

1.

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize Visualize3D

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

Filter
Choose: **None** Apply Stop

Current relation
Relation: new
Instances: 1801

Attributes
All None Invert Pattern

No.	Name
1	<input checked="" type="checkbox"/> year
2	<input checked="" type="checkbox"/> iso_code
3	<input checked="" type="checkbox"/> rank
4	<input type="checkbox"/> government_consumption
5	<input type="checkbox"/> transfers
6	<input type="checkbox"/> gov_enterprises
7	<input type="checkbox"/> top_marg_tax_rate
8	<input type="checkbox"/> size_government
9	<input type="checkbox"/> judicial_independence
10	<input type="checkbox"/> impartial_courts
11	<input type="checkbox"/> protection_property_rights
12	<input type="checkbox"/> military_interference
13	<input type="checkbox"/> integrity_legal_system
14	<input type="checkbox"/> legal_enforcement_contracts
15	<input type="checkbox"/> restrictions_sale_real_property
16	<input type="checkbox"/> reliability_police
17	<input type="checkbox"/> business_costs_crime
18	<input type="checkbox"/> gender_adjustment

Remove

Status
OK

Attributes: 34
Sum of weights: 1801

Selected attribute
Name: rank
Missing: 0 (0%)
Distinct: 162
Type: Numeric
Unique: 3 (0%)

Statistic	Value
Minimum	1
Maximum	162
Mean	75.527
StdDev	43.758

Class: freedom (Num) Visualize All

year
iso-code
rank

remove

Weka Explorer

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Filter
Choose: **None** Apply Stop

Current relation
Relation: new-weka.filters.unsupervised.attribute.Remove...
Instances: 1801

Attributes
All None Invert Pattern

No.	Name
1	<input type="checkbox"/> government_consumption
2	<input type="checkbox"/> transfers
3	<input type="checkbox"/> gov_enterprises
4	<input type="checkbox"/> top_marg_tax_rate
5	<input type="checkbox"/> size_government
6	<input type="checkbox"/> judicial_independence
7	<input type="checkbox"/> impartial_courts
8	<input type="checkbox"/> protection_property_rights
9	<input type="checkbox"/> military_interference
10	<input type="checkbox"/> integrity_legal_system
11	<input type="checkbox"/> legal_enforcement_contracts
12	<input type="checkbox"/> restrictions_sale_real_property
13	<input type="checkbox"/> reliability_police
14	<input type="checkbox"/> business_costs_crime
15	<input type="checkbox"/> gender_adjustment
16	<input type="checkbox"/> property_rights
17	<input type="checkbox"/> money_growth
18	<input type="checkbox"/> std_inflation

Remove

Attributes: 31
Sum of weights: 1801

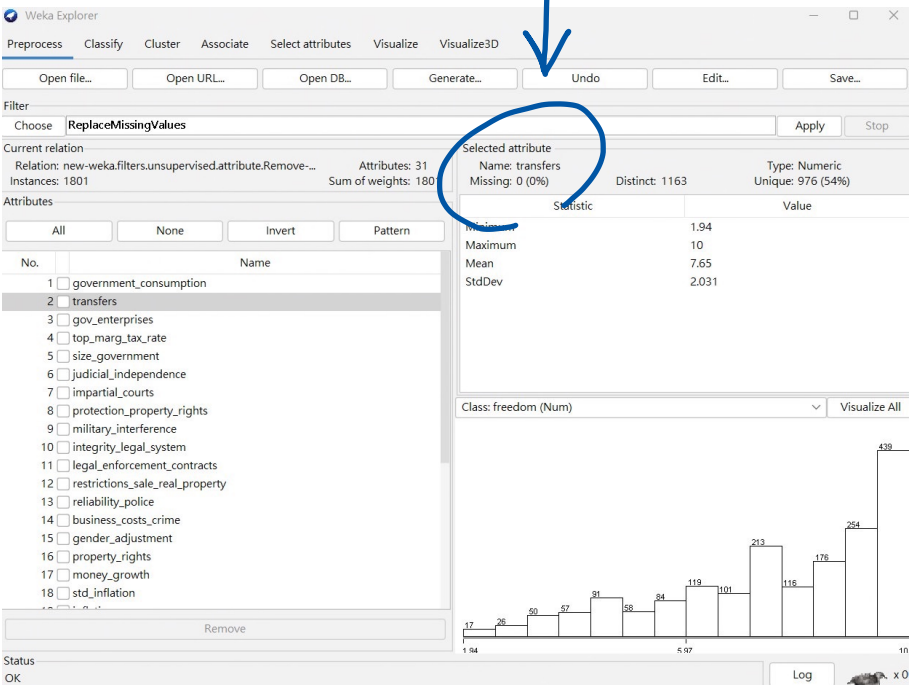
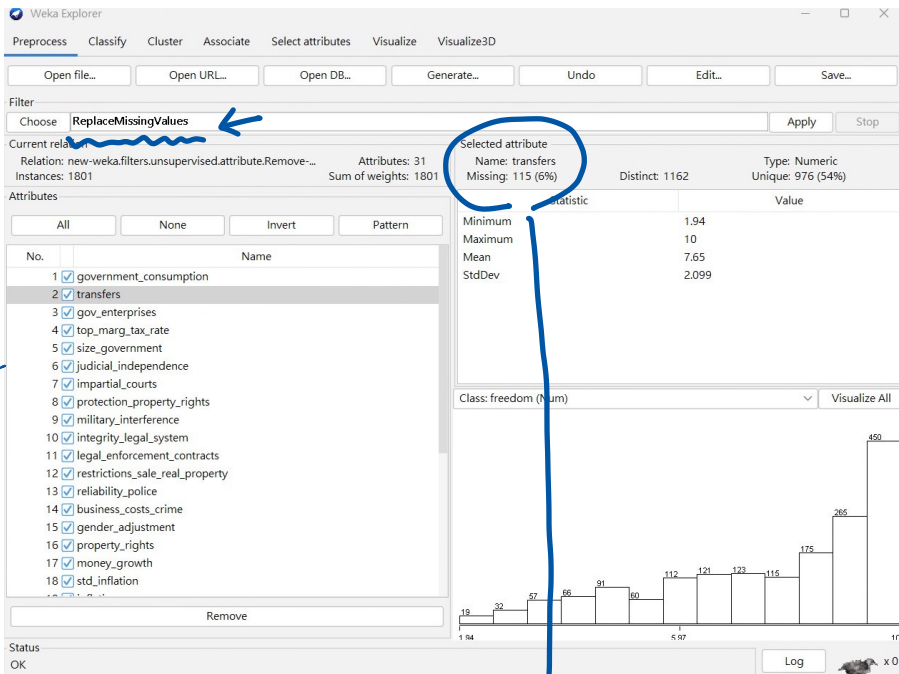
Selected attribute
Name: government_consumption
Missing: 0 (0%)
Distinct: 1332
Type: Numeric
Unique: 1042 (58%)

Statistic	Value
Minimum	0
Maximum	10
Mean	5.737
StdDev	2.263

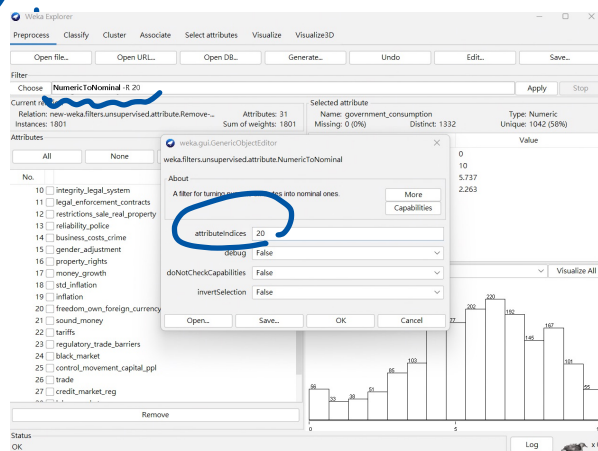
Class: freedom (Num) Visualize All

2.

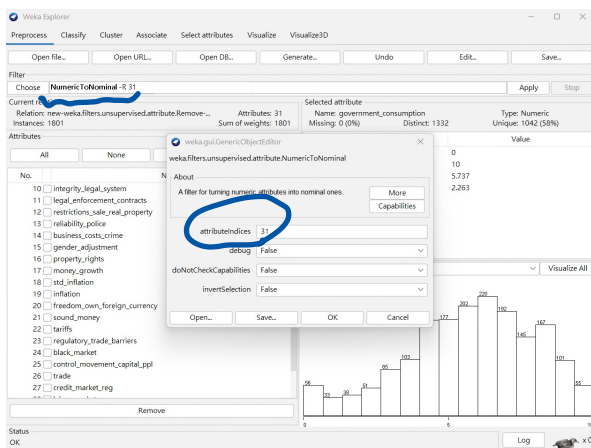
选取全部



3.



分別在attribute indices 填入 20、31 (分別代表freedom own foreign currency 跟 freedom)按下apply,利用 NumericToNominal方法轉型 態



A. 為何Numeric 無法使用在Decision tree

A: 因為要改變的兩個欄位是數值型資料(Numeric), 須將其分類處理, 才能使用在決策樹上, 否則因其離散化的資料太雜或多, 導致決策樹不準確或無法生成。

4

J48

Weka Explorer

Preprocess **Classify** Cluster Associa

Classifier: Choose **J48 - C 0.25 - M 2**

Test options

☐ Use training set

☐ Supplied test set Set...

☐ Cross-validation Folds: 10

☒ Percentage split %: 70

More options...

(Nom) freedom

Start Stop

Result list (right-click for options)

Classifier output

Time taken to build model: 0.07 seconds

=== Evaluation on test split ===

Time taken to test model on test split: 0.01 seconds

=== Summary ===

Correctly Classified Instances	515	95.3704 %
Incorrectly Classified Instances	25	4.6296 %
Kappa statistic	0.8296	
Mean absolute error	0.0489	
Root mean squared error	0.211	
Relative absolute error	16.4357 %	
Root relative squared error	56.021 %	
Total Number of Instances	540	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.815	0.018	0.904	0.815	0.857	0.931	0.864	0.816	0
	0.982	0.185	0.963	0.982	0.972	0.831	0.864	0.948	1
Weighted Avg.	0.954	0.156	0.953	0.954	0.953	0.831	0.864	0.926	

=== Confusion Matrix ===

```

a  b  <-- classified as
75  17 |  a = 0
8  440 |  b = 1

```

分類準確率

70%

混淆矩陣

Decision tree

