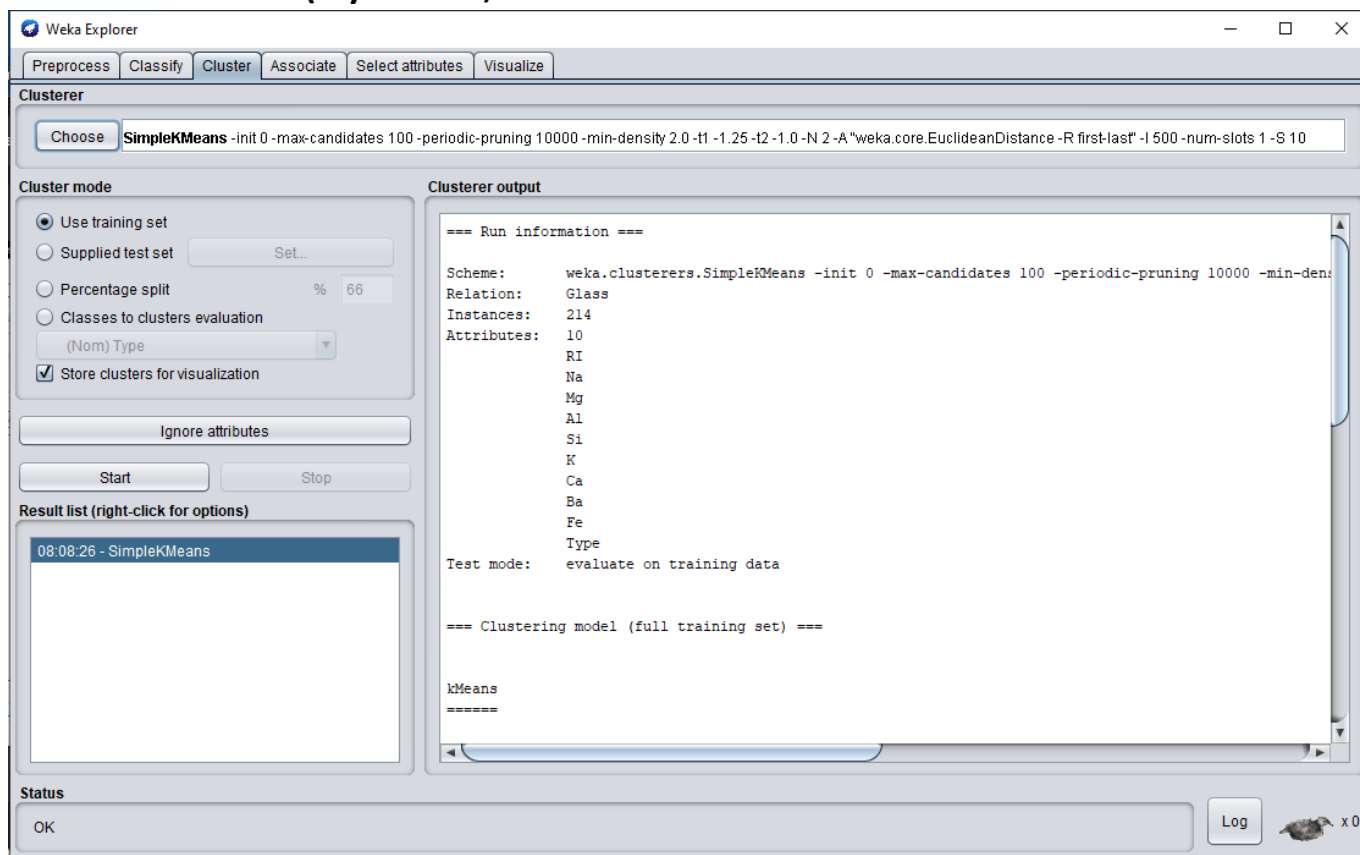
Class colour

build wind float build wind non-float vehic wind float vehic wind non-float containers tableware headlamps

Clustering-Appling K Means

k-Means Clustering is an unsupervised learning algorithm that is used for clustering .It takes a bunch of unlabelled points and tries to group them into “k” number of clusters. The “k” in k-means denotes the number of clusters you want to have in the end.

No of Clusters=2 (By default)



Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation
(Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

08:08:26 - SimpleKMeans

Status

OK Log x0

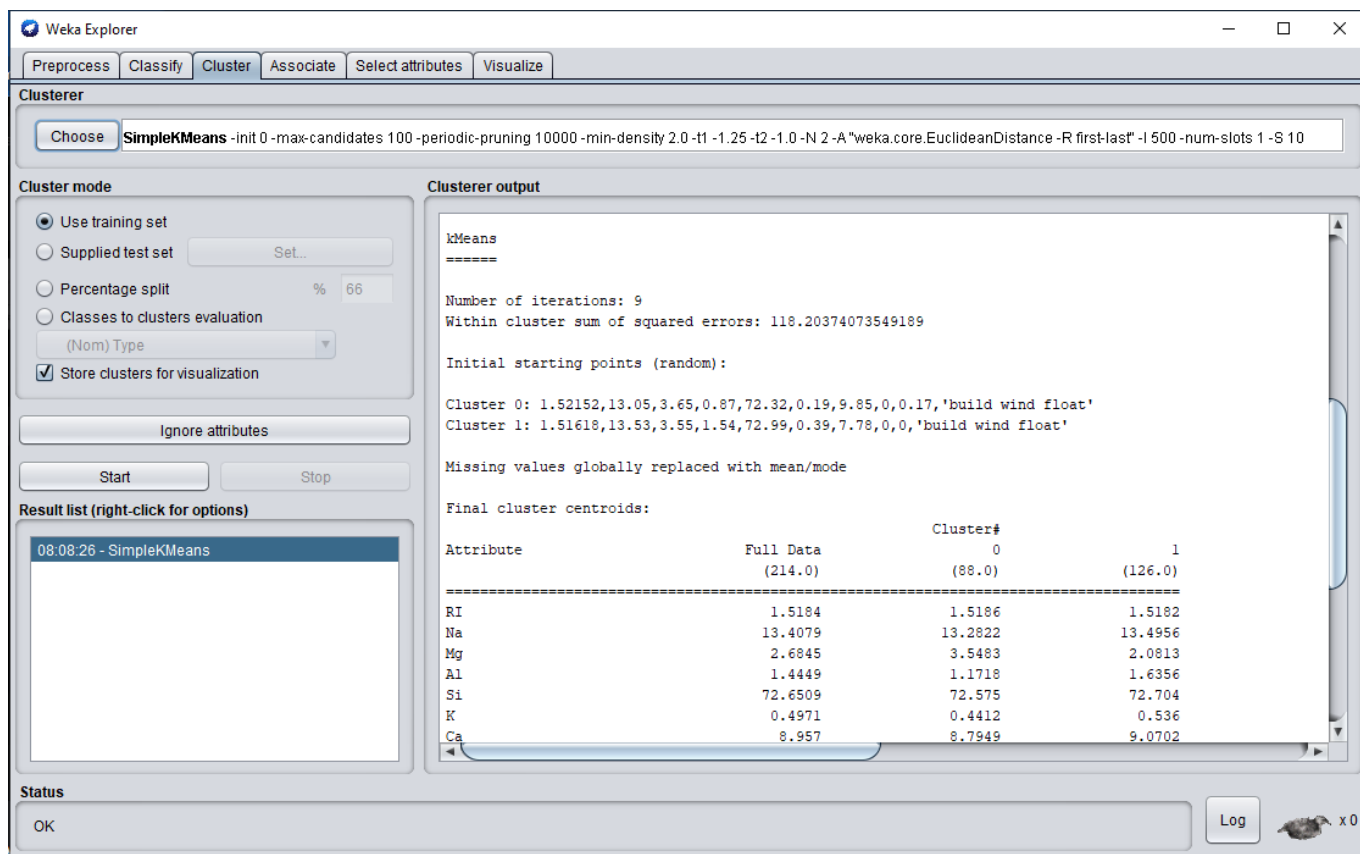
Clusterer output

```
=== Run information ===

Scheme:      weka.clusterers.SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num-slots 1 -S 10
Relation:    Glass
Instances:   214
Attributes:  10
              RI
              Na
              Mg
              Al
              Si
              K
              Ca
              Ba
              Fe
              Type
Test mode:   evaluate on training data

=== Clustering model (full training set) ===

kMeans
=====
```



Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation
(Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

08:08:26 - SimpleKMeans

Status

OK Log x0

Clusterer output

```
kMeans
=====

Number of iterations: 9
Within cluster sum of squared errors: 118.20374073549189

Initial starting points (random):

Cluster 0: 1.52152,13.05,3.65,0.87,72.32,0.19,9.85,0,0.17,'build wind float'
Cluster 1: 1.51618,13.53,3.55,1.54,72.99,0.39,7.78,0,0,'build wind float'

Missing values globally replaced with mean/mode

Final cluster centroids:

Attribute          Full Data          Cluster#
                   (214.0)            0              1
                   (88.0)            (126.0)
=====
RI                  1.5184             1.5186             1.5182
Na                  13.4079            13.2822            13.4956
Mg                  2.6845             3.5483             2.0813
Al                  1.4449             1.1718             1.6356
Si                  72.6509            72.575             72.704
K                   0.4971             0.4412             0.536
Ca                  8.957              8.7949             9.0702
```

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

08:08:26 - SimpleKMeans

Clusterer output

```
=====
RI              1.5184              1.5186              1.5182
Na              13.4079             13.2822             13.4956
Mg              2.6845              3.5483              2.0813
Al              1.4449              1.1718              1.6356
Si              72.6509             72.575              72.704
K               0.4971              0.4412              0.536
Ca              8.957              8.7949              9.0702
Ba              0.175              0.0118              0.289
Fe              0.057              0.0564              0.0575
Type            build wind non-float  build wind float build wind non-float

Time taken to build model (full training data) : 0.02 seconds

=== Model and evaluation on training set ===

Clustered Instances

0      88 ( 41%)
1     126 ( 59%)
```

Status

OK Log x 0

No of Clusters=5

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 5 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

17:00:54 - SimpleKMeans

Clusterer output

```
=== Run information ===

Scheme:      weka.clusterers.SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 5 -A
Relation:    Glass
Instances:   214
Attributes:  10
RI
Na
Mg
Al
Si
K
Ca
Ba
Fe
Type
Test mode:   evaluate on training data

=== Clustering model (full training set) ===

kMeans
=====

Number of iterations: 7
Within cluster sum of squared errors: 66.13662059320134
```

Status

OK Log x 0

Type here to search

ENG 17:01 12-03-2022

Weka Explorer

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

Clusterer

Choose **SimpleKMeans** -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 5 -A "weka.core.EuclideanDistance" -R first-last -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

17:00:54 - SimpleKMeans

Clusterer output

Number of iterations: 7
 Within cluster sum of squared errors: 66.13662059320134

Initial starting points (random):

Cluster 0: 1.52152,13.05,3.65,0.87,72.32,0.19,9.85,0,0.17,'build wind float'
 Cluster 1: 1.51618,13.53,3.55,1.54,72.99,0.39,7.78,0,0,'build wind float'
 Cluster 2: 1.51316,13.02,0,3.04,70.48,6.21,6.96,0,0,containers
 Cluster 3: 1.51625,13.36,3.58,1.49,72.72,0.45,8.21,0,0,'build wind non-float'
 Cluster 4: 1.5159,13.02,3.58,1.51,73.12,0.69,7.96,0,0,'build wind non-float'

Missing values globally replaced with mean/mode

Final cluster centroids:

Attribute	Full Data (214.0)	Cluster# 0 (33.0)	1 (57.0)	2 (36.0)	3 (20.0)
RI	1.5184	1.52	1.5178	1.5168	1.5234
Na	13.4079	13.4312	13.2588	14.3953	12.7325
Mg	2.6845	3.6433	3.353	0.5297	0.3945
Al	1.4449	0.9745	1.3051	2.1422	1.3415
Si	72.6509	72.3003	72.7826	72.8225	72.469
K	0.4971	0.3136	0.4693	0.6806	0.301
Ca	8.957	9.1561	8.6481	8.435	12.3615
Ba	0.175	0.0073	0.014	0.8989	0.1695
Fe	0.057	0.1294	0.0058	0.0108	0.1005
Type	build wind non-float	build wind float	build wind float	headlamps build wind non-float	build wind

Status: OK Log

Weka Explorer

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

Clusterer

Choose **SimpleKMeans** -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 5 -A "weka.core.EuclideanDistance" -R first-last -I 500 -num-slots 1 -S 10

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

17:00:54 - SimpleKMeans

Clusterer output

Time taken to build model (full training data) : 0.02 seconds

=== Model and evaluation on training set ===

Clustered Instances

0	33 (15%)
1	57 (27%)
2	36 (17%)
3	20 (9%)
4	68 (32%)

Status: OK Log

No of clusters=7

Here type attribute has been ignored

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 7 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

15:12:17 - SimpleKMeans
15:42:39 - SimpleKMeans
16:04:09 - SimpleKMeans
16:08:38 - SimpleKMeans

Cluster output

```

=== Run information ===

Scheme:      weka.clusterers.SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning
Relation:     Glass
Instances:    214
Attributes:   10
              RI
              Na
              Mg
              Al
              Si
              K
              Ca
              Ba
              Fe

Ignored:      Type
Test mode:    evaluate on training data

=== Clustering model (full training set) ===

kMeans
=====

Number of iterations: 12
Within cluster sum of squared errors: 17.199155810403063

```

Status

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose SimpleKMeans -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 7 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

15:12:17 - SimpleKMeans
15:42:39 - SimpleKMeans
16:04:09 - SimpleKMeans
16:08:38 - SimpleKMeans

Cluster output

```

Initial starting points (random):

Cluster 0: 1.52152,13.05,3.65,0.87,72.32,0.19,9.85,0,0.17
Cluster 1: 1.51618,13.53,3.55,1.54,72.99,0.39,7.78,0,0
Cluster 2: 1.51316,13.02,0,3.04,70.48,6.21,6.96,0,0
Cluster 3: 1.51625,13.36,3.58,1.49,72.72,0.45,8.21,0,0
Cluster 4: 1.5159,13.02,3.58,1.51,73.12,0.69,7.96,0,0
Cluster 5: 1.51567,13.29,3.45,1.21,72.74,0.56,8.57,0,0
Cluster 6: 1.51655,12.75,2.85,1.44,73.27,0.57,8.79,0.11,0.22

Missing values globally replaced with mean/mode

Final cluster centroids:

Attribute  Full Data  Cluster#
              (214.0)    0          1          2          3          4          5
=====
RI          1.5184    1.5179    1.5163    1.5132    1.5221    1.5172    1.5197
Na          13.4079    13.0468    14.6783    13.01    13.8645    13.1819    13.79
Mg          2.6845     3.4613    0.1117     0        3.6923    3.4999    1.8581
Al          1.4449     1.2824    2.2412     3.03    0.8518    1.4116    1.5962
Si          72.6509    72.7387    73.1625    70.59    71.7232    72.7804    72.3831
K           0.4971     0.5255    0.1467     6.21    0.1386    0.5935    0.2787
Ca          8.957      8.6832    8.4479     6.945    9.5832    8.2962    9.7962
Ba          0.175      0.0195    1.1292     0        0.0364    0.0315    0.1694
Fe          0.057      0.2203    0.0163     0        0.0214    0.012    0.0325

```

Status

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose **SimpleKMeans** -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 7 -A "weka.core.EuclideanDistance -R first-last" -I 500 -num

Cluster mode

☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation
 (Nom) Type
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

15:12:17 - SimpleKMeans
 15:42:39 - SimpleKMeans
 16:04:09 - SimpleKMeans
 16:08:38 - SimpleKMeans

Clusterer output

RI	1.5184	1.5179	1.5163	1.5132	1.5221	1.5172	1.5197
Na	13.4079	13.0468	14.6783	13.01	13.8645	13.1819	13.79
Mg	2.6845	3.4613	0.1117	0	3.6923	3.4999	1.8581
Al	1.4449	1.2824	2.2412	3.03	0.8518	1.4116	1.5962
Si	72.6509	72.7387	73.1625	70.59	71.7232	72.7804	72.3831
K	0.4971	0.5255	0.1467	6.21	0.1386	0.5935	0.2787
Ca	8.957	8.6832	8.4479	6.945	9.5832	8.2962	9.7962
Ba	0.175	0.0195	1.1292	0	0.0364	0.0315	0.1694
Fe	0.057	0.2203	0.0163	0	0.0214	0.012	0.0325

Time taken to build model (full training data) : 0 seconds

=== Model and evaluation on training set ===

Clustered Instances

0	38	(18%)
1	24	(11%)
2	2	(1%)
3	22	(10%)
4	94	(44%)
5	16	(7%)
6	18	(8%)

Status

Classification

Classify Using Nearest Neighbour Algorithm for Classification

KNN Algorithm is a supervised classification algorithm

For KNN use lazy IBk under classify

For KNN=1(by default)

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose IBk -K 1 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"

Test options

☐ Use training set

☐ Supplied test set Set...

☒ Cross-validation Folds 10

☐ Percentage split % 66

More options...

(Nom) Type

Start Stop

Result list (right-click for options)

08:47:25 - trees.RandomForest

09:17:55 - lazy.IBk

Classifier output

```
=== Run information ===

Scheme:      weka.classifiers.lazy.IBk -K 1 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"
Relation:    Glass
Instances:   214
Attributes:  10
             RI
             Na
             Mg
             Al
             Si
             K
             Ca
             Ba
             Fe
             Type
Test mode:   10-fold cross-validation

=== Classifier model (full training set) ===

IBk instance-based classifier
using 1 nearest neighbour(s) for classification

Time taken to build model: 0 seconds
```

Status

OK Log x0

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose IBk -K 1 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"

Test options

☐ Use training set

☐ Supplied test set Set...

☒ Cross-validation Folds 10

☐ Percentage split % 66

More options...

(Nom) Type

Start Stop

Result list (right-click for options)

08:47:25 - trees.RandomForest

09:17:55 - lazy.IBk

Classifier output

```
Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances      151           70.5607 %
Incorrectly Classified Instances    63           29.4393 %
Kappa statistic                    0.6005
Mean absolute error                 0.0897
Root mean squared error             0.2852
Relative absolute error             42.3747 %
Root relative squared error         87.8627 %
Total Number of Instances          214

=== Detailed Accuracy By Class ===
```

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.786	0.167	0.696	0.786	0.738	0.602	0.806	0.628	build wind float
	0.671	0.130	0.739	0.671	0.703	0.554	0.765	0.629	build wind non-float
	0.294	0.051	0.333	0.294	0.313	0.258	0.590	0.144	vehic wind float
	?	0.000	?	?	?	?	?	?	vehic wind non-float
	0.769	0.030	0.625	0.769	0.690	0.671	0.895	0.456	containers
	0.778	0.015	0.700	0.778	0.737	0.726	0.838	0.598	tableware
	0.793	0.011	0.920	0.793	0.852	0.834	0.884	0.772	headlamps
Weighted Avg.	0.706	0.109	0.709	0.706	0.704	0.598	0.792	0.598	

Status

OK Log x0

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose IBk -K 1 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"

Test options

☐ Use training set

☐ Supplied test set Set...

☒ Cross-validation Folds 10

☐ Percentage split % 66

More options...

(Nom) Type

Start Stop

Result list (right-click for options)

08:47:25 - trees.RandomForest

09:17:55 - lazy.IBk

Status

OK

Log x0

Classifier output

```

=== Detailed Accuracy By Class ===

      TP Rate  FP Rate  Precision  Recall  F-Measure  MCC  ROC Area  PRC Area  Class
      0.786   0.167   0.696   0.786   0.738   0.602   0.806   0.628   build wind float
      0.671   0.130   0.739   0.671   0.703   0.554   0.765   0.629   build wind non-float
      0.294   0.051   0.333   0.294   0.313   0.258   0.590   0.144   vehic wind float
      ?      0.000   ?      ?      ?      ?      ?      ?      vehic wind non-float
      0.769   0.030   0.625   0.769   0.690   0.671   0.895   0.456   containers
      0.778   0.015   0.700   0.778   0.737   0.726   0.838   0.598   tableware
      0.793   0.011   0.920   0.793   0.852   0.834   0.884   0.772   headlamps
Weighted Avg.  0.706   0.109   0.709   0.706   0.704   0.598   0.792   0.598

=== Confusion Matrix ===

 a b c d e f g <-- classified as
55 9 6 0 0 0 0 | a = build wind float
15 51 4 0 3 2 1 | b = build wind non-float
9 3 5 0 0 0 0 | c = vehic wind float
0 0 0 0 0 0 0 | d = vehic wind non-float
0 2 0 0 10 0 1 | e = containers
0 1 0 0 1 7 0 | f = tableware
0 3 0 0 2 1 23 | g = headlamps

```

For KNN=5

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose IBk -K 5 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"

Test options

☐ Use training set

☐ Supplied test set Set...

☒ Cross-validation Folds 10

☐ Percentage split % 66

More options...

(Nom) Type

Start Stop

Result list (right-click for options)

08:47:25 - trees.RandomForest

09:17:55 - lazy.IBk

09:23:47 - lazy.IBk

Status

OK

Log x0

Classifier output

```

=== Run information ===

Scheme:      weka.classifiers.lazy.IBk -K 5 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last"
Relation:    Glass
Instances:   214
Attributes:  10
RI
Na
Mg
Al
Si
K
Ca
Ba
Fe
Type
Test mode:   10-fold cross-validation

=== Classifier model (full training set) ===

IB1 instance-based classifier
using 5 nearest neighbour(s) for classification

Time taken to build model: 0 seconds

```

Weka Explorer

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Classifier output

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

Correctly Classified Instances	145	67.757 %
Incorrectly Classified Instances	69	32.243 %
Kappa statistic	0.5469	
Mean absolute error	0.1085	
Root mean squared error	0.2563	
Relative absolute error	51.243 %	
Root relative squared error	78.9576 %	
Total Number of Instances	214	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.843	0.229	0.641	0.843	0.728	0.582	0.867	0.713	build wind float
	0.684	0.174	0.684	0.684	0.684	0.510	0.848	0.756	build wind non-float
	0.000	0.010	0.000	0.000	0.000	-0.029	0.642	0.161	vehic wind float
	?	0.000	?	?	?	?	?	?	vehic wind non-float
	0.385	0.025	0.500	0.385	0.435	0.407	0.952	0.546	containers
	0.667	0.010	0.750	0.667	0.706	0.695	0.909	0.565	tableware
	0.793	0.016	0.885	0.793	0.836	0.814	0.890	0.843	headlamps
Weighted Avg.	0.678	0.142	0.635	0.678	0.651	0.533	0.853	0.685	

Status

OK Log x 0

Weka Explorer

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Classifier

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Classifier output

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=== Confusion Matrix ===

	a	b	c	d	e	f	g	<-- classified as
59	10	1	0	0	0	0	0	a = build wind float
20	52	1	0	3	0	0	0	b = build wind non-float
12	5	0	0	0	0	0	0	c = vehic wind float
0	0	0	0	0	0	0	0	d = vehic wind non-float
0	5	0	0	5	0	3	0	e = containers
0	2	0	0	1	6	0	0	f = tableware
1	2	0	0	1	2	23	0	g = headlamps

Status

OK Log x 0