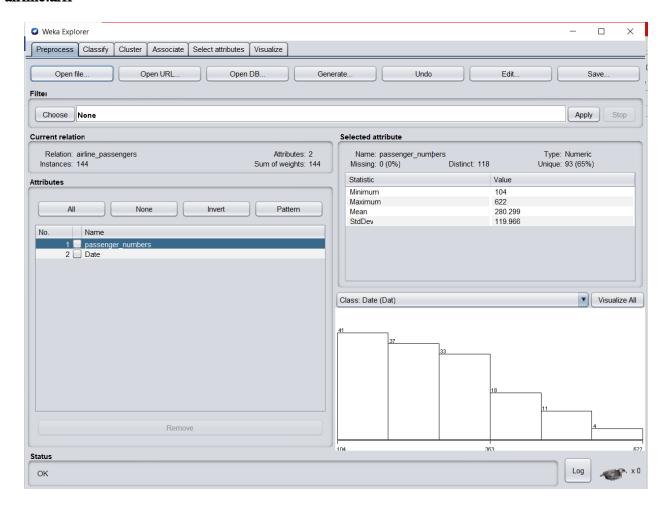
# **Knowledge Discovery and Data Mining Lab-01**

Name: Kunal Sanjay Patil

PRN: 20190802025

#### AIM:

#### 1. airline.arff



The airline dataset consists; Number of instances: 144 Attribute information: Passenger\_numbers:

Type: Numeric, Missing values: 0, Distinct: 118, Unique: 93

Maximum value: 622, Minimum value: 104, Mean: 280.299, Standard Deviation: 119.966

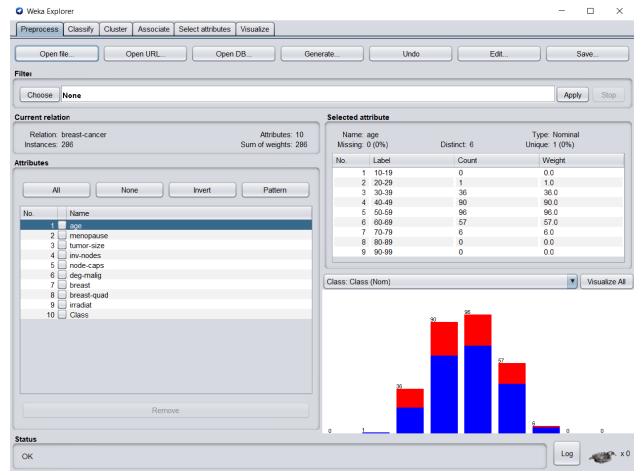
#### Date:

Type: Date, Missing values: 0, Distinct: 144, Unique: 144

Maximum: -286695000000, Minimum: -662707800000, Mean: -474769800000, Standard

Deviation: 109697660835.156

#### 2. Breast-cancer.arff



The breast-cancer dataset consists;

Number of instances: 286 Attribute Information:

1) age:

Type: Nominal, Missing values: 0, Distinct: 6, Unique: 1

Label	Count	Weight
10-19	0	0.0
20-29	1	1.0
30-39	36	36.0
40-49	90	90.0
50-59	96	96.0
60-69	57	57.0
70-79	6	6.0
80-89	0	0.0
90-99	0	0.0

2) menopause:

Type: Nominal, Missing: 0, Distinct: 3, Unique: 0

Label	Count	Weight
lt40	7	7.0
ge40	129	129.0
premeno	150	150.0

# 3) tumor-size:

Type: Nominal, Missing: 0, Distinct: 11, Unique: 0

Label	Count	Weight
0-4	8	8.0
5-9	4	4.0
10-14	28	28.0
15-19	30	30.0
20-24	50	50.0
25-29	54	54.0
30-34	60	60.0
35-39	19	19.0
40-44	22	22.0
45-49	3	3.0
50-54	8	8.0
55-59	0	0.0

## 4) inv-nodes:

Type: Nominal, Missing: 0, Distinct: 7, Unique: 1

Label	Count	Weight
0-2	213	213.0
3-5	36	36.0
6-8	17	17.0
9-11	10	10.0
12-14	3	3.0
15-17	6	6.0
18-20	0	0.0
21-23	0	0.0
24-26	1	1.0
27-29	0	0.0
30-32	0	0.0
33-35	0	0.0
36-39	0	0.0

# 5) node-caps:

Type: Nominal, Missing 8, Distinct: 2, Unique: 0

Label	Count	Weight
yes	56	56.0
no	222	222.0

# 6) deg-malig:

Type: Nominal, Missing:0, Distinct: 3, Unique: 0

Label	Count	Weight	
1	71	71.0	
2	130	130.0	
3	85	85.0	

## 7) breast:

Type: Nominal, Missing: 0, Distinct: 2, Unique: 0

Label	Count	Weight
left	152	152.0
right	134	134.0

# 8) breast-quad:

Type: Nominal, Missing: 1, Distinct: 5, Unique: 0

Label	Count	Weight
left_up	97	97.0
left_low	110	110.0
right_up	33	33.0
right_low	24	24.0
central	21	21.0

# 9) irradiat:

Type: Nominal, Missing:0, Distinct: 2, Unique: 0

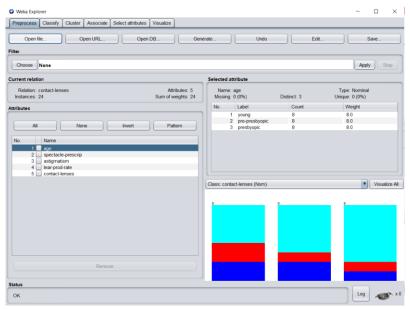
Label	Count	Weight
yes	68	68.0
no	218	218.0

# 10) Class:

Type: Nominal, Missing: 0, Distinct: 2, Unique: 0

Label	Count	Weight
no-recurrence	201	201.0
recurrence-ev	85	85.0

## 3. Contact-lenses.arff



The contact-lenses dataset consists:

No. of instances: 24 No. of attributes: 5

Class objects: age, spectacle-prescrip, astigmatism, tear-prod-rate, contact-lenses

Attribute Information:

1) age:

Type: Nominal, Missing: 0, Distinct: 3, Unique: 0

Label	Count
young	8
pre-presbyopic	8
presbyopic	8

2) spectacle-prescrip:

Type: Nominal, Missing: 0, Distinct: 2, Unique: 0

Label	Count
myope	12
hypermetrope	12

3) astigmatism:

Type: Nominal, Missing: 0, Distinct: 2, Unique: 0

Label	Count
no	12
yes	12

4) tear-prod-rate:

Type: Nominal, Missing: 0, Distinct: 2, Unique: 0

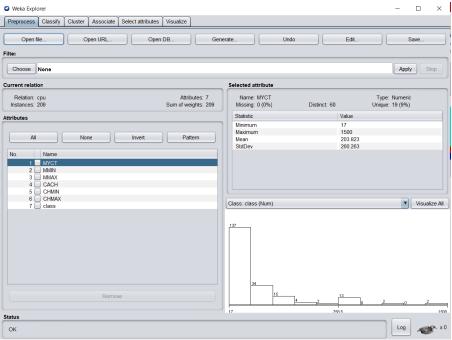
Label	Count
reduced	12
normal	12

## 5) contact-lenses:

Type: Nominal, Missing: 0, Distinct: 3, Unique: 0

Label	Count
soft	5
hard	4
none	15

# 4. Cpu.arff



The cpu dataset consists:

No. of instances: 209 No. of attributes: 7

Class objects: MYCT, MMIN, MMAX, CACH, CHMIN, CHMAX, class

Data type: Numeric Missing Values: 0 Attribute information:

1) MYCT:

Distinct: 60, Unique: 19

Minimum value: 17, Maximum value: 1500, Mean: 203.823, Standard Deviation:

260.263

## 2) MMIN:

Distinct: 25, Unique: 11

Minimum value: 64, Maximum value: 32000, Mean: 2867.981, Standard Deviation:

3878.743

#### 3) MMAX:

Distinct: 23, Unique: 6,

Minimum value: 64, Maximum value: 64000, Mean: 11796.153, Standard Deviation:

11726.564

#### 4) CACH:

Distinct: 22, Unique: 4

Minimum: 0, Maximum: 256, Mean: 25.206, Standard Deviation: 40.629

#### 5) CHMIN:

Minimum: 0, Maximum: 52, Mean: 4.699, Standard Deviation: 6.816

#### 6) CHMAX:

Minimum: 0, Maximum: 176, Mean: 18.268, Standard Deviation: 25.997

#### 7) Class

Minimum: 6, Maximum: 1150, Mean: 105.622, Standard Deviation: 160.831

#### 5. Cpu, with vendor arff



No. of instances: 209 No. of attributes: 8 Missing Values: 0

#### Attribute information:

#### 1) Vendor:

Type: Nominal, Missing: 0, Distinct: 30, Unique: 4 Labels: adviser, amdahl, apollo, basf, bti, burroughs, c.r.d, cdc, cambex, dec, dg, formation, four-phase, gould, hp, harris, honeywell, ibm, ipl, magnuson, microdata, nas, ncr, nixdorf, perkin-elmer, prime, siemens, sperry, sratus, wang

#### 2) MYCT:

Distinct: 60, Type: Numeric, Unique: 19 Minimum value: 17, Maximum value: 1500, Mean: 203.823, Standard Deviation: 260.263

#### 3) MMIN:

Type: Numeric, Distinct: 25, Unique: 11 Minimum: 64, Maximum: 32000, Mean: 2867.981, Standard Deviation: 38783743

#### 4) MMAX:

Type: Numeric, Distinct: 23, Unique: 6 Minimum value: 64, Maximum value: 64000, Mean: 11796.153, Standard Deviation: 11726.564

#### 8) CACH:

Distinct: 22, Unique: 4 Minimum: 0, Maximum: 256, Mean: 25.206, Standard Deviation: 40.629

#### 9) CHMIN:

Minimum: 0, Maximum: 52, Mean: 4.699, Standard Deviation: 6.816

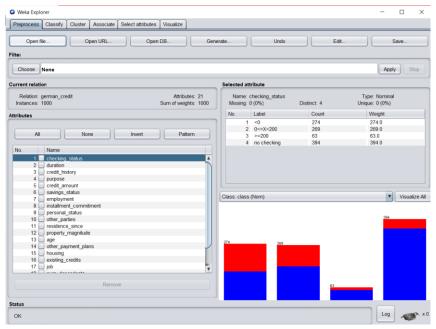
#### 10) CHMAX:

Minimum: 0, Maximum: 176, Mean: 18.268, Standard Deviation: 25.997

#### 11) Class

Minimum: 6, Maximum: 1150, Mean: 105.622, Standard Deviation: 160.831

#### 6. Credit-g.arff



No. of instances: 1000 No. of attributes: 21 Missing values: 0 Attribute information:

1) Checking\_status:

Type: Nominal, Distinct:4, Unique: 0

Label	Count
<0	274
0<=X<200	269
>=200	63
no checking	394

#### 2) Duration:

Type: Numeric, Distinct: 33, Unique: 5

Minimum: 4, Maximum: 72, Mean: 20.903, Standard Deviation: 12.059

## 3) Credit\_history:

Type: Nominal, Distinct: 5, Unique: 0

Label	Count
no credits/all p	40
all paid	49
existing paid	530
delayed previo	88
critical/other e	293

## 4) Purpose:

Type: nominal, Distinct: 10, Unique: 0

Label	Count
new car	234
used car	103
furniture/equip	181
radio/tv	280
domestic appli	12
repairs	22
education	50
vacation	0
retraining	9
business	97
other	12

## 5) Credit\_amount:

Type: Numeric, Distinct: 921, Unique: 847

Statistic	Value
Minimum	250
Maximum	18424
Mean	3271.258
StdDev	2822.737

# 6) Savings\_status:

Type: Nominal, Distinct: 5, Unique: 0

Label	Count
<100	603
100<=X<500	103
500<=X<1000	63
>=1000	48
no known savi	183

## 7) Employment:

Type: Nominal, Distinct: 5, Unique: 0

* 1	
Label	Count
unemployed	62
<1	172
1<=X<4	339
4<=X<7	174
>=7	253

# 8) Installment\_commitment:

Type: Numeric, Distinct: 4, Unique: 0

Minimum: 1, Maximum, 4, Mean: 2.973, Standard Deviation: 1.119

## 9) Personal\_status:

Type: Nominal, Distinct: 4, Unique: 0

Label	Count
male div/sep	50
female div/dep	310
male single	548
male mar/wid	92
female single	0

# 10) Other\_parties:

Type: Nominal, Distinct: 3, unique: 0

Label	Count
none	907
co applicant	41
guarantor	52

# 11) Residence\_since:

Type: Numeric, Distinct: 4

Statistic	Value
Minimum	1
Maximum	4
Mean	2.845
StdDev	1.104

# 12) Property\_magnitude:

Type: Nominal, Distinct: 4, Unique: 0

Label	Count
real estate	282
life insurance	232
car	332
no known pro	154

# 13) Age:

Type: Numeric, Distinct: 53, Unique:1

· · · · · · · · · · · · · · · · · · ·
Value
19
75
35.546
11.375

# 14) Other\_payment\_plans:

Type: Nominal, Distinct: 3, Unique: 0

Label	Count	
bank	139	
stores	47	
none	814	

# 15) Housing:

Type: Nominal, Distinct: 3

Label	Count
rent	179
own	713
for free	108

# 16) Existing\_credits:

Type: Numeric, Distinct: 4

Statistic	Value
Minimum	1
Maximum	4
Mean	1.407
StdDev	0.578

## 17) Job:

Type: Nominal, Distinct: 4, Unique: 0

Label	Count
unemp/unskill	22
unskilled resid	200
skilled	630
high qualif/self	148

# 18) Num\_dependents:

Type: Numeric, Distinct: 2, Unique: 0

Statistic	Value
Minimum	1
Maximum	2
Mean	1.155
StdDev	0.362

# 19) Own\_telephone:

Type: Nominal, Distinct: 4

Label	Count
none	596
yes	404

# 20) Foreign\_worker:

Type: Nominal, Distinct: 2

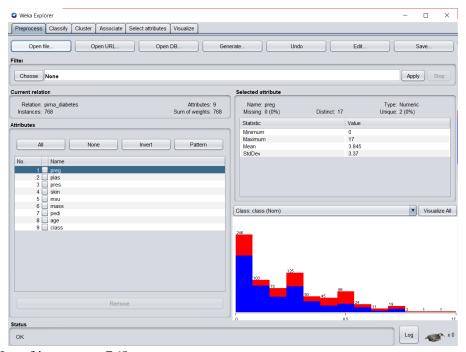
Label	Count	
yes	963	
no	37	

# 21) Class:

Type: Nominal, Distinct: 2

· ·	
Label	Count
good	700
bad	300

## 7. diabetes.arff



No. of instances: 768 No. of attributes: 9 Attribute information:

## 1) preg:

Type: Numeric, Distinct: 17, Unique: 2

Statistic	Value
Minimum	0
Maximum	17
Mean	3.845
StdDev	3.37

## 2) plas:

Type: Numeric, Distinct: 136, Unique: 19

Statistic	Value
Minimum	0
Maximum	199
Mean	120.895
StdDev	31.973

# 3) pres:

Type: Numeric, Distinct: 47, Unique: 8

Statistic	Value
Minimum	0
Maximum	122
Mean	69.105
StdDev	19.356

# 4) skin:

Type: Numeric, Distinct: 51, Unique: 5

Statistic	Value
Minimum	0
Maximum	99
Mean	20.536
StdDev	15.952

## 5) insu:

Type: Numeric, Distinct: 186, Unique: 93

Statistic	Value
Minimum	0
Maximum	846
Mean	79.799
StdDev	115.244

#### 6) mass:

Type: Numeric, Distinct: 248, Unique: 76

	· -	-
5	Statistic	Value
I	Minimum	0
I	Maximum	67.1
1	Mean	31.993
	StdDev	7.884

# 7) pedi:

Type: Numeric, Distinct: 517, Unique: 346

· · · · · · · · · · · · · · · · · · ·	
Statistic	Value
Minimum	0.078
Maximum	2.42
Mean	0.472
StdDev	0.331

## 8) age:

Type: Numeric, Distinct: 52, Unique: 5

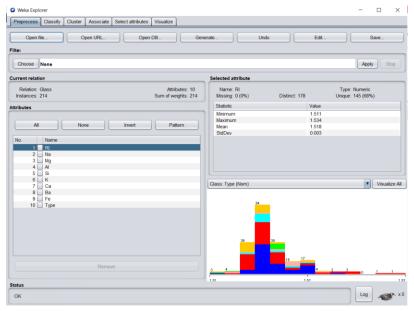
Statistic	Value
Minimum	21
Maximum	81
Mean	33.241
StdDev	11.76

# 9) class:

Type: Nominal, Distinct: 2, Unique: 0

Label	Count
tested_negative	500
tested_positive	268

# 8. Glasses.arff



No. of instances: 214 No. of attributes: 10 Missing values: 0 Attribute information:

# 1) Rl:

Type: Numeric, Distinct: 178, Unique: 145

	<b>-</b>
Statistic	Value
Minimum	1.511
Maximum	1.534
Mean	1.518
StdDev	0.003

## 2) Na:

Type: Numeric, Distinct: 142, Unique: 97

Statistic	Value
Minimum	10.73
Maximum	17.38
Mean	13.408
StdDev	0.817

# 3) Mg:

Type: Numeric, Distinct: 94, Unique: 62

Statistic	Value
Minimum	0
Maximum	4.49
Mean	2.685
StdDev	1.442

## 4) Al:

Type: Numeric, Distinct: 118, Unique: 64

Statistic	Value
Minimum	0.29
Maximum	3.5
Mean	1.445
StdDev	0.499

# 5) Si:

Type: Numeric, Distinct: 133, Unique: 78

Statistic	Value
Minimum	69.81
Maximum	75.41
Mean	72.651
StdDev	0.775

# 6) K:

Type: Numeric, Distinct: 65, Unique: 30

Statistic	Value
Minimum	0
Maximum	6.21
Mean	0.497
StdDev	0.652

## 7) Ca:

Type: Numeric, Distinct: 143, Unique: 95

Statistic	Value	
Minimum	5.43	Т
Maximum	16.19	
Mean	8.957	
StdDev	1.423	

## 8) Ba:

Type: Numeric, Distinct: 34, Unique: 28

• •	
Statistic	Value
Minimum	0
Maximum	3.15
Mean	0.175
StdDev	0.497

## 9) Fe:

Type: Numeric, Distinct: 32, Unique: 17

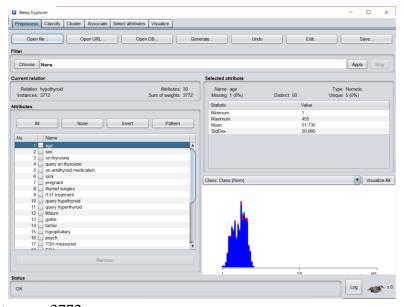
- I	′		′	1	
Statistic		Value			
Minimum		0			
Maximum		0.51			
Mean		0.057			
StdDev		0.097			

## 10) Type:

Type: Nominal, Distinct: 6, Unique: 0

Count
70
76
17
0
13
9
29

# 9. Hypothyroid.arff



No. of instances: 3772 No. of attributes: 30 Attribute information: 'age' integer 'sex' { F, M} 'on thyroxine' { f, t} 'query on thyroxine' { f, t} 'on antithyroid medication' { f, t} 'sick' { f, t} 'pregnant' { f, t} 'thyroid surgery' { f, t} 'I131 treatment' { f, t} 'query hypothyroid' { f, t} 'query hyperthyroid' { f, t} 'lithium' { f, t} 'goitre' { f, t} 'tumor' { f, t} 'hypopituitary' { f, t}

```
'psych' { f, t}
```

'TSH measured' { t, f}

'TSH' real

'T3 measured' { t, f}

'T3' real

'TT4 measured' { t, f}

'TT4' real

'T4U measured' { t, f}

'T4U' real

'FTI measured' { t, f}

'FTI' real

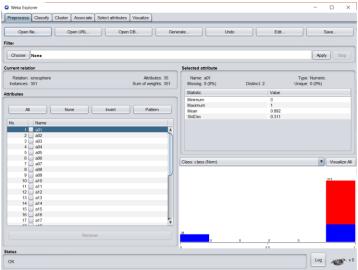
'TBG measured' { f}

'TBG' real

'referral source' { SVHC, other, SVI, STMW, SVHD}

'Class' { negative, compensated\_hypothyroid, primary\_hypothyroid, secondary\_hypothyroid}

## 10. Ionosphere.arff



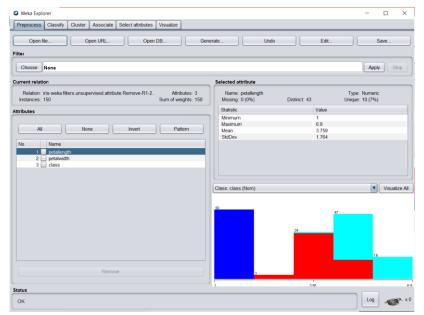
No. of instances: 351 No. of attributes: 35 Attribute information:

Type: Numeric (a01-a34), Nominal (class)

a01, a02, a03, a04, a05, a06, a07, a08, a09, a10, a11, a12, a13, a14, a15, a16, a17, a18, a19, 20, a22, a23, a24, a25, a26, a27, a28, a29, a30, a31, a32, a33, a34

class {b, g}

#### 11. Iris.2D.arff



No. of instances: 150 No. of attributes: 3

Class objects: petallength, petalwidth, class

Missing values: 0 Attribute information:

1) Petallength:

Type: Numeric, Distinct: 43, Unique: 10

Statistic	Value
Minimum	1
Maximum	6.9
Mean	3.759
StdDev	1.764

# 2) Petalwidth:

Type: Numeric, Distinct: 22, Unique: 2

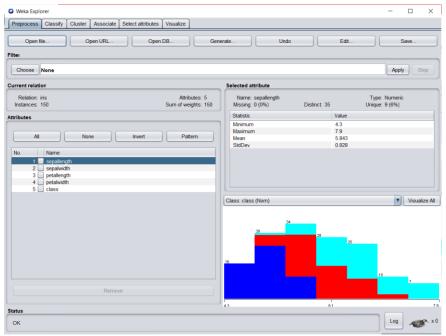
- J P	
Statistic	Value
Minimum	0.1
Maximum	2.5
Mean	1.199
StdDev	0.763

## 3) Class:

Type: Nominal, Distinct: 3, Unique: 0

Label	Count
Iris-setosa	50
Iris-versicolor	50
Iris-virginica	50

## 12. Iris.arff

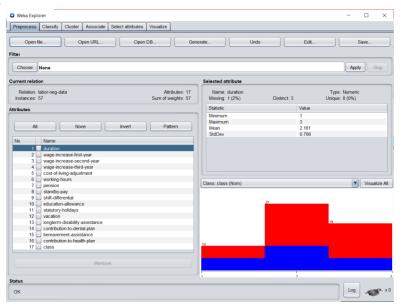


No. of instances: 150 No. of attributes: 5 Missing values: 0 Attribute Information: 1. sepal length in cm

- 2. sepal width in cm
- 3. petal length in cm
- 4. petal width in cm
- 5. class:

Iris Setosa, Iris Versicolour, Iris Virginica

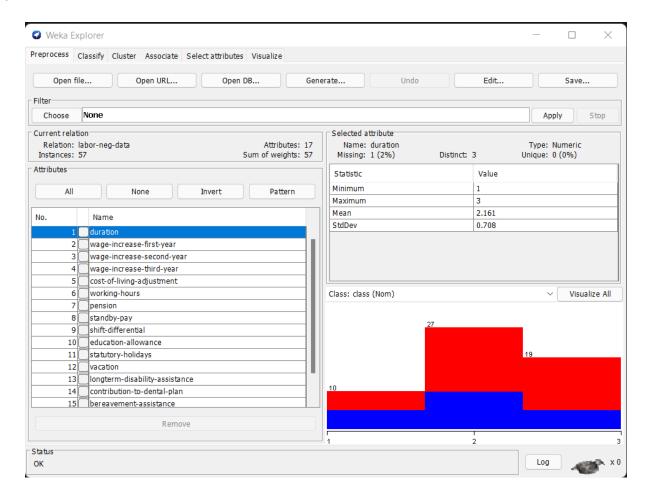
## 13. Labor.arff



No. of instances: 57 No. of attributes: 17 Missing values: 0 Attribute Information:

- 1. dur: duration of agreement [1..7]
- 2 wage1.wage: wage increase in first year of contract [2.0 .. 7.0]
- 3 wage2.wage: wage increase in second year of contract [2.0 .. 7.0]
- 4 wage3.wage: wage increase in third year of contract [2.0 .. 7.0]
- 5 cola : cost of living allowance [none, tcf, tc]
- 6 hours.hrs: number of working hours during week [35.. 40]
- 7 pension : employer contributions to pension plan [none, ret\_allw, empl\_contr]
- 8 stby\_pay: standby pay [2.. 25]
- 9 shift\_diff: shift differencial: supplement for work on II and III shift [1 .. 25]
- 10 educ\_allw.boolean : education allowance [true false]
- 11 holidays: number of statutory [9.. 15]
- 12 vacation: number of paid vacation days [ba, avg, gnr]
- 13 lngtrm\_disabil.boolean : employer's help during employee longterm disability [true , false]
- 14 dntl\_ins : employers contribution towards the dental plan [none, half, full]
- 15 bereavement.boolean : employer's financial contribution towards the costs of bereavement [true , false]
- 16 empl\_hplan : employer's contribution towards the health plan [none, half, full]

#### 15) Laboror



Number of Instances: 57 Number of Attributes: 16

\_\_\_\_\_

#### 7. Attribute Information:

- 1. dur: duration of agreement
  - [1..7
- 2 wage1.wage : wage increase in first year of contract [2.0 .. 7.0]
- 3 wage2.wage : wage increase in second year of contract [2.0 .. 7.0]
- 4 wage3.wage : wage increase in third year of contract [2.0 .. 7.0]
- 5 cola : cost of living allowance [none, tcf, tc]
- 6 hours.hrs: number of working hours during week [35..40]
- 7 pension : employer contributions to pension plan [none, ret\_allw, empl\_contr]

8 stby\_pay: standby pay

[2 .. 25]

9 shift\_diff: shift differencial: supplement for work on II and III shift

[1 .. 25]

10 educ allw.boolean: education allowance

[true false]

11 holidays : number of statutory holidays

[9..15]

12 vacation: number of paid vacation days

[ba, avg, gnr]

13 Ingtrm\_disabil.boolean:

employer's help during employee longterm disabil

ity [true, false]

14  $\,$  dntl\_ins : employers contribution towards the dental plan

[none, half, full]

15 bereavement.boolean : employer's financial contribution towards the

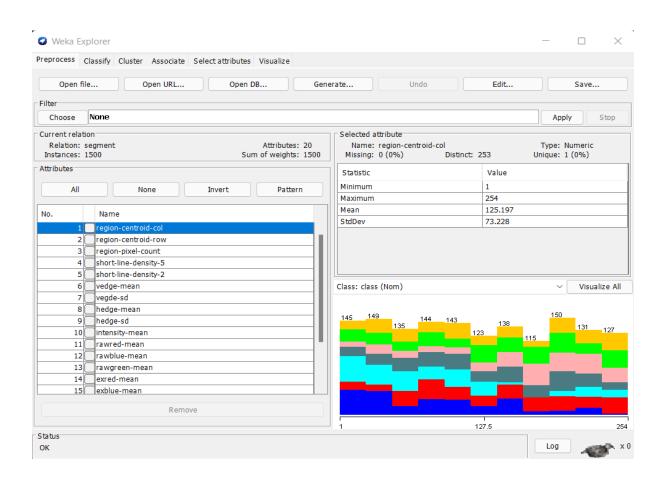
covering the costs of bereavement

[true, false]

16 empl\_hplan : employer's contribution towards the health plan

[none, half, full]

#### 16) segment-challenge



#### 7 Attribute Information:

- 1 region-centroid-col: the column of the center pixel of the region.
- 2 region-centroid-row: the row of the center pixel of the region.

region-pixel-count: the number of pixels in a region = 9.

short-line-density-5: the results of a line extractoin algorithm that

counts how many lines of length 5 (any orientation) with

low contrast, less than or equal to 5, go through the region.

short-line-density-2: same as short-line-density-5 but counts lines of

high contrast, greater than 5.

vedge-mean: measure the contrast of horizontally

adjacent pixels in the region. There are 6, the mean and

standard deviation are given. This attribute is used as

a vertical edge detector.

7 vegde-sd: (see 6)

hedge-mean: measures the contrast of vertically adjacent

pixels. Used for horizontal line detection.

hedge-sd: (see 8).

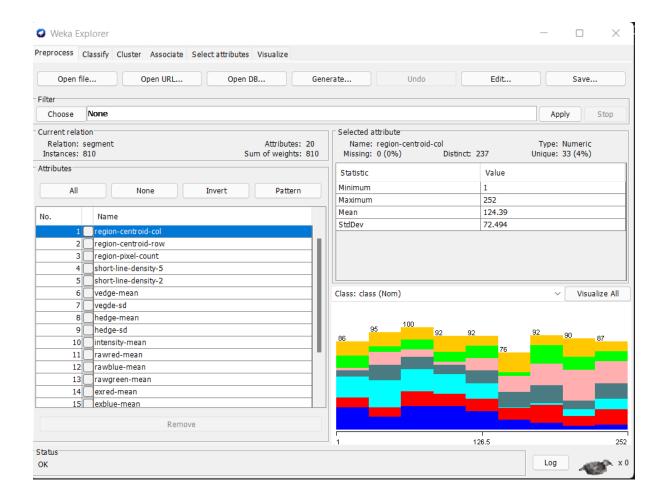
- intensity-mean: the average over the region of (R + G + B)/3
- 11 rawred-mean: the average over the region of the R value.
- rawblue-mean: the average over the region of the B value.
- 1 rawgreen-mean: the average over the region of the G value.
- 1 exred-mean: measure the excess red: (2R (G + B))
- exblue-mean: measure the excess blue: (2B (G + R))
- 1 exgreen-mean: measure the excess green: (2G (R + B))
- 17 value-mean: 3-d nonlinear transformation

of RGB. (Algorithm can be found in Foley and VanDam, Fundamentals

of Interactive Computer Graphics)

- saturatoin-mean: (see 17)
- 1 hue-mean: (see 17)

## 17) segment-test



Number of Instances: Training data: 210 Test data: 2100

Number of Attributes: 19 continuous attributes

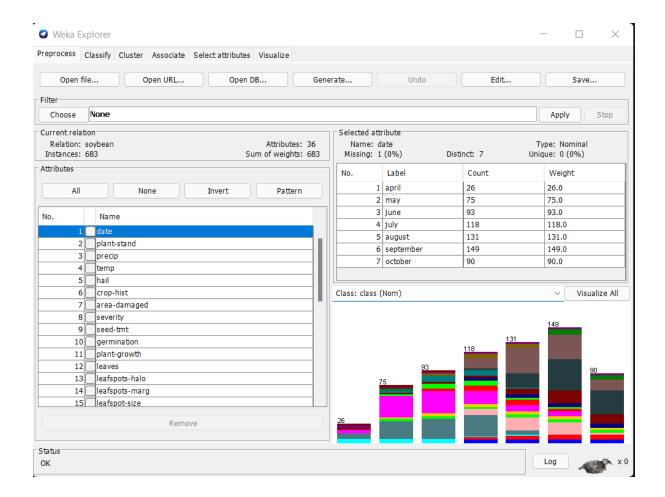
\_\_\_\_\_

#### Attribute Information:

- 1. region-centroid-col: the column of the center pixel of the region.
- 2. region-centroid-row: the row of the center pixel of the region.
- 3. region-pixel-count: the number of pixels in a region = 9.

- 4. short-line-density-5: the results of a line extractoin algorithm that counts how many lines of length 5 (any orientation) with low contrast, less than or equal to 5, go through the region.
- 5. short-line-density-2: same as short-line-density-5 but counts lines of high contrast, greater than 5.
- 6. vedge-mean: measure the contrast of horizontally adjacent pixels in the region. There are 6, the mean and standard deviation are given. This attribute is used as a vertical edge detector.
- 7. vegde-sd: (see 6)
- 8. hedge-mean: measures the contrast of vertically adjacent pixels. Used for horizontal line detection.
- 9. hedge-sd: (see 8).
- 10. intensity-mean: the average over the region of (R + G + B)/3
- 11. rawred-mean: the average over the region of the R value.
- 12. rawblue-mean: the average over the region of the B value.
- 13. rawgreen-mean: the average over the region of the G value.
- 14. exred-mean: measure the excess red: (2R (G + B))
- 15. exblue-mean: measure the excess blue: (2B (G + R))
- 16. exgreen-mean: measure the excess green: (2G (R + B))
- 17. value-mean: 3-d nonlinear transformation of RGB. (Algorithm can be found in Foley and VanDam, Fundamentals of Interactive Computer Graphics)
- 18. saturatoin-mean: (see 17)
- 19. hue-mean: (see 17)

## 18) soybean



Number of Instances: 683

Number of Attributes: 35

\_\_\_\_\_\_

date {april,may,june,july,august,september,october}

plant-stand {normal,lt-normal}

precip {It-norm,norm,gt-norm}

temp {lt-norm,norm,gt-norm}

hail {yes,no}

crop-hist {diff-lst-year,same-lst-yr,same-lst-two-yrs, same-lst-sev-yrs}

area-damaged {scattered,low-areas,upper-areas,whole-field}

severity {minor,pot-severe,severe}

seed-tmt {none,fungicide,other}

germination {90-100,80-89,lt-80}

plant-growth {norm,abnorm}

leaves {norm,abnorm}

leafspots-halo {absent,yellow-halos,no-yellow-halos}

leafspots-marg {w-s-marg,no-w-s-marg,dna}

leafspot-size {lt-1/8,gt-1/8,dna}

leaf-shread {absent,present}

leaf-malf {absent,present}

leaf-mild {absent,upper-surf,lower-surf}

stem {norm,abnorm}

lodging {yes,no}

stem-cankers {absent,below-soil,above-sec-nde}

canker-lesion {dna,brown,dk-brown-blk,tan}

fruiting-bodies {absent,present}

external-decay {absent,firm-and-dry,watery}

mycelium {absent,present}

int-discolor {none,brown,black}

sclerotia {absent,present}

fruit-pods {norm,diseased,few-present,dna}

fruit-spots {absent,colored,brown-w/blk-specks,distort,dna}

seed {norm,abnorm}

mold-growth {absent,present}

seed-discolor {absent,present}

seed-size {norm,lt-norm}

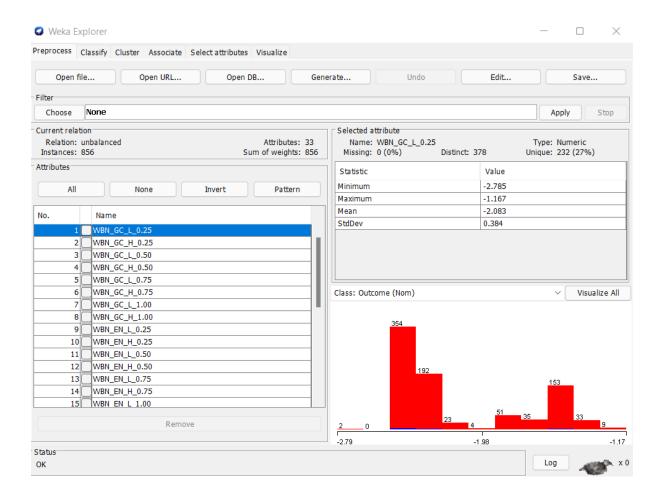
shriveling {absent,present}

roots {norm,rotted,galls-cysts}

class {diaporthe-stem-canker, charcoal-rot, rhizoctonia-root-rot, phytophthora-rot, brown-stem-rot, powdery-mildew, downy-mildew, brown-spot, bacterial-blight, bacterial-pustule,

purple-seed-stain, anthracnose, phyllosticta-leaf-spot, alternarialeaf-spot, frog-eye-leaf-spot, diaporthe-pod-&-stem-blight, cyst-nematode, 2-4-d-injury, herbicide-injury}

## 19) unbalanced



WBN\_GC\_L\_0.25 numeric

WBN\_GC\_H\_0.25 numeric

WBN\_GC\_L\_0.50 numeric

WBN\_GC\_H\_0.50 numeric

WBN\_GC\_L\_0.75 numeric

WBN\_GC\_H\_0.75 numeric

WBN\_GC\_L\_1.00 numeric

WBN\_GC\_H\_1.00 numeric

WBN\_EN\_L\_0.25 numeric

WBN\_EN\_H\_0.25 numeric

WBN\_EN\_L\_0.50 numeric

WBN\_EN\_H\_0.50 numeric

WBN\_EN\_L\_0.75 numeric

WBN\_EN\_H\_0.75 numeric

WBN\_EN\_L\_1.00 numeric

WBN\_EN\_H\_1.00 numeric

WBN\_LP\_L\_0.25 numeric

WBN\_LP\_H\_0.25 numeric

WBN\_LP\_L\_0.50 numeric

WBN\_LP\_H\_0.50 numeric

WBN\_LP\_L\_0.75 numeric

WBN\_LP\_H\_0.75 numeric

WBN\_LP\_L\_1.00 numeric

WBN\_LP\_H\_1.00 numeric

XLogP numeric

PSA numeric

NumRot numeric

NumHBA numeric

NumHBD numeric

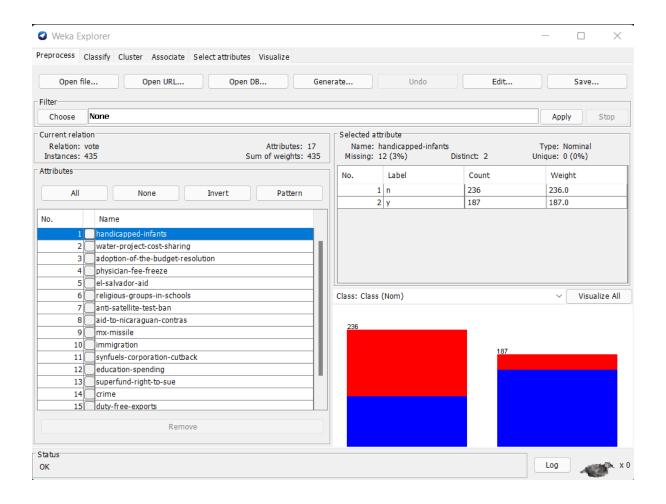
MW numeric

BBB numeric

BadGroup numeric

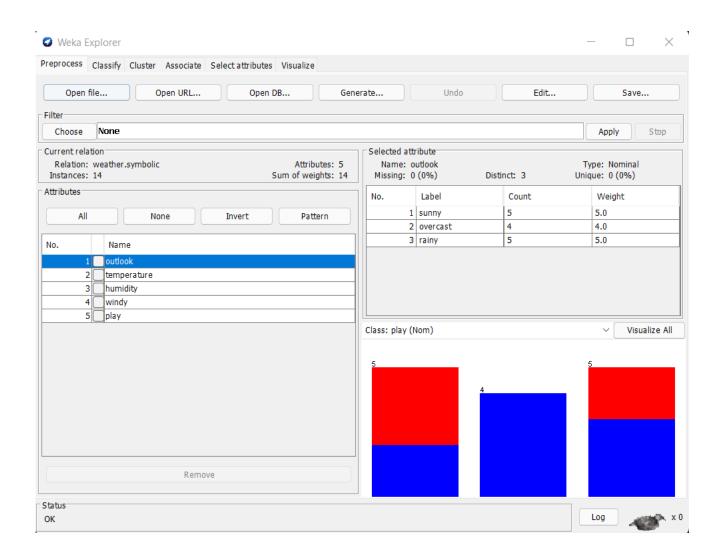
Outcome {Active,Inactive}

## **20) vote**



Missing:	handicapped-int 12 (3%)	fants Distinct: 2	Type: Nominal Unique: 0 (0%)		: mx-missile : 22 (5%)	Distinct: 2	Type: Nominal Unique: 0 (0%)
No.	Label	Count	Weight	No.	Label	Count	Weight
1	1 n	236	236.0		1 n	206	206.0
	2 y	187	187.0	6 1 1 1	2 y	207	207.0
				Selected	attribute : immigration		Type: Nominal
Selected att Name: ۱ Missing: 4	water-project-c	ost-sharing Distinct: 2	Type: Nominal Unique: 0 (0%)		: 7 (2%)	Distinct: 2	Unique: 0 (0%)
Missing.	40 (1170)	District, 2	Offique: 0 (0%)	No.	Label	Count	Weight
No.	Label	Count	Weight		1 n	212	212.0
1	1 n	192	192.0		2 y	216	216.0
2	2 y	195	195.0	Selected a			Towns Massical
		<u> </u>			synfuels-corpora 21 (5%)	Distinct: 2	Type: Nominal Unique: 0 (0%)
Selected at							
		-budget-resolution	Type: Nominal	No.	Label	Count	Weight
Missing:	11 (3%)	Distinct: 2	Unique: 0 (0%)		1 n	264	264.0
No.	Label	Count	Weight		2 y	150	150.0
-	1 n	171	171.0	Selected a			
	2 y	253	253.0		education-spend		Type: Nominal
- 4	د <sub> </sub> ۷	255	233.0	MISSING:	31 (7%)	Distinct: 2	Unique: 0 (0%)
Selected at	tribute			No.	Label	Count	Weight
	physician-fee-fr	0070	Type: Nominal		1 n	233	233.0
Missing:		Distinct: 2	Unique: 0 (0%)		2 y	171	171.0
				Selected a	_		
No.	Label	Count	Weight		superfund-right-	to-sue	Type: Nominal
1	1 n	247	247.0		25 (6%)	Distinct: 2	Unique: 0 (0%)
	2 y	177	177.0	No.	Label	Count	Weight
				110.	Laber	Counc	Weight
					1   5	201	201.0
Selected att	tribute				1 n	201	201.0
Name: e	el-salvador-aid	D. C. A. S.	Type: Nominal	Colorto I	2 y	201 209	201.0
	el-salvador-aid	Distinct: 2	Type: Nominal Unique: 0 (0%)	Selected a	2 y attribute		209.0
Name: 6 Missing: 1	el-salvador-aid	Distinct: 2	Unique: 0 (0%) Weight	Name:	2 y attribute		
Name: 6 Missing: 1 No.	el-salvador-aid 15 (3%) Label		Unique: 0 (0%)	Name:	2 y attribute crime	209	209.0 Type: Nominal
Name: 6 Missing: 1 No.	el-salvador-aid 15 (3%) Label	Count	Unique: 0 (0%) Weight	Name: Missing:	2 y attribute crime 17 (4%)	209 Distinct 2	209.0 Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No.	el-salvador-aid 15 (3%) Label n	Count 208	Unique: 0 (0%)  Weight  208.0	Name: Missing:	attribute crime 17 (4%)	Distinct: 2	Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No. 1 2	el-salvador-aid 15 (3%) Label n	Count 208 212	Unique: 0 (0%)  Weight  208.0	Name: Missing:	attribute crime 17 (4%)  Label 1 n 2 y	Distinct: 2  Count 170	Type: Nominal Unique: 0 (0%) Weight
Name: 6 Missing: 1 No. 1 2 Selected a Name:	el-salvador-aid 15 (3%) Label I n 2 y	Count 208 212	Unique: 0 (0%)  Weight  208.0  212.0	Name: Missing: No.	attribute crime 17 (4%)  Label 1 n 2 y	209  Distinct 2  Count 170 248	Type: Nominal Unique: 0 (0%) Weight
Name: 6 Missing: 1 No. 1 2 Selected a Name:	el-salvador-aid 15 (3%) Label I n 2 y ttribute religious-group	Count 208 212 os-in-schools	Unique: 0 (0%)  Weight 208.0 212.0  Type: Nominal	Name: Missing: No. Selected a Name: Missing:	attribute crime 17 (4%)  Label  1 n 2 y attribute duty-free-exports 28 (6%)	Distinct: 2  Count 170 248  Distinct: 2	Type: Nominal Unique: 0 (0%)  Weight 170.0 248.0  Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No. 1 2 Selected a Name: Missing:	el-salvador-aid 15 (3%) Label n 2 y ttribute religious-group 11 (3%)	Count 208 212  Dis-in-schools Distinct: 2	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)	Name: Missing: No. Selected a	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports	209  Distinct: 2  Count 170 248	Type: Nominal Unique: 0 (0%)  Weight 170.0 248.0  Type: Nominal
Name: 6 Missing: 1 No. 1 2 Selected a Name: Missing:	el-salvador-aid 15 (3%)  Label  n 2 y ttribute religious-group 11 (3%)  Label	Count 208 212  Ds-in-schools Distinct: 2  Count	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight	Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n	Distinct: 2  Count 170 248  Distinct: 2  Count 233	Type: Nominal Unique: 0 (0%)  Weight 170.0 248.0  Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No. 1 2 Selected a Name: Missing:	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label  1 n 2 y	Count 208 212  Distinct: 2  Count 152	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0	Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label  1 n 2 y attribute duty-free-exports 28 (6%)  Label	Distinct: 2  Count 170 248  Distinct: 2  Count	Type: Nominal Unique: 0 (0%)  Weight 170.0 248.0  Type: Nominal Unique: 0 (0%)  Weight
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label  1 n 2 y	Count 208 212  Dis-in-schools Distinct: 2  Count 152 272	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0	Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y	Distinct: 2  Count 170 248  Distinct: 2  Count 233	Type: Nominal Unique: 0 (0%)  Weight 170.0 248.0  Type: Nominal Unique: 0 (0%)  Weight 233.0
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes	Count 208 212  Dis-in-schools Distinct: 2  Count 152 272	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0	Name: Missing: No. Selected a Name: Missing: No. Selected a	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute	Distinct: 2  Count 170 248  Distinct: 2  Count 233	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: No.  Selected at Missing: 1 No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-groun 11 (3%)  Label  1 n 2 y  ttribute anti-satellite-tes 14 (3%)  Label	Count 208 212  Ds-in-schools Distinct: 2  Count 152 272	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal	Name: Missing: No. Selected a Name: Missing: No. Selected a	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute export-administr	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ration-act-south-africa	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No. Selected at Name: 7 Missing: 1 No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  ttribute anti-satellite-tes 14 (3%)  Label 1 n	Count 208 212  Distinct: 2  Count 152 272  St-ban Distinct: 2	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:	attribute crime 17 (4%)  Label  1 n 2 y attribute duty-free-exports 28 (6%)  Label  1 n 2 y attribute export-administr 104 (24%)  Label	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  Tation-act-south-africa Distinct: 2  Count	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No. Selected at Name: 7 Missing: 1 No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-groun 11 (3%)  Label  1 n 2 y  ttribute anti-satellite-tes 14 (3%)  Label	Count 208 212  Dos-in-schools Distinct: 2  Count 152 272  St-ban Distinct: 2  Count	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute export-administr 104 (24%)  Label 1 n	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ation-act-south-africa Distinct: 2  Count 62	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)  Weight  4 23.0  4 23.0  4 23.0  4 23.0  4 23.0  4 24.0
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: No.  Selected att Name: a Missing: 1 No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)  Label 1 n 2 y	Count 208 212  Ds-in-schools Distinct: 2  Count 152 272  st-ban Distinct: 2  Count 182	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)  Weight  182.0	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute : export-administr: 104 (24%)  Label 1 n 2 y	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  Tation-act-south-africa Distinct: 2  Count	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No.  Selected att Name: a Missing: 1 No.  1 2 Selected att Name: a Missing: 1	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)  Label 1 n 2 y  tribute	Count 208 212  Distinct: 2  Count 152 272  St-ban Distinct: 2  Count 182 239	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)  Weight  182.0	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute : export-administr : 104 (24%)  Label 1 n 2 y attribute	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ation-act-south-africa Distinct: 2  Count 62	209.0  Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)  Weight  2369.0
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No.  Selected att Name: a Missing: 1 No.  1 2 Selected att Name: a Missing: 1	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)	Count 208 212  Distinct: 2  Count 152 272  St-ban Distinct: 2  Count 182 239	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)  Weight  182.0  239.0	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute : export-administr: 104 (24%)  Label 1 n 2 y	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ation-act-south-africa Distinct: 2  Count 62	Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)  Weight  4 23.0  4 23.0  4 23.0  4 23.0  4 23.0  4 24.0
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No.  Selected att Name: a Missing: 1 No.  1 2 Selected att Name: a Missing: 1	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)	Count 208 212  Distinct: 2  Count 152 272  St-ban Distinct: 2  Count 182 239	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)  Weight  182.0  239.0  Type: Nominal	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute : export-administr : 104 (24%)  Label 1 n 2 y attribute : caparatribute : caparatribute : caparatribute : caparatribute : caparatribute : caparatribute : Class	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ation-act-south-africa Distinct: 2  Count 62 269	209.0  Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nomina Unique: 0 (0%)  Weight  62.0  269.0  Type: Nominal
Name: 6 Missing: 1 No.  1 2 Selected a Name: Missing: 1 No.  Selected att Name: a Missing: 1 No.  1 2 Selected att Name: a Missing: 1 No.	el-salvador-aid 15 (3%)  Label  n 2 y  ttribute religious-group 11 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)  Label 1 n 2 y  tribute anti-satellite-tes 14 (3%)	Count  208  212  Distinct: 2  Count  152  272  St-ban  Distinct: 2  Count  182  239  In-contras  Distinct: 2	Unique: 0 (0%)  Weight  208.0  212.0  Type: Nominal Unique: 0 (0%)  Weight  152.0  272.0  Type: Nominal Unique: 0 (0%)  Weight  182.0  239.0  Type: Nominal Unique: 0 (0%)	Name: Missing:  No.  Selected a Name: Missing:  No.  Selected a Name: Missing:  No.	attribute crime 17 (4%)  Label 1 n 2 y attribute duty-free-exports 28 (6%)  Label 1 n 2 y attribute : export-administr: 104 (24%)  Label 1 n 2 y attribute : comparison of the	Distinct: 2  Count 170 248  Distinct: 2  Count 233 174  ation-act-south-africa Distinct: 2  Count 62 269  Distinct: 2	209.0  Type: Nominal Unique: 0 (0%)  Weight  170.0  248.0  Type: Nominal Unique: 0 (0%)  Weight  233.0  174.0  Type: Nominal Unique: 0 (0%)  Weight  62.0  269.0  Type: Nominal Unique: 0 (0%)

## 21) weather.nominal



Selected attribute

Name: outlook Type: Nominal Missing: 0 (0%) Distinct: 3 Unique: 0 (0%)

No.	Label	Count	Weight
1	sunny	5	5.0
2	overcast	4	4.0
3	rainy	5	5.0

Selected attribute

Name: temperature Type: Nominal Missing: 0 (0%) Distinct: 3 Unique: 0 (0%)

No.	Label	Count	Weight
1	hot	4	4.0
2	mild	6	6.0
3	cool	4	4.0

Selected attribute

Name: humidity Type: Nominal Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

No.	Label	Count	Weight
1	high	7	7.0
2	normal	7	7.0

Selected attribute

Name: windy Type: Nominal Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

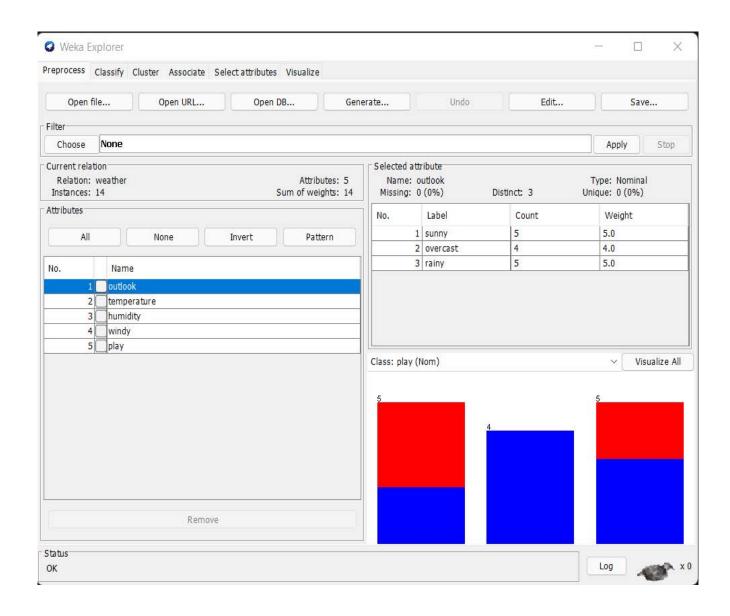
No.		Label	C	Count	Weight	
	1	TRUE	6		6.0	
	2	FALSE	8		8.0	

Selected attribute

Name: play Type: Nominal Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

No.	Label	Count	Weight
1	yes	9	9.0
2	no	5	5.0

## 22) weather.numeric



Name: outlook Missing: 0 (0%)		Distinct 3	Type: Nominal Unique: 0 (0%)	
No.	Label	Count	Weight	
1	sunny	5	5.0	
2	overcast	4	4.0	
3	rainy	5	5.0	

Selected attribute

Name: temperature Type: Numeric Missing: 0 (0%) Distinct: 12 Unique: 10 (71%)

Statistic	Value
Minimum	64
Maximum	85
Mean	73.571
StdDev	6.572

Selected attribute

Name: humidity Type: Numeric Missing: 0 (0%) Distinct: 10 Unique: 7 (50%)

Statistic	Value
Minimum	65
Maximum	96
Mean	81.643
StdDev	10.285

Selected attribute

Name: windy
Missing: 0 (0%)

Distinct: 2

Unique: 0 (0%)

No.	Label	Count	Weight
1	TRUE	6	6.0
2	FALSE	8	8.0

S elected attribute

Name: play Type: Nominal Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

No.	Label	Count	Weight	
1	yes	9	9.0	
2	no	5	5.0	
	1		0.0	