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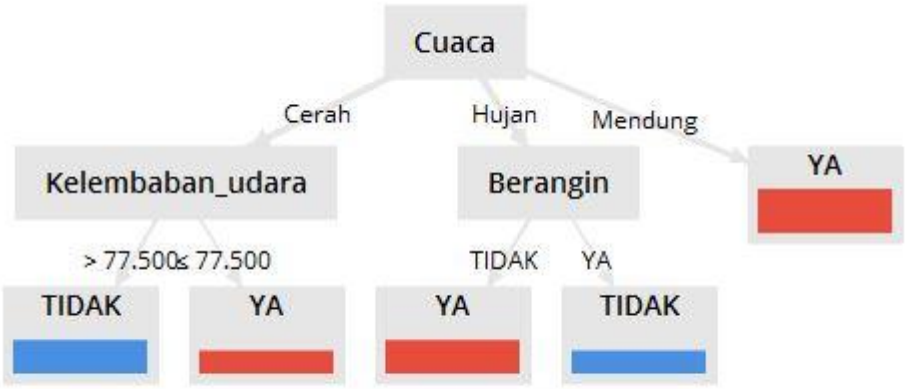
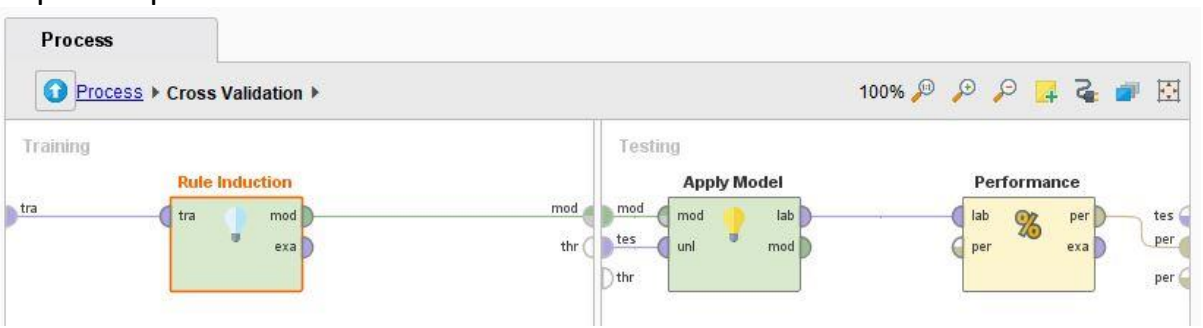
Practicum Report Module 11

Induction of Rules "Data Cuaca"

1. Decision Tree



2. Replace Operator Decision Tree



3. Rule Model

RuleModel

```
else YA  (4 / 8)

correct: 8 out of 12 training examples.
```

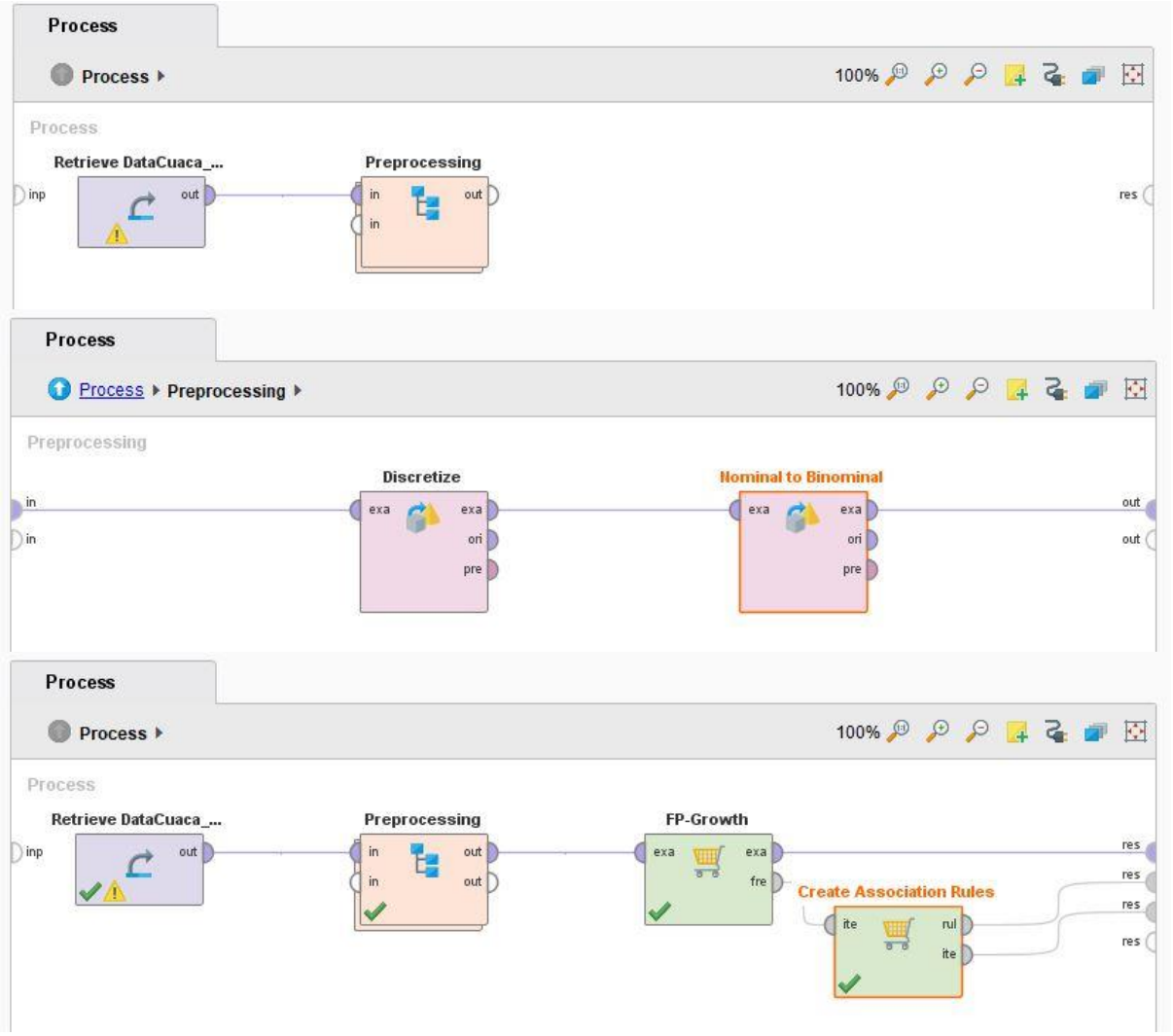
4. Result of Performance Vector

accuracy: 65.00% +/- 47.43% (micro average: 71.43%)

	true TIDAK	true YA	class precision
pred. TIDAK	2	1	66.67%
pred. YA	3	8	72.73%
class recall	40.00%	88.89%	

Association Rules "Data Cuaca"

1. Modelling the operator



2. Run the Process

3. Frequent Item Set (FP-Growth)

No. of Sets: 26
Total Max. Size: 4

Min. Size: 1
Max. Size: 4
Contains Item:
Update View

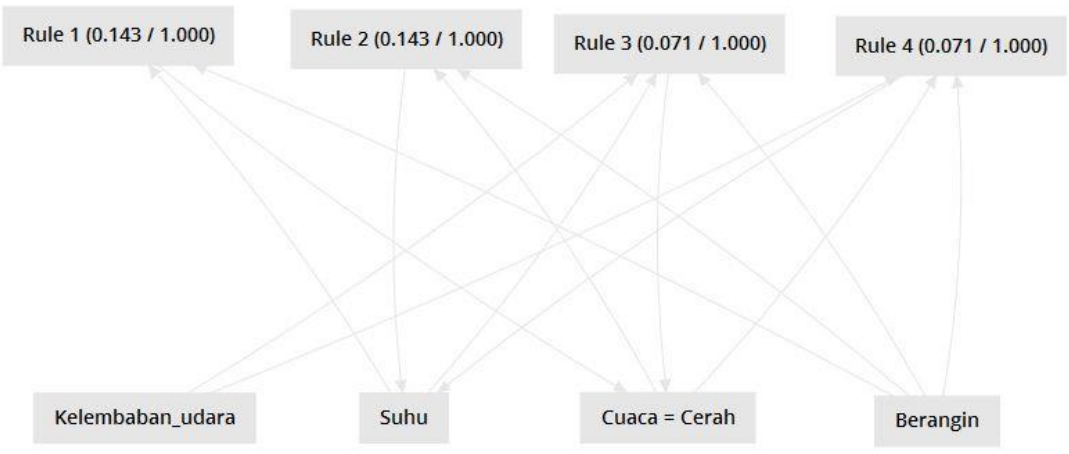
Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.500	Kelembaban_udara			
1	0.429	Berangin			
1	0.429	Suhu			
1	0.357	Cuaca = Cerah			
1	0.357	Cuaca = Hujan			
1	0.286	Cuaca = Mendung			
2	0.214	Kelembaban_udara	Berangin		
2	0.214	Kelembaban_udara	Suhu		
2	0.214	Kelembaban_udara	Cuaca = Cerah		
2	0.143	Kelembaban_udara	Cuaca = Hujan		
2	0.143	Kelembaban_udara	Cuaca = Mendung		
2	0.143	Berangin	Suhu		
2	0.143	Berangin	Cuaca = Cerah		
2	0.143	Berangin	Cuaca = Hujan		
2	0.143	Berangin	Cuaca = Mendung		
2	0.214	Suhu	Cuaca = Cerah		
2	0.071	Suhu	Cuaca = Hujan		
3	0.071	Kelembaban_udara	Berangin	Cuaca = Cerah	
3	0.071	Kelembaban_udara	Berangin	Cuaca = Hujan	
3	0.071	Kelembaban_udara	Berangin	Cuaca = Mendung	
3	0.143	Kelembaban_udara	Suhu	Cuaca = Cerah	
3	0.071	Kelembaban_udara	Suhu	Cuaca = Mendung	
3	0.143	Berangin	Suhu	Cuaca = Cerah	
4	0.071	Kelembaban_udara	Berangin	Suhu	Cuaca = Cerah

4. Association Rules

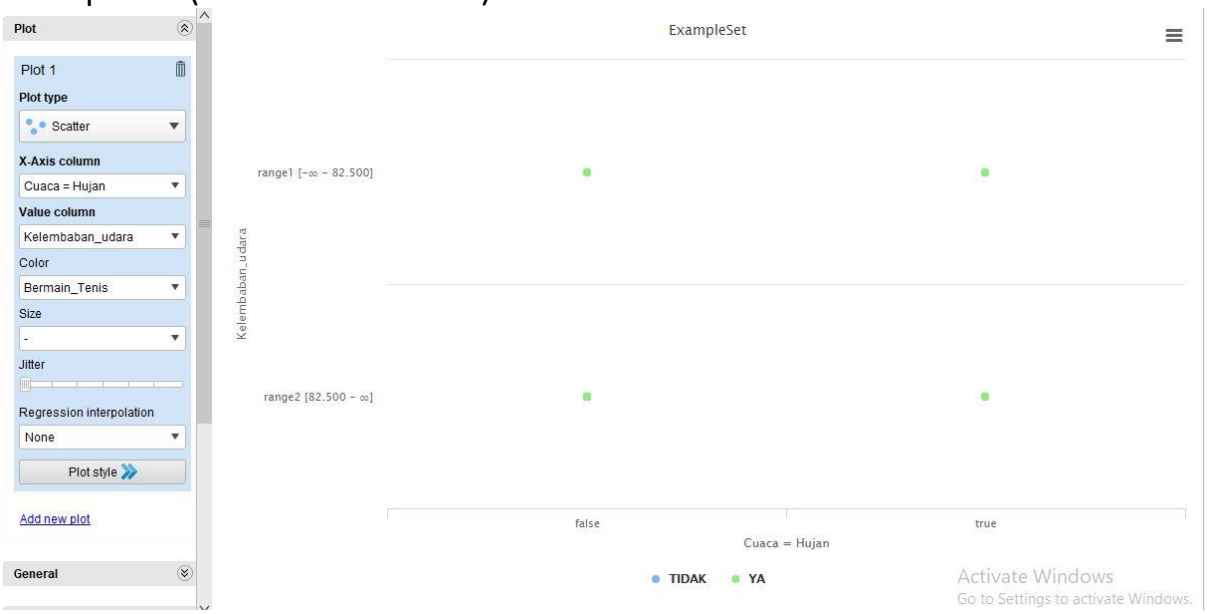
a. Table View

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
1	Berangin, Suhu	Cuaca = Cerah	0.143	1	1	-0.143
2	Berangin, Cuaca = Cerah	Suhu	0.143	1	1	-0.143
3	Kelembaban_udara, Berangin, Suhu	Cuaca = Cerah	0.071	1	1	-0.071
4	Kelembaban_udara, Berangin, Cuaca = Cerah	Suhu	0.071	1	1	-0.071

b. Graph View



c. ExampleSet (Nominal2Binomial) -> Charts View



Assignment

1. Induction Rule (Rule Model) and Performance Vector

RuleModel

```
if Rerata_SKS > 18.500 then TEPAT  (1 / 10)
if Gender = PRIA then TERLAMBAT  (4 / 0)
if Jurusan_SMA = IPA then TEPAT  (0 / 2)
if Jurusan_SMA = IPS then TERLAMBAT  (1 / 0)
else TEPAT  (0 / 0)

correct: 17 out of 18 training examples.
```

accuracy: 55.00% +/- 28.38% (micro average: 52.63%)

	true TERLAMBAT	true TEPAT	class precision
pred. TERLAMBAT	1	4	20.00%
pred. TEPAT	5	9	64.29%
class recall	16.67%	69.23%	

2. Association Rule
    a. Number of Bins = 2
        - FP Growth

No. of Sets: 13
Total Max. Size: 2

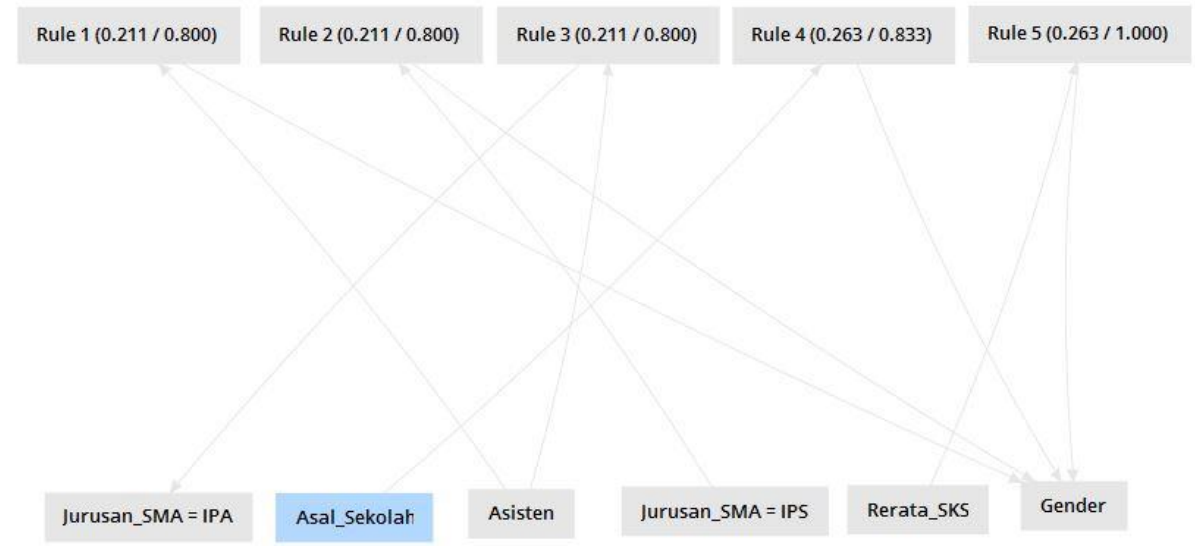
Min. Size: 1
Max. Size: 2
Contains Item:
Update View

Size	Support	Item 1	Item 2
1	0.737	Gender	
1	0.526	Jurusan_SMA = IPA	
1	0.316	Asal_Sekolah	
1	0.263	Asisten	
1	0.263	Jurusan_SMA = IPS	
1	0.263	Rerata_SKS	
1	0.211	Jurusan_SMA = LAIN	
2	0.368	Gender	Jurusan_SMA = IPA
2	0.263	Gender	Asal_Sekolah
2	0.211	Gender	Asisten
2	0.211	Gender	Jurusan_SMA = IPS
2	0.263	Gender	Rerata_SKS
2	0.211	Jurusan_SMA = IPA	Asisten

        - Table View and Graph

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
4	Asal_Sekolah	Gender	0.263	0.833	0.960	-0.368
5	Rerata_SKS	Gender	0.263	1	1	-0.263

p-s	Lift	Convicti...
0.030	1.131	1.579
0.069	1.357	∞



- Chart View


ExampleSet
LUAR
X: false, Y: 1
PRIA
WANITA
Gender
false
true
Jurusan_SMA = IPA
SURAKARTA
LUAR
Activate Windows


ExampleSet
PRIA
WANITA
Gender
true
false
Jurusan_SMA = IPS
SURAKARTA
LUAR
Activate Windows

b. Number of Bins = 3

- FP Growth

No. of Sets: 19
Total Max. Size: 2

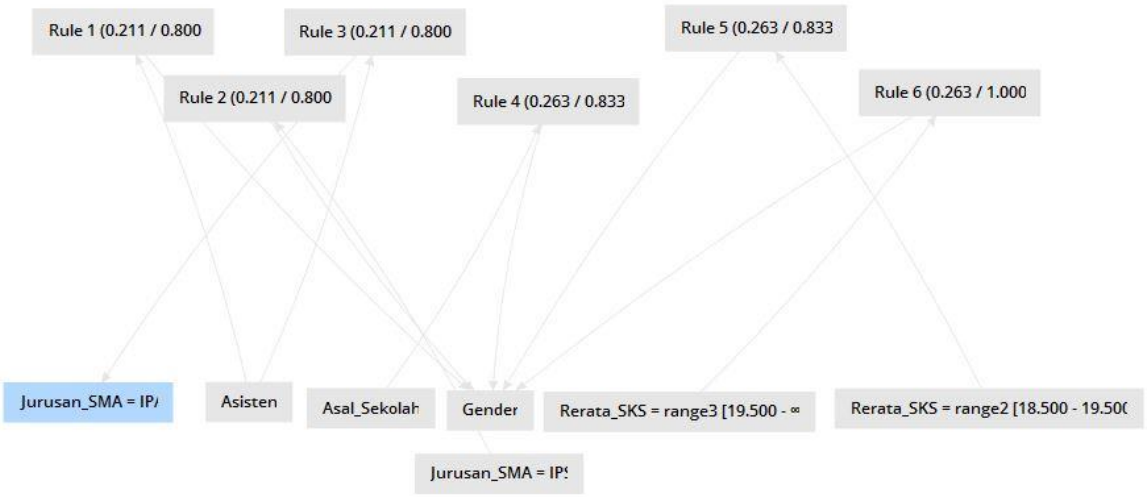
Min. Size: 1
Max. Size: 2
Contains Item:
Update View

Size	Support	Item 1	Item 2
1	0.737	Gender	
1	0.526	Jurusan_SMA = IPA	
1	0.421	Rerata_SKS = range1 [-∞ - 18.500]	
1	0.316	Asal_Sekolah	
1	0.316	Rerata_SKS = range2 [18.500 - 19.500]	
1	0.263	Asisten	
1	0.263	Jurusan_SMA = IPS	
1	0.263	Rerata_SKS = range3 [19.500 - ∞]	
1	0.211	Jurusan_SMA = LAIN	
2	0.368	Gender	Jurusan_SMA = IPA
2	0.211	Gender	Rerata_SKS = range1 [-∞ - 18.500]
2	0.263	Gender	Asal_Sekolah
2	0.263	Gender	Rerata_SKS = range2 [18.500 - 19.500]
2	0.211	Gender	Asisten
2	0.211	Gender	Jurusan_SMA = IPS
2	0.263	Gender	Rerata_SKS = range3 [19.500 - ∞]
2	0.211	Jurusan_SMA = IPA	Rerata_SKS = range1 [-∞ - 18.500]
2	0.211	Jurusan_SMA = IPA	Rerata_SKS = range2 [18.500 - 19.500]
2	0.211	Jurusan_SMA = IPA	Asisten

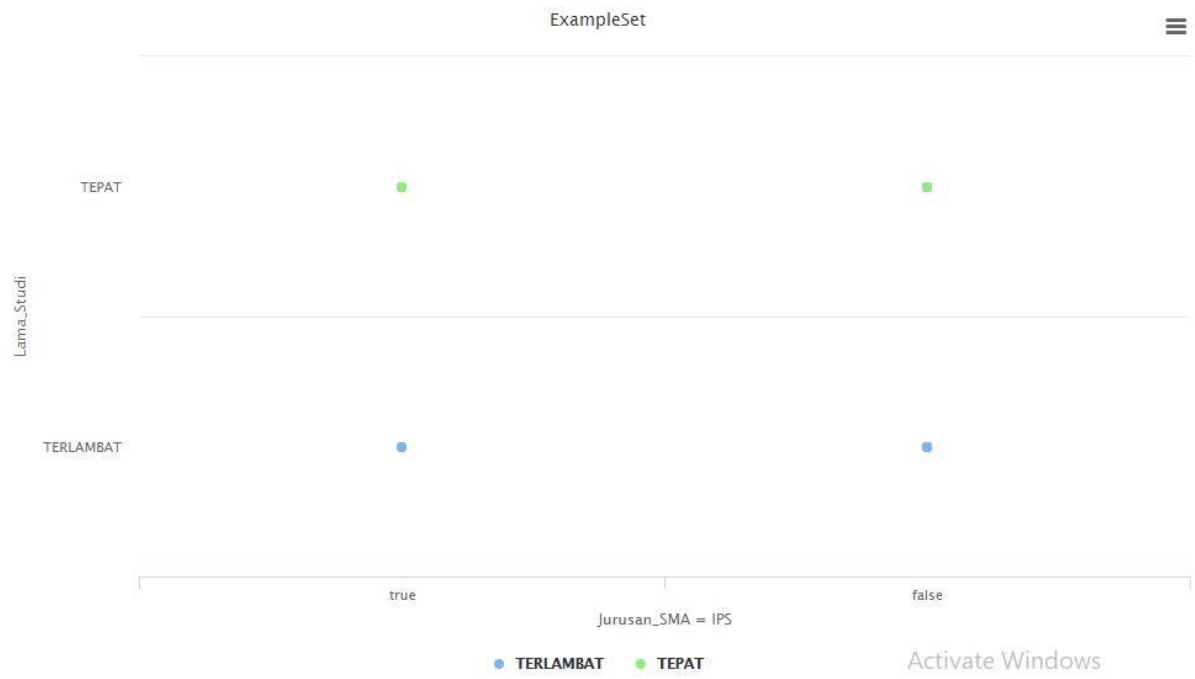
- Table View and Graph

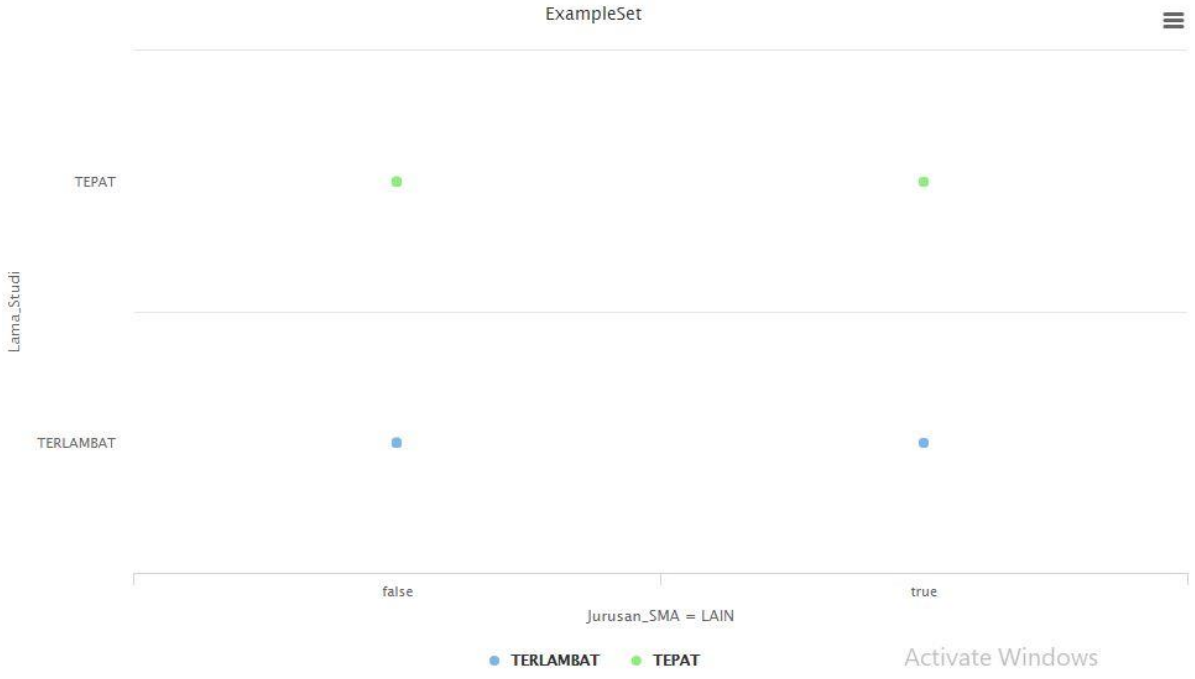
No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
4	Asal_Sekolah	Gender	0.263	0.833	0.960	-0.368
5	Rerata_SKS = range2 [18.500 - 19.500]	Gender	0.263	0.833	0.960	-0.368
6	Rerata_SKS = range3 [19.500 - ∞]	Gender	0.263	1	1	-0.263

p-s	Lift	Convicti...
0.030	1.131	1.579
0.030	1.131	1.579
0.069	1.357	∞



- Chart View


ExampleSet
TEPAT
TERLAMBAT
Lama_Studi
true
false
Jurusan_SMA = IPS
TERLAMBAT
TEPAT
Activate Windows


ExampleSet
TEPAT
TERLAMBAT
Lama_Studi
false
true
Jurusan_SMA = LAIN
TERLAMBAT
TEPAT
Activate Windows