Assignment 1

Objective: Create a Weather Table with the help of Data Mining Tool WEKA EXPLORER in .arff format.

Description: Create a Weather table with training data set which includes

attributes like: outlook {sunny, rainy, cludy, misty},

temperature numeric, humidity numeric,

windy {false, true},

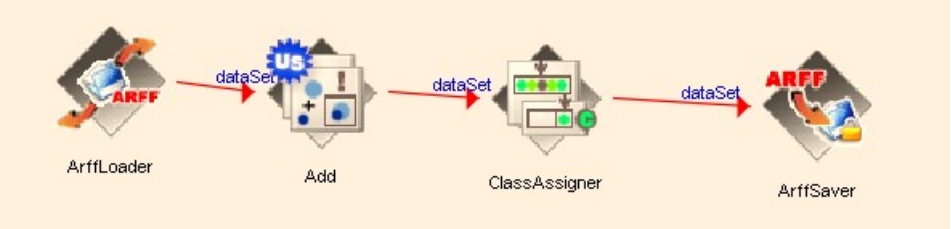
play {yes, no}.

```
%nominal attributes
@attribute outlook {sunny, rainy, cludy, misty}
@attribute windy {f, t}

%numeric attributes
@attribute temperature integer
@attribute humidity integer

%binary target class variable
@attribute play {yes, no}

@data
sunny,f,85,80,yes
sunny,f,85,85,no
cludy,f,70,80,yes
sunny,t,80,90,no
cludy,f,83,86,yes
misty,f,60,95,no
misty,f,50,90,no
rainy,f,70,96,yes
rainy,f,68,80,yes
rainy,t,65,70,no
cludy,t,64,65,yes
sunny,f,72,95,no
sunny,f,69,70,yes
rainy,f,75,80,yes
sunny,t,75,70,yes
cludy,t,72,90,yes
cludy,f,81,75,yes
rainy,t,71,91,no
```

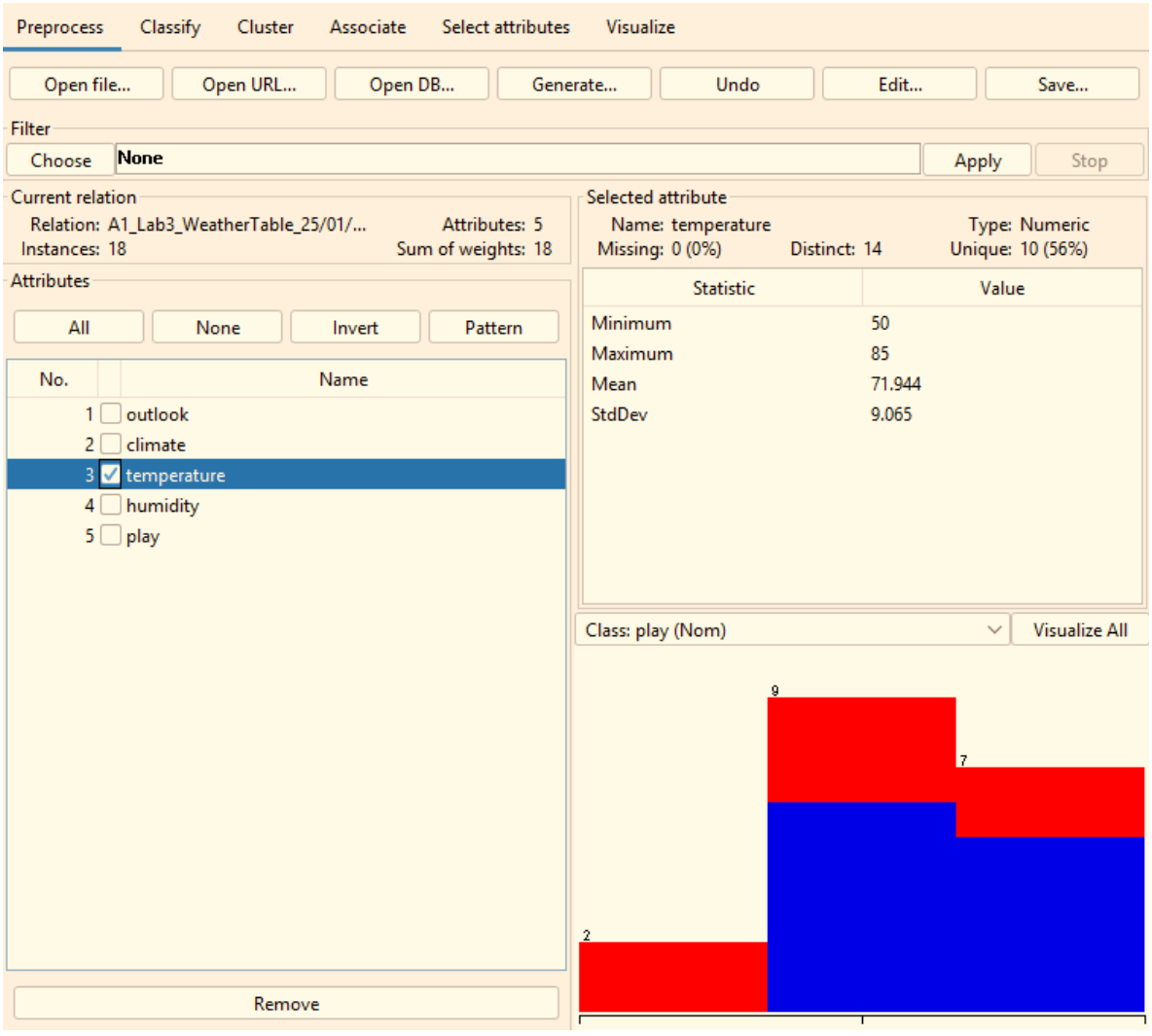
1. Objective: Apply Pre-Processing techniques to the training data set of Weather Table using WEKA EXPLORER and KNOWLEDGEFLOW.

Description: Real world databases are highly influenced to noise, missing and inconsistency due to their queue size so the data can be pre-processed to improve the quality of data and missing results and it also improves the efficiency.

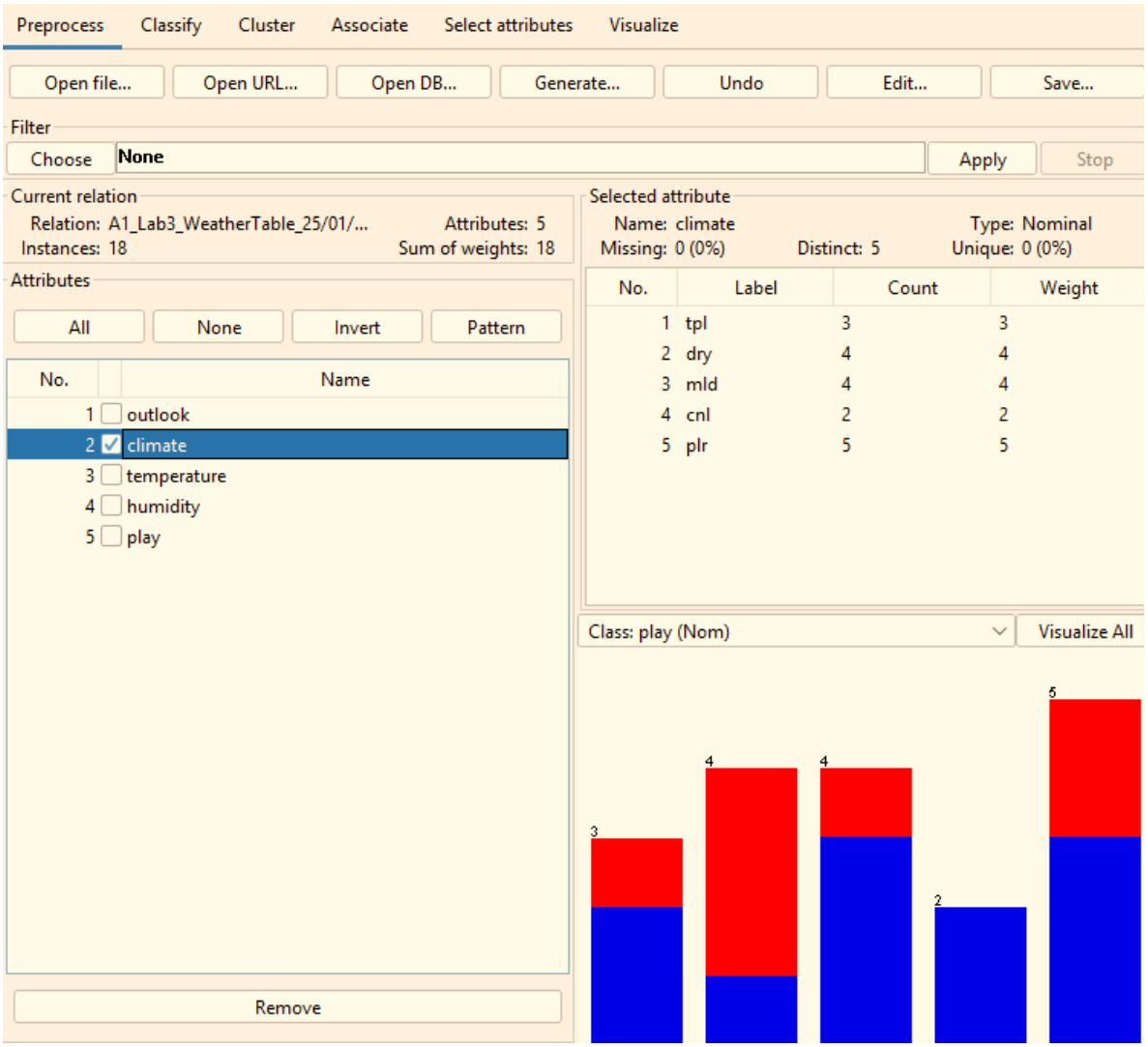
1)Add attribute climate {tropical, dry, mild, continental, polar}



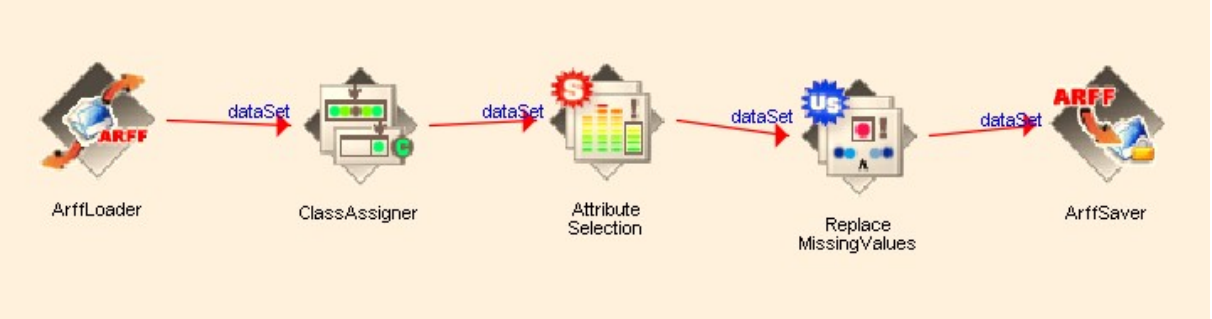
2)Remove an attribute:



1) Attribute selection Weka screen output (on how to select attributes):



Fill missing values Data set before replacing missing terms:

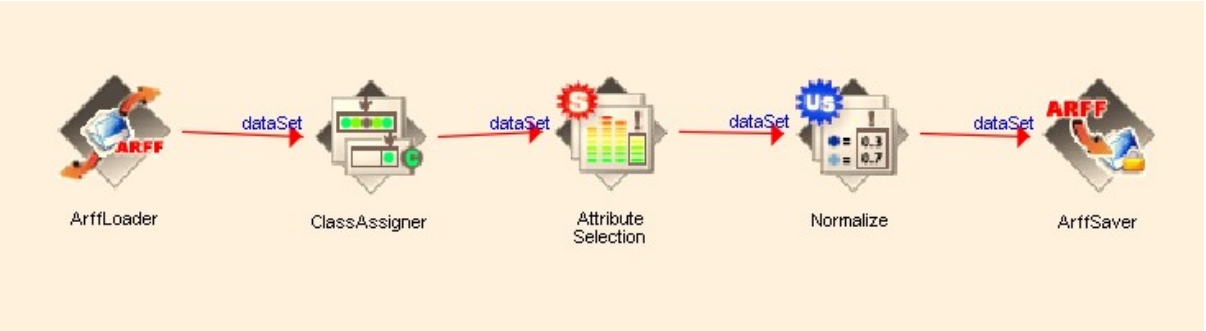


Dataset after the missing values are replaced:

Relation: A1_Lab3_WeatherTable_25/01/2024-weka.filters.unsupervised.attribute.I

No.	1: outlook Nominal	2: windy Nominal	3: climate Nominal	4: temperature Numeric	5: humidity Numeric	6: **play** Nominal
1	sunny	f	cnl	85.0	80.0	yes
2	sunny	f	mld	85.0	85.0	no
3	cludy	f	dry	70.0	80.0	yes
4	sunny	t	plr	80.0	90.0	no
5	cludy	f	mld	83.0	86.0	yes
6	misty	f	dry	60.0	95.0	no
7	sunny	f	tpl	50.0	90.0	no
8	rainy	f	plr	72.058823529...	96.0	yes
9	rainy	f	plr	68.0	80.0	yes
10	rainy	t	plr	65.0	70.0	no
11	cludy	t	plr	64.0	65.0	yes
12	sunny	f	dry	72.0	95.0	no
13	sunny	f	tpl	69.0	70.0	yes
14	rainy	f	plr	75.0	80.0	yes
15	sunny	t	cnl	75.0	70.0	yes
16	cludy	t	tpl	72.0	90.0	yes
17	cludy	f	mld	81.0	75.0	yes
18	rainy	t	dry	71.0	91.0	no

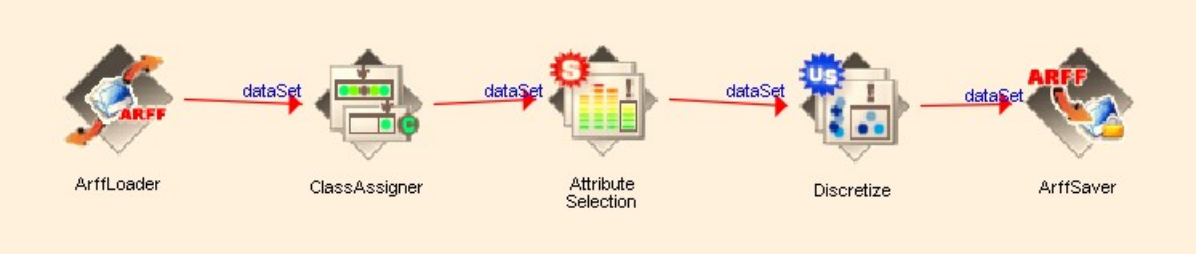
1) Normalization Dataset after applying normalization:



Relation: A1_Lab3_WeatherTable_25/01/2024-weka.filters.unsupervised.attribute.ReplaceMi

No.	1: outlook Nominal	2: windy Nominal	3: climate Nominal	4: temperature Numeric	5: humidity Numeric	6: **play** Nominal
1	sunny	f	cnl	1.0	0.4838709...	yes
2	sunny	f	mld	1.0	0.6451612...	no
3	cludy	f	dry	0.5714285714...	0.4838709...	yes
4	sunny	t	plr	0.8571428571...	0.8064516...	no
5	cludy	f	mld	0.9428571428...	0.6774193...	yes
6	misty	f	dry	0.2857142857...	0.9677419...	no
7	sunny	f	tpl	0.0	0.8064516...	no
8	rainy	f	plr	0.6302521008...	1.0	yes
9	rainy	f	plr	0.5142857142...	0.4838709...	yes
10	rainy	t	plr	0.4285714285...	0.1612903...	no
11	cludy	t	plr	0.4	0.0	yes
12	sunny	f	dry	0.6285714285...	0.9677419...	no
13	sunny	f	tpl	0.5428571428...	0.1612903...	yes
14	rainy	f	plr	0.7142857142...	0.4838709...	yes
15	sunny	t	cnl	0.7142857142...	0.1612903...	yes
16	cludy	t	tpl	0.6285714285...	0.8064516...	yes
17	cludy	f	mld	0.8857142857...	0.3225806...	yes
18	rainy	t	dry	0.6	0.8387096...	no

Discretization Dataset after applying discretization:



Relation: AI_Lab3_WeatherTable_25/01/2024-weka.filters.unsupervised.attribute.Replac

No.	1: outlook Nominal	2: windy Nominal	3: climate Nominal	4: temperature Nominal	5: humidity Nominal	6: **play** Nominal
1	sunny	f	cnl	'(0.9-inf)'	'(0.4-0.5]'	yes
2	sunny	f	mld	'(0.9-inf)'	'(0.6-0.7]'	no
3	cludy	f	dry	'(0.5-0.6]'	'(0.4-0.5]'	yes
4	sunny	t	plr	'(0.8-0.9]'	'(0.8-0.9]'	no
5	cludy	f	mld	'(0.9-inf)'	'(0.6-0.7]'	yes
6	misty	f	dry	'(0.2-0.3]'	'(0.9-inf)'	no
7	sunny	f	tpl	'(-inf-0.1]'	'(0.8-0.9]'	no
8	rainy	f	plr	'(0.6-0.7]'	'(0.9-inf)'	yes
9	rainy	f	plr	'(0.5-0.6]'	'(0.4-0.5]'	yes
10	rainy	t	plr	'(0.4-0.5]'	'(0.1-0.2]'	no
11	cludy	t	plr	'(0.3-0.4]'	'(-inf-0.1]'	yes
12	sunny	f	dry	'(0.6-0.7]'	'(0.9-inf)'	no
13	sunny	f	tpl	'(0.5-0.6]'	'(0.1-0.2]'	yes
14	rainy	f	plr	'(0.7-0.8]'	'(0.4-0.5]'	yes
15	sunny	t	cnl	'(0.7-0.8]'	'(0.1-0.2]'	yes
16	cludy	t	tpl	'(0.6-0.7]'	'(0.8-0.9]'	yes
17	cludy	f	mld	'(0.8-0.9]'	'(0.3-0.4]'	yes
18	rainy	t	dry	'(0.5-0.6]'	'(0.8-0.9]'	no