

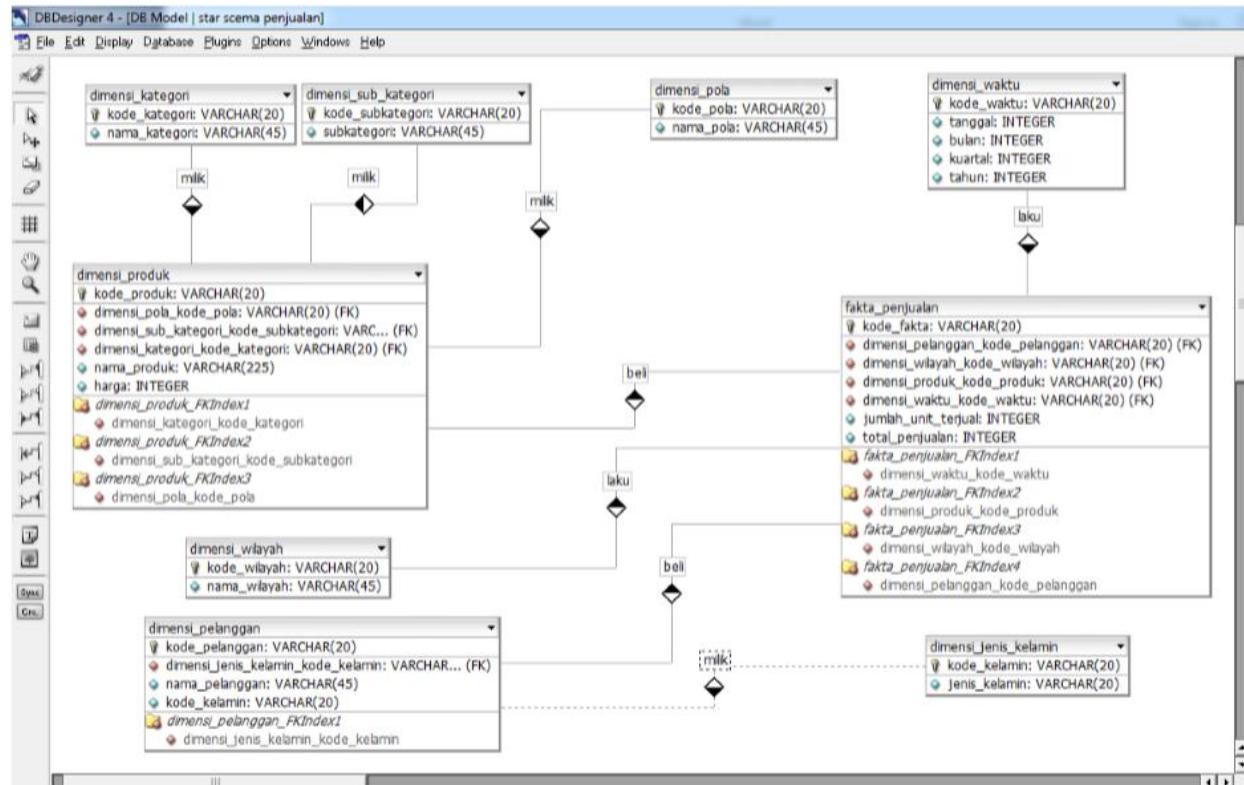
PRAKTIKUM DATA WAREHOUSE DATA MINING

NAMA : DITA DENITA PRAMESTI

NIM : L200170139

KELAS : E

MODUL 1



MODUL 5

- Membuat pivot table dengan data dibawah kemudian menyimpannya dengan nama 'Fakta_Penjualan.xls'.

1	bulan	kuartal	tahun	nama_produk	nama_kategori	nama_subkategori	nama_pola	nama_pelanggan	jenis_kelamin	nama_wilayah	jumlah	harga
2	12	4	2011	Kaos Batik Cap Lukis	Standar	Jarik	Print	Bapak Ketut	PRIA	Bali	2	225000
3	1	1	2012	Batik Standar Cap Tumpal	Batik	Kaos	Cat	Ibu Harini	WANITA	Jawa Timur	14	30000
4	4	2	2012	Celana Standar Cap Warna	Standar	Jarik	Tulis	Ibu Harini	WANITA	Jawa Timur	4	40000
5	4	2	2011	Hem Standar Cap Tumpal	Katun	Hem	Print	Ibu Harini	WANITA	Jawa Timur	3	70000
6	9	3	2012	Bahan Standar Cap Lasem	Standar	Batik	Cap	Bapak Heru	PRIA	Jawa Timur	1	150000
7	5	2	2012	Bahan Standar Cap Garis	KLatun	Hem	Print	Bapak Totok	PRIA	Jawa Timur	3	299000
8	12	4	2011	Bolero Standar Cap Sidomukti	Standar	Bolero	Cap	Ibu Hatamah	WANITA	Jawa Timur	1	225000
9	10	4	2011	Bahan Beludru Cap Mahkota	Standar	Sarimbit	Print	Ibu Hatamah	WANITA	Jawa Timur	1	150000
10	1	1	2011	Jarik Standar Tulis Sarimbit	Katun	Kaos	Print	Bapak Imron	PRIA	Jawa Barat	1	60000
11	2	1	2012	Hem Standar Tulis Madura	Standar	Celana	Cap	Ibu Hadi Sukarni	WANITA	Jawa Barat	17	55000
12	3	1	2010	Bahan Lawasan Tulis Tolet	Standar	Celana	Print	Ibu Hadi Sukarni	WANITA	Jawa Barat	17	55000
13	3	1	2011	Hem Sutra Print Rama	Standar	Bahan	Cap	Ibu Siti Arya	WANITA	Jawa Barat	8	120000
14	12	4	2012	Rok Batik Print Kombinasi	Batik	Rok	Print	Ibu Siti Arya	WANITA	Jawa Barat	1	225000
15	1	1	2012	Jarik Standar Print Sogan	Standar	Jam	Print	Ibu Siti Arya	WANITA	Jawa Barat	44	80000
16	9	3	2012	Celana Standar Print Lasem	Standar	Hem	Cap	Ibu Aini Kasmaji	WANITA	Jawa Tengah	1	100000
17	6	2	2012	Jam Standar Print Lukis	Lawasan	Bahan	Tulis	Ibu Niken	WANITA	Jawa Tengah	1	130000
18	8	3	2011	Sarimbit Standar Print Lukis	Standar	Hem	Tulis	Ibu Atik	WANITA	Jawa Tengah	5	550000
19	4	2	2012	Kaos Katun Print Bola	Standar	Bahan	Cap	Ibu Tyas	WANITA	Jawa Tengah	7	135000
20	6	2	2010	Hem Katun Print Kelengan	Buludru	Bahan	Cap	Ibu Tyas	WANITA	Jawa Tengah	1	500000
21	11	4	2010	Hem Katun Print Kawung	Sutra	Hem	Print	Ibu Tyas	WANITA	Jawa Tengah	5	100000

Hasil pivot table

Menampilkan nama_subkategori,tahun dan jumlah.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3	Sum of jumlah	Column Labels	2010	2011	2012	(blank)	Grand Total									
4	Row Labels		1	8	8		17									
5	Bahan															
6	Batik															
7	Bolero															
8	Celana		17	17			34									
9	Hem		5	8	4		17									
10	Jam						44	44								
11	Jarik						2	4	6							
12	Kaos						1	14	15							
13	Rok							1	1							
14	Sarimbit								1							
15	(blank)															
16	Grand Total		23	21	93		137									
17																
18																
19																
20																
21																
22																

- Menambahkan tipe summary baru, Tambahkan field jumlah kembali ke kotak Value dengan cara klik dan drag, sehingga muncul field baru dengan nama Sum of jumlah2.

PivotTable Fields pane showing fields: nama_pelanggan, jenis_kelamin, nama_wilayah, jumlah (selected), harga. The 'Sum of jumlah' field is selected in the 'Values' section of the 'Columns' area.

Kemudian mengubah nama field sum of jumlah2 menjadi count of jumlah 2 dengan klik sum of jumlah 2 pada PivotTableField dan pilih dialog Value Field Settings.

PivotTable Fields pane showing fields: nama_pelanggan, jenis_kelamin, nama_wilayah, jumlah (selected), harga. The 'Count of jumlah' field is selected in the 'Values' section of the 'Columns' area.

3. Calculated Field

Caranya klik analyze →pilih fields,items&sets→calculated field

Pada kotak dialog Insert Calculated Field yang muncul, masukkan nilai berikut kemudian klik tombol OK.

a) Name : Pendapatan

b) Formula : = jumlah * harga (Pilih field jumlah kemudian klik Insert

Field kemudian ketikkan tanda “*” dan masukkan field harga)

The screenshot shows a Microsoft Excel window with a PivotTable named 'PivotTable1'. The PivotTable Fields pane on the right indicates that 'jumlah' and 'harga' are selected. A 'Calculated Field' dialog box is open, prompting the user to define a new calculated field named 'Pendapatan' with the formula '= jumlah*harga'. The main PivotTable area displays data for years 2010 and 2011, with columns for 'jumlah' and 'harga'.

Field baru, "Sum of Pendapatan" akan muncul pada Pivot Table

		2011				2012				
		Count of jum	Sum of Pendap	Sum of jum	Count of jum	Sum of Pendap	Sum of jum	Count of jum	Sum of Pendap	
6		1	500000	8	1	960000	8	2	2120000	
7			0			0	1	1	150000	
8			0	1	1	225000			0	
9		1	935000			0	17	1	935000	
10		1	500000	8	2	4960000	4	2	1596000	
11			0			0	44	1	3520000	
12			0	2	1	450000	4	1	160000	
13			0	1	1	60000	14	1	420000	
14			0			0	1	1	225000	
15			0	1	1	150000			0	
16			0			0			0	
17		3	15065000	21	7	29400000	93	10	115692000	

4. Operasi Roll Up dan Drill Down

Row Labels	Column Labels		2010		2011			
	Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of jumlah	
Bahan	1	1	500000	8	1	960000	0	
Buludru	1	1	500000	0	0	0	0	
Hem Katun Print Kelengan	1	1	500000	0	0	0	0	
Lawasan				0	0	0	0	
Jam Standar Print Lukis			0	0	0	0	0	
Standar			0	8	1	960000	0	
Hem Sutra Print Rama			0	8	1	960000	0	
Kaos Katun Print Bola			0	0	0	0	0	
Batik			0	0	0	0	0	
Standar			0	0	0	0	0	
Bahan Standar Cap Lasem			0	0	0	0	0	
Bolero			0	1	1	225000	0	
Standar			0	1	1	225000	0	
Bolero Standar Cap Sidomukti			0	1	1	225000	0	
Celana	17	1	935000	0	0	0	0	
Standar	17	1	935000	0	0	0	0	
Bahan Lawasan Tulis Tolet	17	1	935000	0	0	0	0	
Hem Standar Tulis Madura			0	0	0	0	0	
Hem	5	1	500000	8	2	4960000	0	
Katun			0	3	1	210000	0	
Hem Standar Cap Tumpal			0	3	1	210000	0	
Klatun			0	0	0	0	0	
Bahan Standar Cap Garis			0	0	0	0	0	
Standar			0	5	1	2750000	0	
Celana Standar Print Lasem			0	5	1	2750000	0	
Sarimbit Standar Print Lukis			0	5	1	2750000	0	

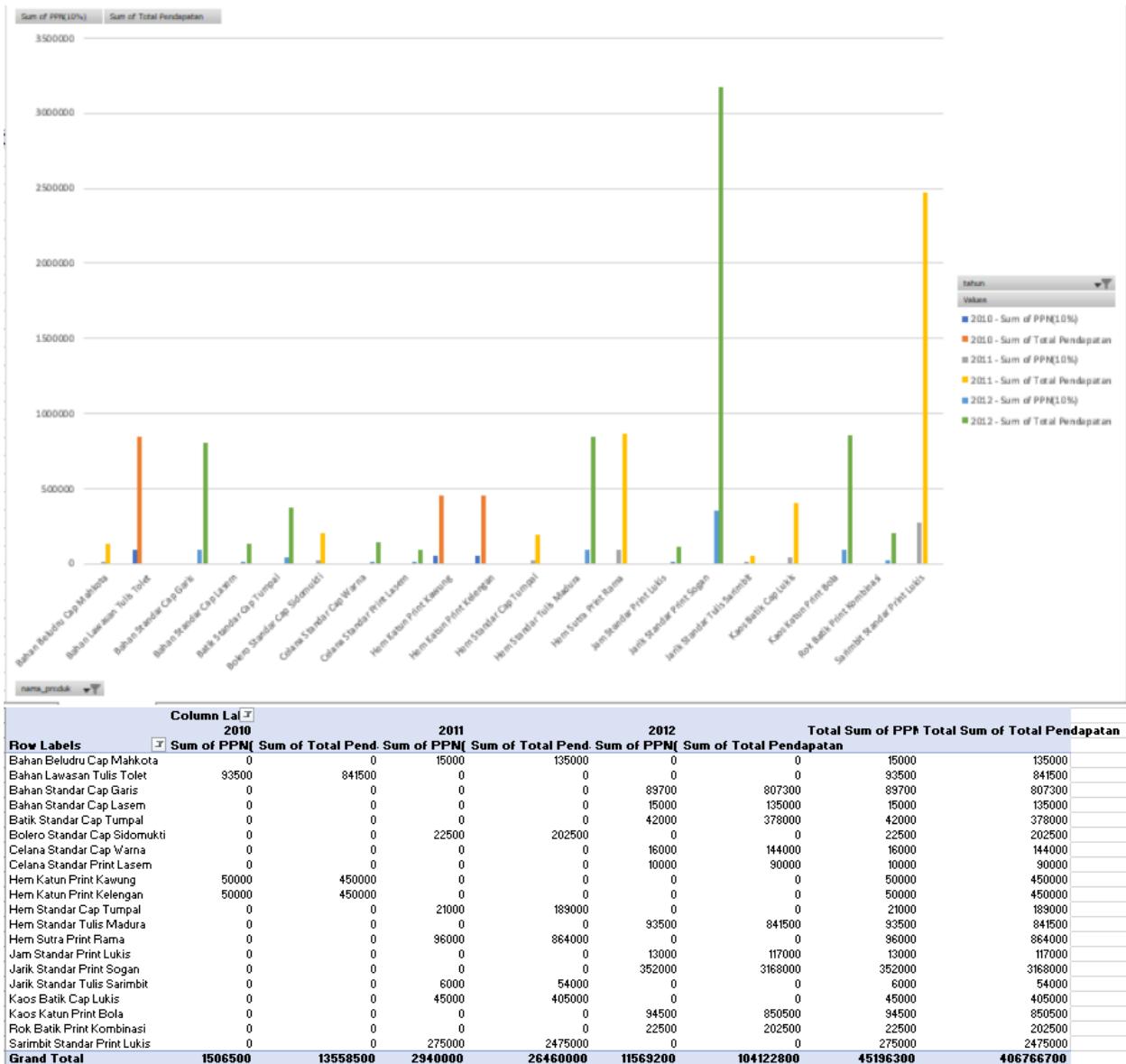
Tugas

1. Dengan menggunakan PivotTable pada file Fakta_Penjualan.xls tambahkan 2 buah field, yaitu :

- PPN (Pajak Pertambahan Nilai) sebesar 10% dari tiap pendapatan pada Pivot Table.
- Total Penghasilan yang dihitung dari pendapatan dikurangi dengan PPN tersebut.

Sum of Total Pendapatan	2012		Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of PPN(10%)	Sum of Total Pendapatan	Total Sum of jumlah	Total Count of jumlah2	Total Sum of Pendapatan	Total Sum of PPN(10%)	Total Sum of Total Pendapatan
	Sum of jumlah	Count of jumlah2										
864000	8	2	212000	212000	1908000	17	4	15045000	1504500	15045000	13540500	
0	1	1	150000	150000	1350000	1	1	150000	15000	150000	135000	
202500			0	0	0	0	1	225000	1	225000	225000	202500
0	17	1	935000	935000	841500	34	2	3740000	2	3740000	3740000	3566000
4464000	4	2	1596000	1596000	1436400	17	5	1902300	1	1902300	1902300	17120700
0	44	1	3520000	3520000	3168000	44	1	3520000	1	3520000	3520000	3168000
405000	4	1	160000	160000	1440000	6	2	1590000	2	1590000	1590000	1431000
54000	14	1	420000	420000	378000	15	2	1350000	2	1350000	1350000	1215000
0	1	1	225000	225000	202500	1	1	225000	1	225000	225000	202500
135000			0	0	0	0	1	150000	1	150000	150000	135000
26460000	93	10	115692000	115692000	104122800	137	20	451963000	20	451963000	451963000	406766700

2. Buatlah PivotTable dan PivotChart untuk melihat PPN dan Total Penghasilan tersebut selama tahun 2010 – 2012. Kategori produk apakah yang memberikan nilai penghasilan terbanyak selama 3 tahun tersebut?



MODUL 6

	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten	Lama_Studi
2	IPS	WANITA	SURAKARTA	18	TIDAK	TERLAMBAT
3	IPA	PRIA	SURAKARTA	19	YA	TEPAT
4	LAIN	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT
5	IPA	PRIA	LUAR	17	TIDAK	TERLAMBAT
6	IPA	WANITA	SURAKARTA	17	TIDAK	TEPAT
7	IPA	WANITA	LUAR	18	YA	TEPAT
8	IPA	PRIA	SURAKARTA	18	TIDAK	TERLAMBAT
9	IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
10	IPS	PRIA	LUAR	18	TIDAK	TERLAMBAT
11	LAIN	WANITA	SURAKARTA	18	TIDAK	TEPAT
12	IPA	WANITA	SURAKARTA	19	TIDAK	TEPAT
13	IPS	PRIA	SURAKARTA	20	TIDAK	TEPAT
14	IPS	PRIA	SURAKARTA	19	TIDAK	TEPAT
15	IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
16	IPA	PRIA	LUAR	22	YA	TEPAT
17	LAIN	PRIA	SURAKARTA	16	TIDAK	TERLAMBAT
18	IPS	PRIA	LUAR	20	TIDAK	TEPAT
19	LAIN	PRIA	LUAR	23	YA	TEPAT
20	IPA	PRIA	SURAKARTA	21	YA	TEPAT
21	IPS	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT

- a. Jumlah data masing-masing kelas IPA,IPS,LAIN pada atribut Jurusan SMA

a.Jurusan_SMA	SMA IPA	10
	SMA IPS	6
	SMA LAIN	4

- IPA : =COUNTIF(A2:A21,"IPA")
- IPS : =COUNTIF(A2:A21,"IPS")
- LAIN : =COUNTIF(A2:A21,"LAIN")

- b. Jumlah data masing-masing kelas TEPAT, TERLAMBAT pada atribut Lama_Studi

b.Lama_Studi	TEPAT	13
	TERLAMBAT	7

- TEPAT : =COUNTIF(F2:F21,"TEPAT")
- TERLAMBAT : =COUNTIF(F2:F21,"TERLAMBAT")

- c. Nilai max, min, mean, dan standard deviation pada atribut rerata_SKS

c.Rerata_SKS	Mean	18.95
	Max	23
	Min	16
	Standar Deviasi	1.669384

- Mean : =AVERAGE(D2:D21)
- Max : =MAX(D2:D21)
- Min : =MIN(D2:D21)
- Standard Deviation : =STDEV(D2:D21)

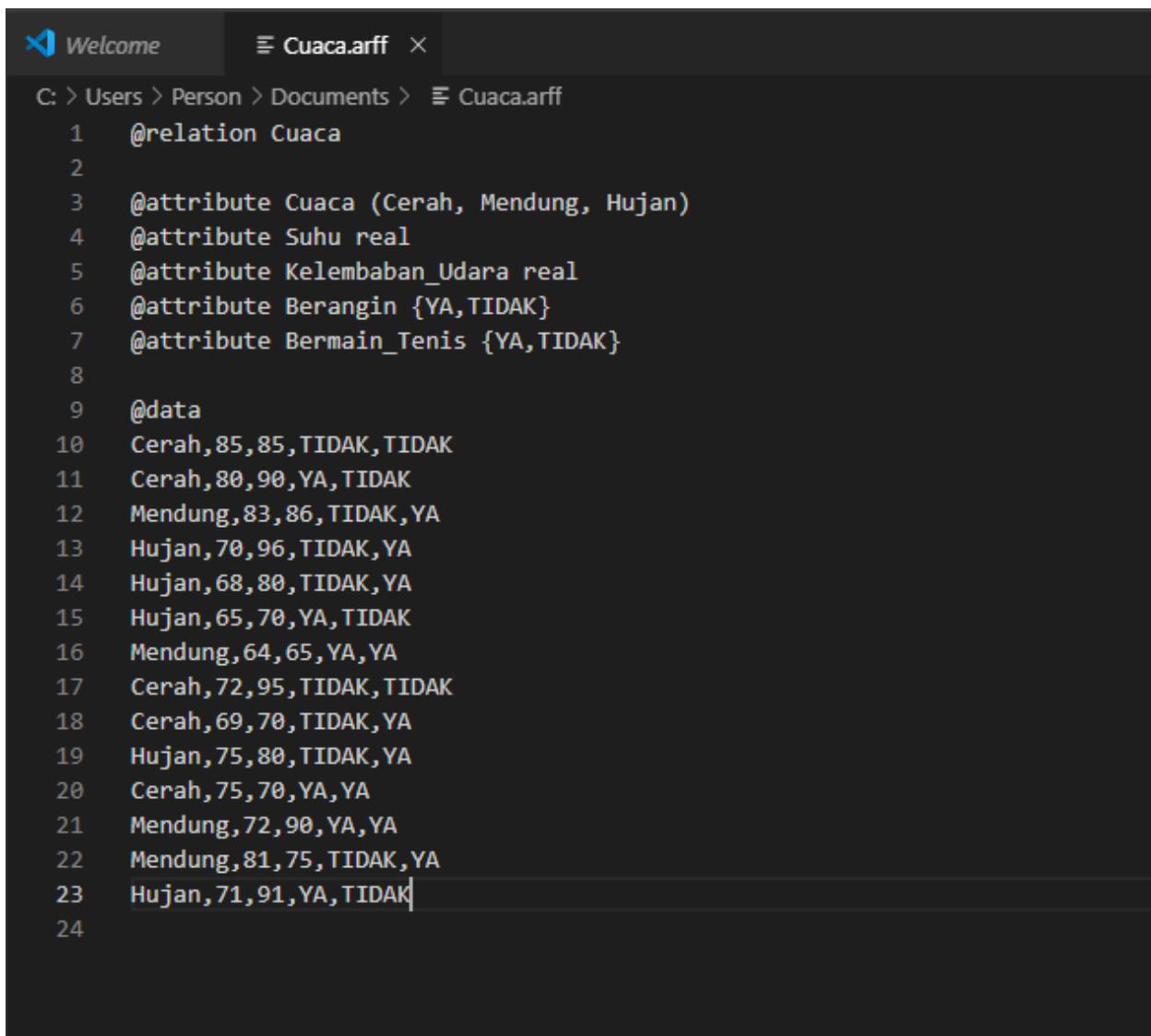
d. Jumlah data gabungan kelas pada atribut Jurusan_SMA=IPA,Gender=PRIA, Asisten=ya,Lama_Studi=TEPAT

d.Data Gabungan 3
 $=COUNTIFS(A2:A21,"IPA",B2:B21,"PRIA",E2:E21,"YA",F2:F21,"TEPAT")$

MODUL 7

PERCOBAAN

1. File ARFF

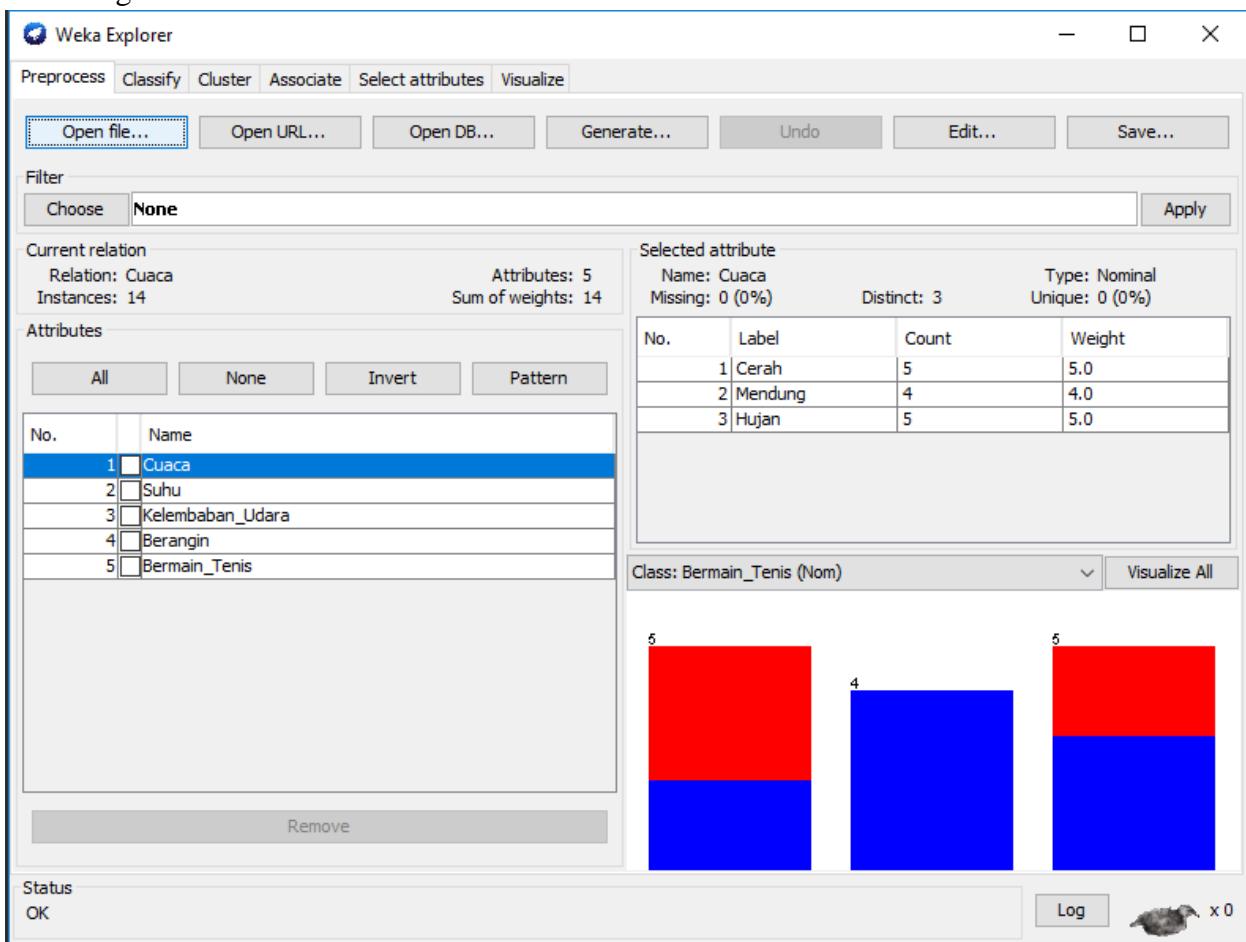


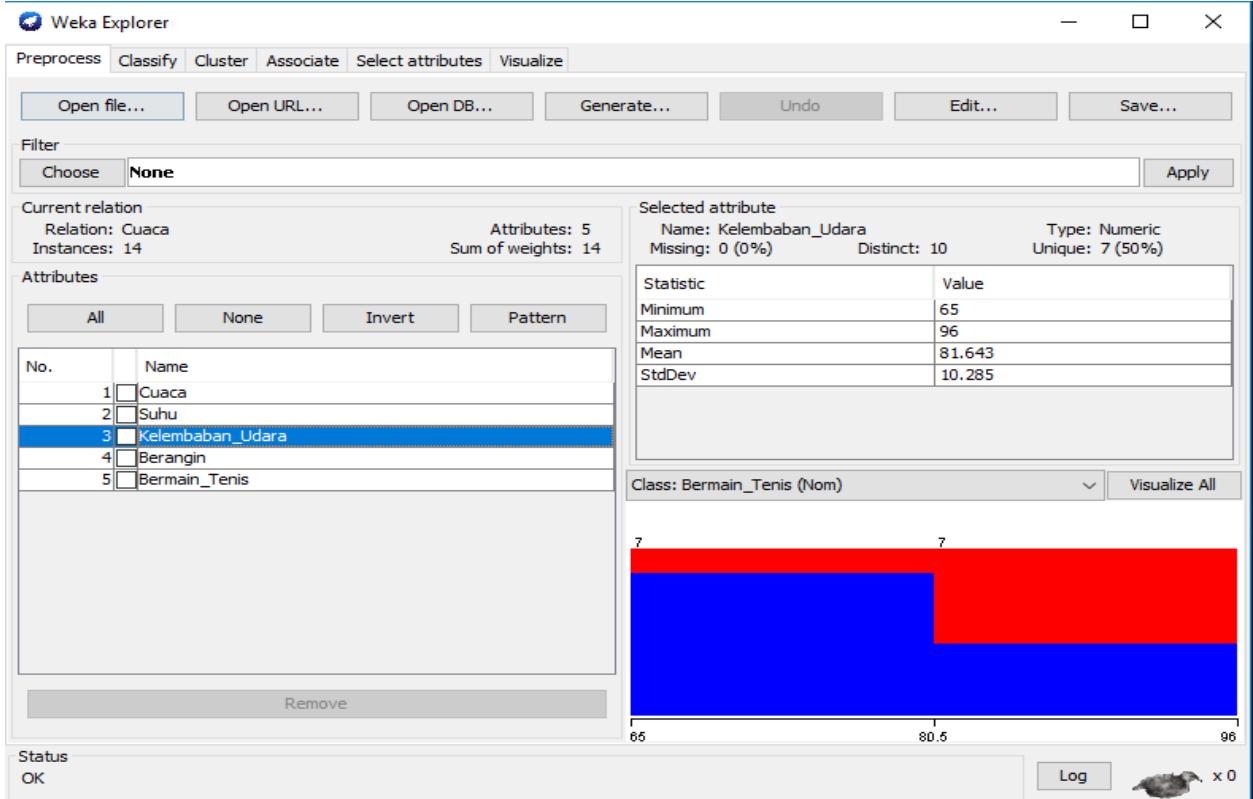
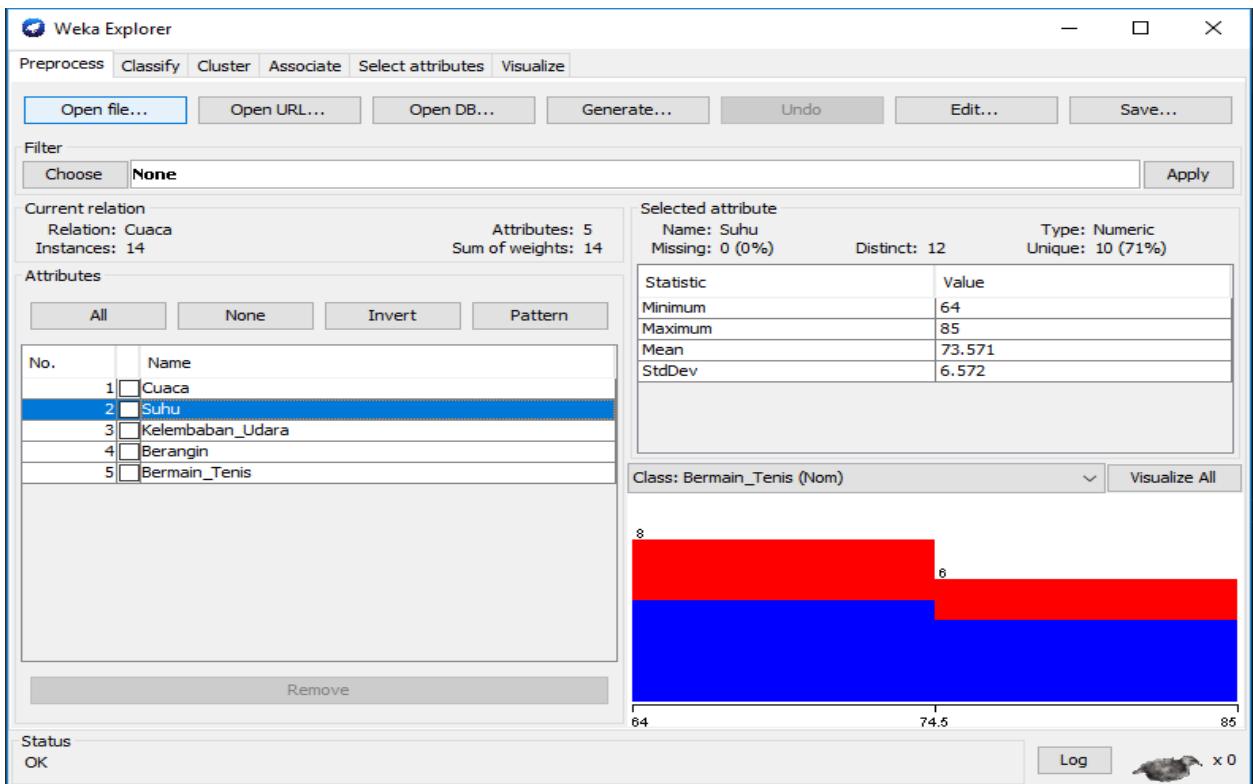
```

Welcome Cuaca.arff
C: > Users > Person > Documents > Cuaca.arff
1 @relation Cuaca
2
3 @attribute Cuaca {Cerah, Mendung, Hujan}
4 @attribute Suhu real
5 @attribute Kelembaban_Udara real
6 @attribute Berangin {YA, TIDAK}
7 @attribute Bermain_Tenis {YA, TIDAK}
8
9 @data
10 Cerah,85,85,TIDAK,TIDAK
11 Cerah,80,90,YA,TIDAK
12 Mendung,83,86,TIDAK,YA
13 Hujan,70,96,TIDAK,YA
14 Hujan,68,80,TIDAK,YA
15 Hujan,65,70,YA,TIDAK
16 Mendung,64,65,YA,YA
17 Cerah,72,95,TIDAK,TIDAK
18 Cerah,69,70,TIDAK,YA
19 Hujan,75,80,TIDAK,YA
20 Cerah,75,70,YA,YA
21 Mendung,72,90,YA,YA
22 Mendung,81,75,TIDAK,YA
23 Hujan,71,91,YA,TIDAK
24

```

2. Gambar grafik





Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

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

Filter Choose None Apply

Current relation
Relation: Cuaca Attributes: 5
Instances: 14 Sum of weights: 14

Attributes
All None Invert Pattern

No.	Name
1	Cuaca
2	Suhu
3	Kelembaban_Udara
4	Berangin
5	Bermain_Tenis

Remove

Selected attribute
Name: Berangin Type: Nominal
Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

No.	Label	Count	Weight
1	YA	6	6.0
2	TIDAK	8	8.0

Class: Bermain_Tenis (Nom) Visualize All

Status OK Log

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

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

Filter Choose None Apply

Current relation
Relation: Cuaca Attributes: 5
Instances: 14 Sum of weights: 14

Attributes
All None Invert Pattern

No.	Name
1	Cuaca
2	Suhu
3	Kelembaban_Udara
4	Berangin
5	Bermain_Tenis

Remove

Selected attribute
Name: Bermain_Tenis Type: Nominal
Missing: 0 (0%) Distinct: 2 Unique: 0 (0%)

No.	Label	Count	Weight
1	YA	9	9.0
2	TIDAK	5	5.0

Class: Bermain_Tenis (Nom) Visualize All

Status OK Log

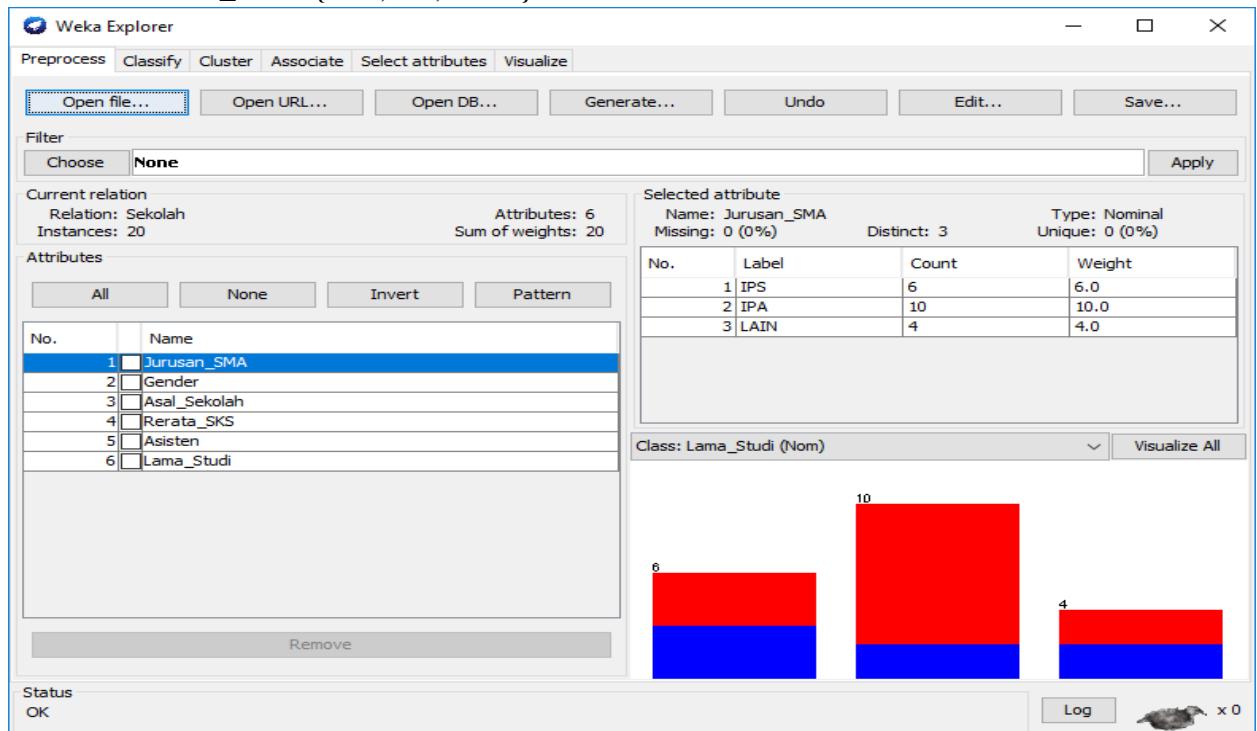
TUGAS

1. File ARFF

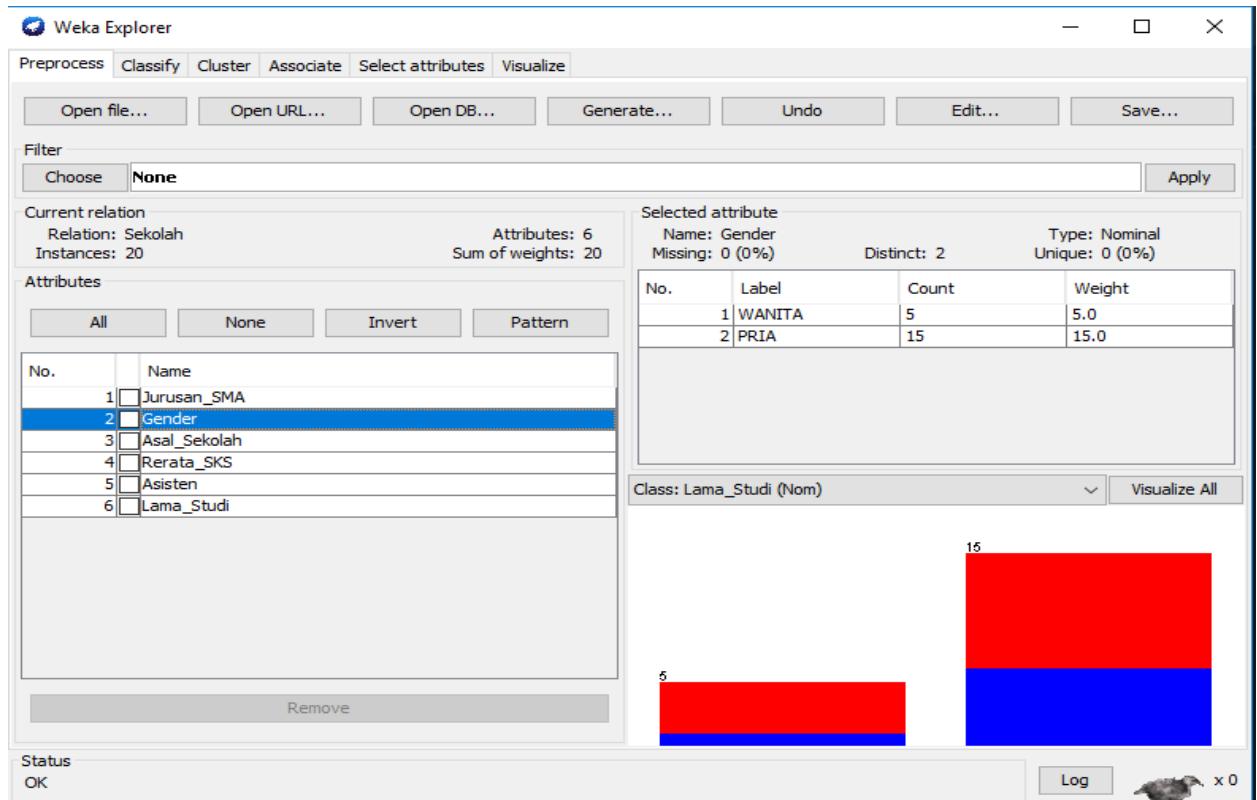
```
❶ Welcome    ⌂ Cuaca.arff    ⌂ Sekolah.arff X
C: > Users > Person > Documents > Modul_7 > ⌂ Sekolah.arff
1 @relation Sekolah
2
3 @attribute Jurusan_SMA{IPS,IPA,LAIN}
4 @attribute Gender{WANITA,PRIA}
5 @attribute Asal_Sekolah{SURAKARTA,LUAR}
6 @attribute Rerata_SKS real
7 @attribute Asisten{TIDAK,YA}
8 @attribute Lama_Studi{TERLAMBAT,TEPAT}
9
10 @data
11 IPS,WANITA,SURAKARTA,18,TIDAK,TERLAMBAT
12 IPA,PRIA,SURAKARTA,19,YA,TEPAT
13 LAIN,PRIA,SURAKARTA,19,TIDAK,TERLAMBAT
14 IPA,PRIA,LUAR,17,TIDAK,TERLAMBAT
15 IPA,WANITA,SURAKARTA,17,TIDAK,TEPAT
16 IPA,WANITA,LUAR,18,YA,TEPAT
17 IPA,PRIA,SURAKARTA,18,TIDAK,TERLAMBAT
18 IPA,PRIA,SURAKARTA,19,TIDAK,TEPAT
19 IPS,PRIA,LUAR,18,TIDAK,TERLAMBAT
20 LAIN,WANITA,SURAKARTA,18,TIDAK,TEPAT
21 IPA,WANITA,SURAKARTA,19,TIDAK,TEPAT
22 IPS,PRIA,SURAKARTA,20,TIDAK,TEPAT
23 IPS,PRIA,SURAKARTA,19,TIDAK,TEPAT
24 IPA,PRIA,SURAKARTA,19,TIDAK,TEPAT
25 IPA,PRIA,LUAR,22,YA,TEPAT
26 LAIN,PRIA,SURAKARTA,16,TIDAK,TERLAMBAT
27 IPS,PRIA,LUAR,20,TIDAK,TEPAT
28 LAIN,PRIA,LUAR,23,YA,TEPAT
29 IPA,PRIA,SURAKARTA,21,YA,TEPAT
30 IPS,PRIA,SURAKARTA,19,TIDAK,TERLAMBAT
31
```

2. Gambar grafik

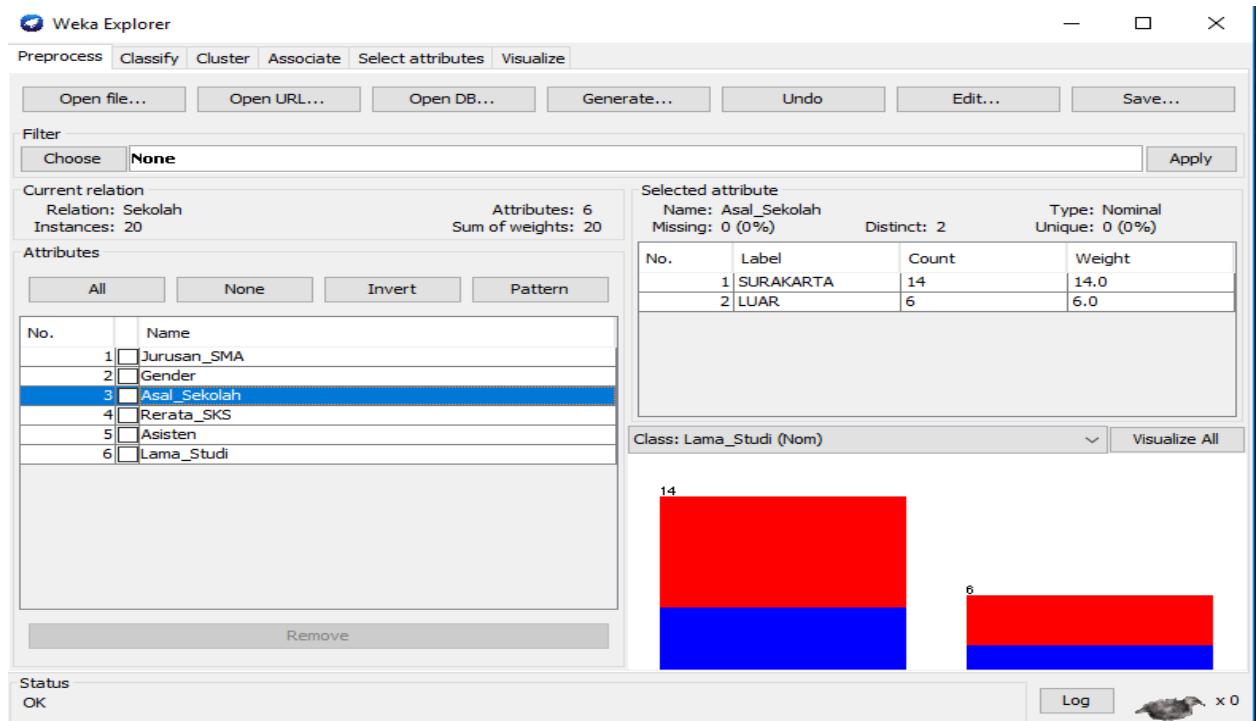
➤ Atribut Jurusan_SMA {IPA,IPS,LAIN}



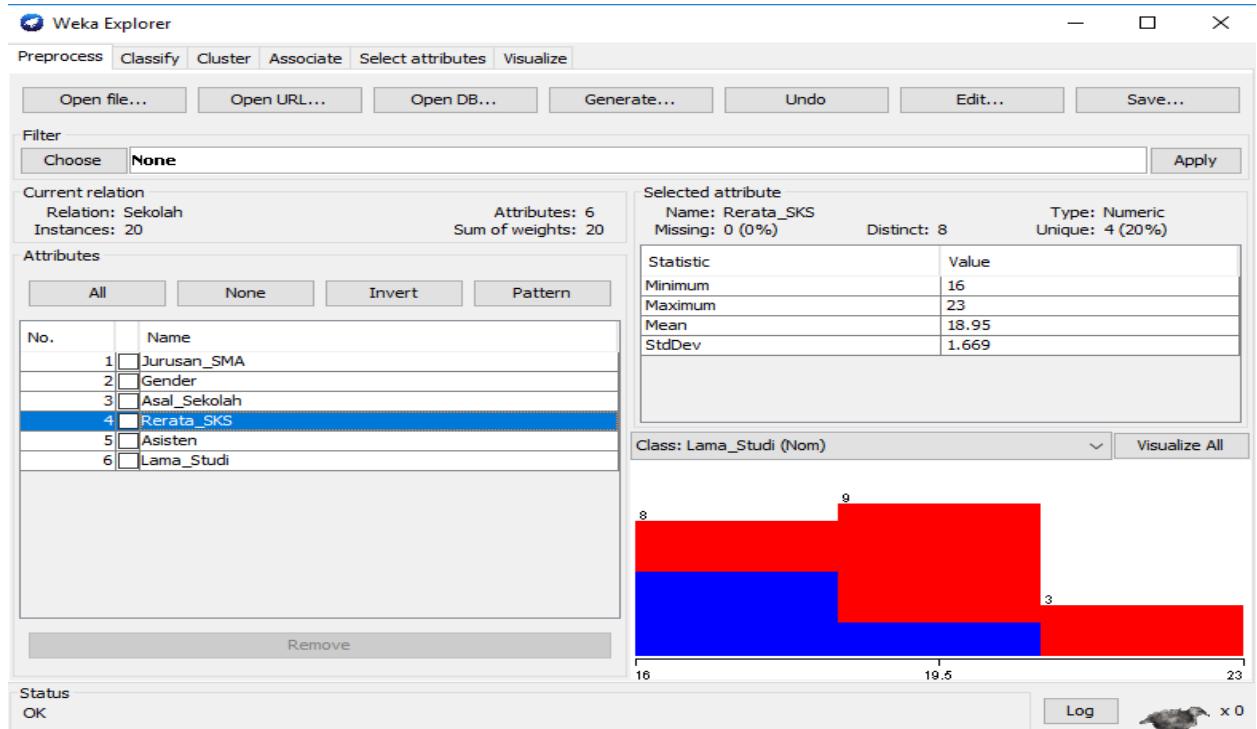
➤ Gender{PRIA,WANITA}



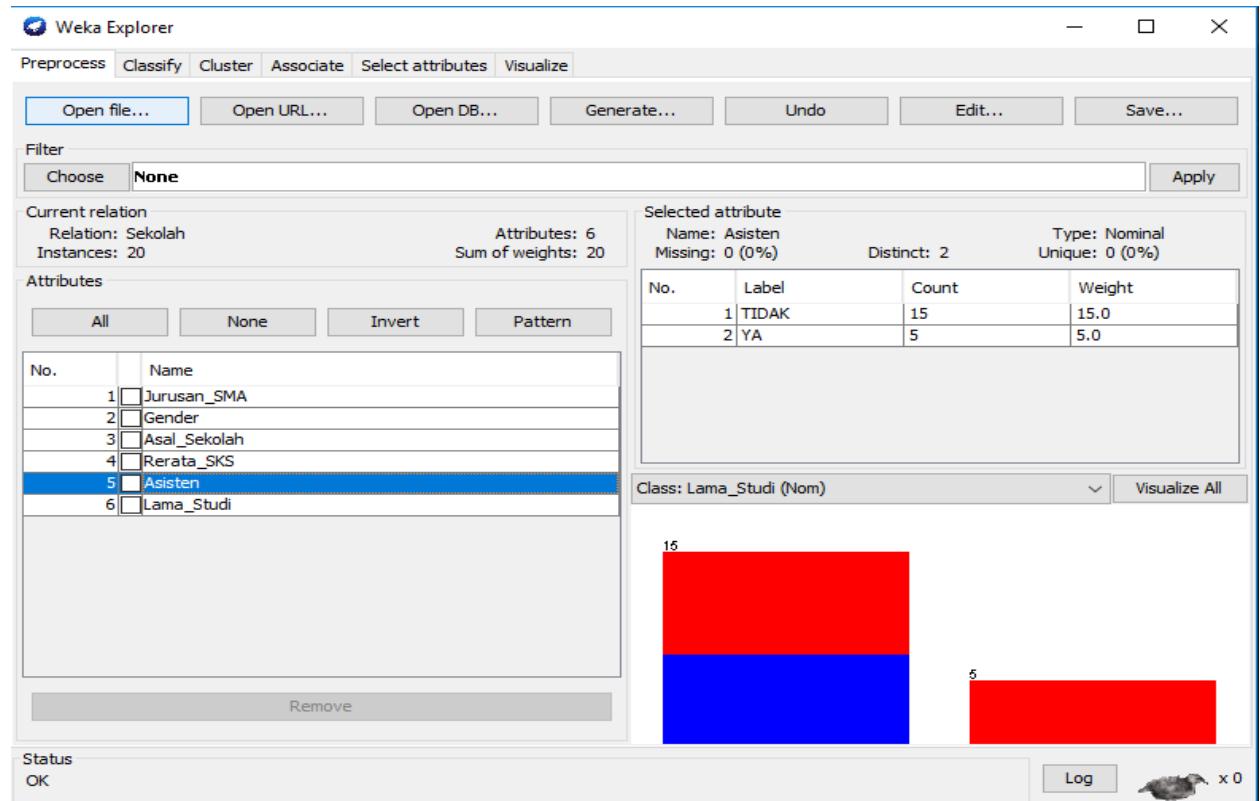
➤ Asal_Sekolah{SURAKARTA,LUAR}



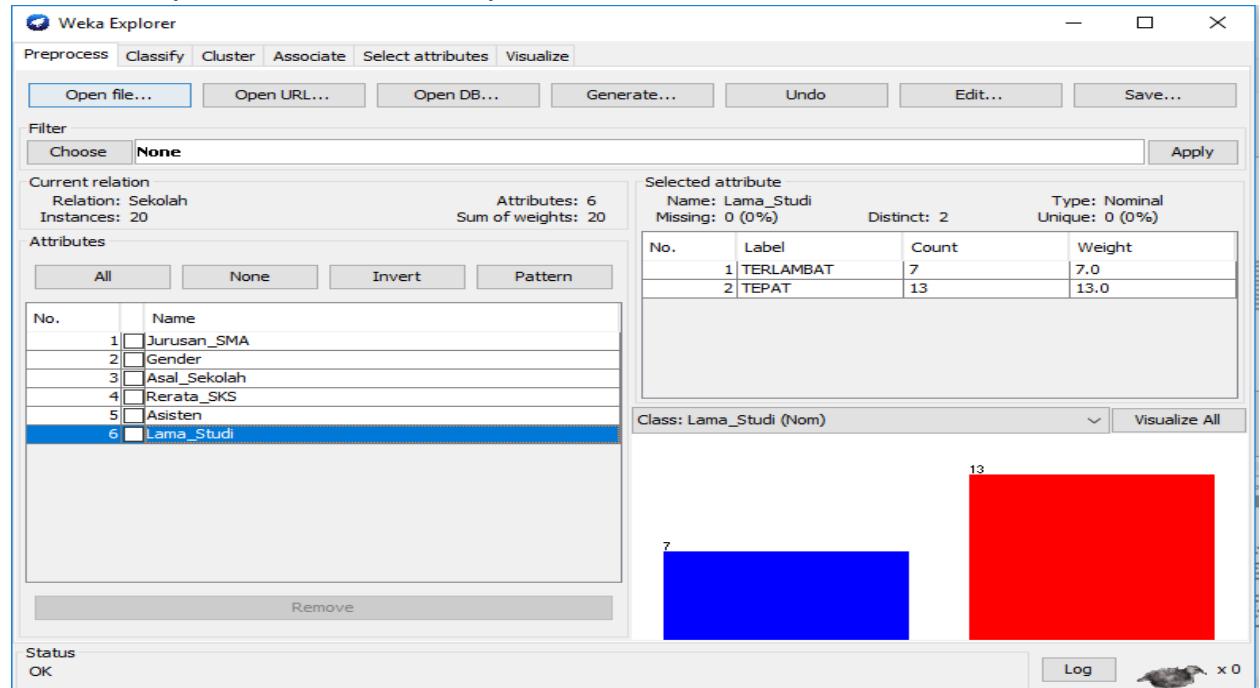
➤ Rerata_SKS real



➤ Asisten{TIDAK,YA}



➤ Lama_Studi{TERLAMBAT,TIDAK}



3.

4. Attribute bertipe binomial ada 4 yaitu:

- Atribut Gender{WANITA,PRIA}
- Atribut Asal_Sekolah{SURAKARTA,LAIN}
- Atribut Asisten{TIDAK,YA}
- Lama_Studi{TERLAMBAT,TEPAT}

Attribute bertipe polynominal ada 1 yaitu:

- Atribut Jurusan_SMA {IPS,IPA,LAIN}

5. Attribute bertipe real ada 1 yaitu:

- Atribut Rerata_SKS

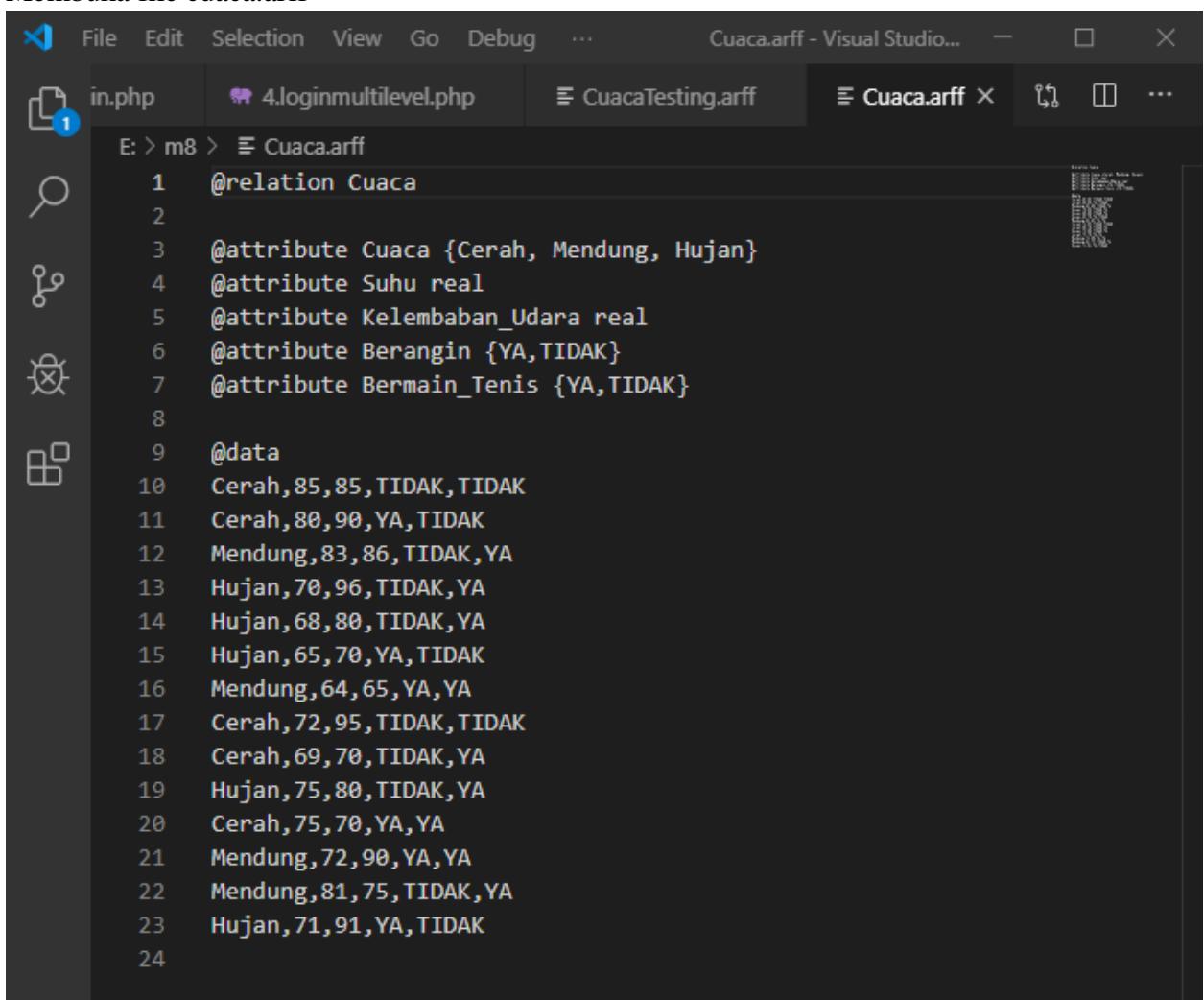
6. Atribut Rerata_SKS

- Maximum = 23
- Minimum = 16
- Mean = 18.95
- StdDev = 1.669

MODUL 8

PERCOBAAN

1. Membuka file cuaca.arff

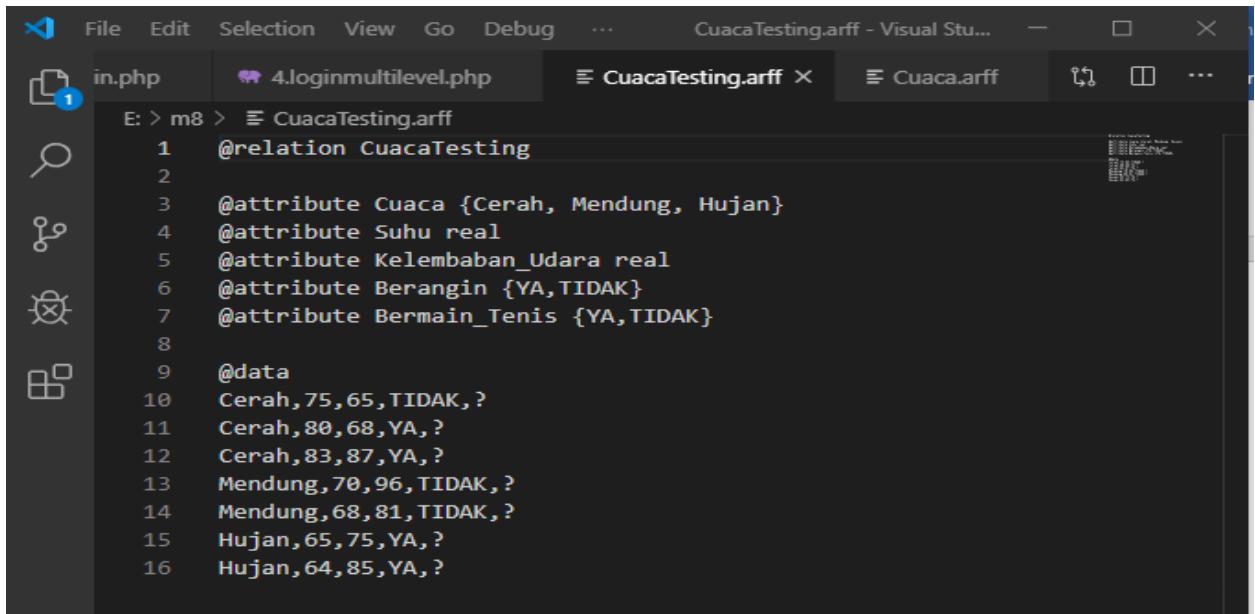


The screenshot shows a dark-themed instance of Visual Studio Code. In the top left, there's a sidebar with icons for file operations like open, save, and search. The top bar has tabs for "File", "Edit", "Selection", "View", "Go", "Debug", and "...". The active tab is "Cuaca.arff - Visual Studio...". To the right of the tabs are standard window control buttons (minimize, maximize, close) and a three-dot ellipsis.

The main editor area displays an ARFF file. The code starts with a header section:

```
E: > m8 > Cuaca.arff
1  @relation Cuaca
2
3  @attribute Cuaca {Cerah, Mendung, Hujan}
4  @attribute Suhu real
5  @attribute Kelembaban_Udara real
6  @attribute Berangin {YA,TIDAK}
7  @attribute Bermain_Tenis {YA,TIDAK}
8
9  @data
10 Cerah,85,85,TIDAK,TIDAK
11 Cerah,80,90,YA,TIDAK
12 Mendung,83,86,TIDAK,YA
13 Hujan,70,96,TIDAK,YA
14 Hujan,68,80,TIDAK,YA
15 Hujan,65,70,YA,TIDAK
16 Mendung,64,65,YA,YA
17 Cerah,72,95,TIDAK,TIDAK
18 Cerah,69,70,TIDAK,YA
19 Hujan,75,80,TIDAK,YA
20 Cerah,75,70,YA,YA
21 Mendung,72,90,YA,YA
22 Mendung,81,75,TIDAK,YA
23 Hujan,71,91,YA,TIDAK
24
```

2. Membuat data uji yang akan diprediksi, disimpan dengan nama CuacaTesting.arff

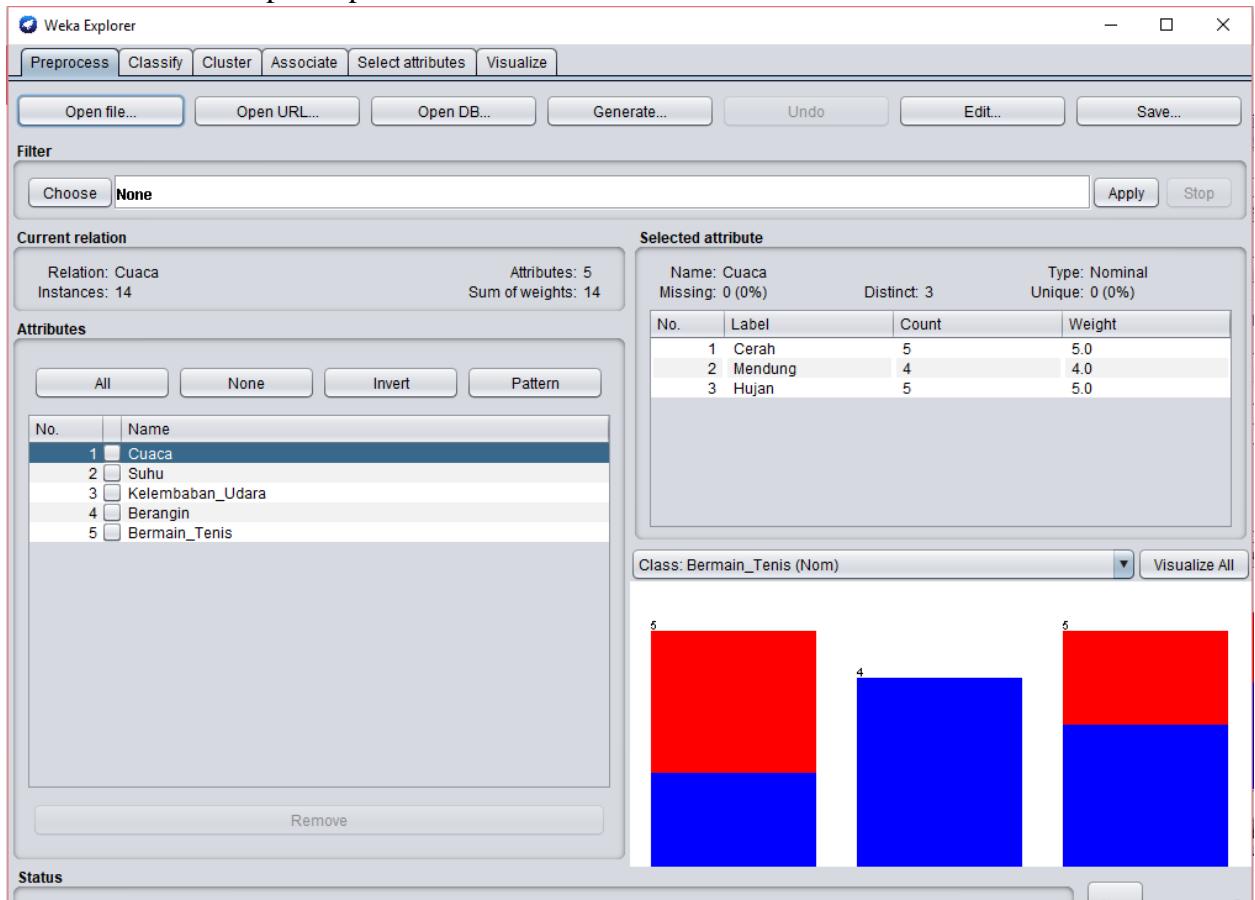


```

File Edit Selection View Go Debug ...
CuacaTesting.arff - Visual Studio Code
in.php 4.loginmultilevel.php CuacaTesting.arff Cuaca.arff ⌂ ⌂ ...
E: > m8 > CuacaTesting.arff
1 @relation CuacaTesting
2
3 @attribute Cuaca {Cerah, Mendung, Hujan}
4 @attribute Suhu real
5 @attribute Kelembaban_Udara real
6 @attribute Berangin {YA,TIDAK}
7 @attribute Bermain_Tenis {YA,TIDAK}
8
9 @data
10 Cerah,75,65,TIDAK,?
11 Cerah,80,68,YA,?
12 Cerah,83,87,YA,?
13 Mendung,70,96,TIDAK,?
14 Mendung,68,81,TIDAK,?
15 Hujan,65,75,YA,?
16 Hujan,64,85,YA,?

```

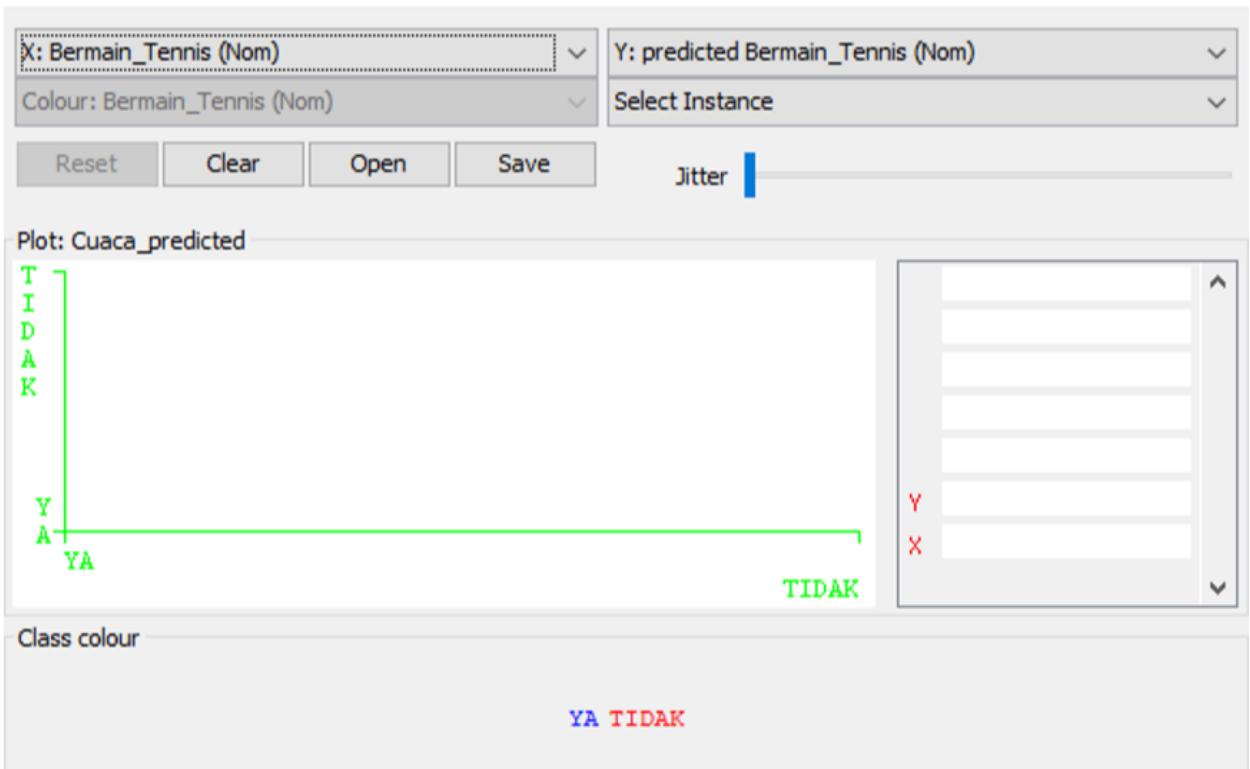
3. Buka file cuaca.arff pada aplikasi weka



4. Hasil prediksi terhadap data uji pada classifier output

```
Classifier output
==== Evaluation on test set ====
Time taken to test model on supplied test set: 0.02 seconds
==== Summary ====
Total Number of Instances 0
Ignored Class Unknown Instances 7
==== Detailed Accuracy By Class ====
      TP Rate  FP Rate  Precision  Recall  F-Measure  MCC
      0.000    0.000    0.000     0.000   0.000    0.000
      0.000    0.000    0.000     0.000   0.000    0.000
Weighted Avg.  NaN      NaN      NaN      NaN      NaN      NaN
==== Confusion Matrix ====
a b    <-- classified as
0 0 | a = YA
0 0 | b = TIDAK
```

5. Simpan hasil prediksi pada jendela Weka Classifier Visualize dengan klik save dan simpan file dengan nama ‘HasilPrediksi.arff’.



- Buka file ‘HasilPrediksi.arff’ pada jendela ARFF-Viewer

ARFF-Viewer - E:\m8\HasilPrediksi.arff

File Edit View

HasilPrediksi.arff *

Relation: CuacaTesting_predicted

No.	1: Cuaca	2: Suhu	3: Kelembaban_Udara	4: Berangin	5: prediction margin	6: predicted Bermain_Tenis	7: Bermain_Tenis
	Nominal	Numeric	Numeric	Nominal	Numeric	Nominal	Nominal
1	Cerah	75.0		65.0 TIDAK	0.762765	YA	
2	Cerah	80.0		68.0 YA	0.087878	YA	
3	Cerah	83.0		87.0 YA	0.676866	TIDAK	
4	Mend...	70.0		96.0 TIDAK	0.628523	YA	
5	Mend...	68.0		81.0 TIDAK	0.833996	YA	
6	Hujan	65.0		75.0 YA	0.253733	YA	
7	Hujan	64.0		85.0 YA	-0.160143	TIDAK	

- Buka aplikasi RapidMiner, kemudian import data training pada file ‘Tabel_Cuaca.xls’

Import Data - Select the cells to import. X

Select the cells to import.

Sheet: Training Cell range: A:E Select All Define header row: 1

	A	B	C	D	E
1	Cuaca	Suhu	Kelembaban_udara	Berangin	Bermain_Tenis
2	Cerah	85.000	85.000	TIDAK	TIDAK
3	Cerah	80.000	90.000	YA	TIDAK
4	Mendung	83.000	86.000	TIDAK	YA
5	Hujan	70.000	96.000	TIDAK	YA
6	Hujan	68.000	80.000	TIDAK	YA
7	Hujan	65.000	70.000	YA	TIDAK
8	Mendung	64.000	65.000	YA	YA
9	Cerah	72.000	95.000	TIDAK	TIDAK
10	Cerah	69.000	70.000	TIDAK	YA
11	Hujan	75.000	80.000	TIDAK	YA
12	Cerah	75.000	70.000	YA	YA
13	Mendung	72.000	90.000	YA	YA
14	Mendung	81.000	75.000	TIDAK	YA
15				YA	TIDAK

← Previous
→ Next
X Cancel

8. Klik next untuk mengubah tipe data pada kolom ‘Bermain_Tenis’ dengan tipe data binomial dan pada change role ubah sebagai label.

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	Cuaca polynomial	Suhu integer	Kelembaban_u... integer	Berangin polynomial	Bermain_Tenis binomial
1	Cerah	85	85	TIDAK	TIDAK
2	Cerah	80	90	YA	TIDAK
3	Mendung	83	86	TIDAK	YA
4	Hujan	70			
5	Hujan	68			
6	Hujan	65			
7	Mendung	64			
8	Cerah	72			
9	Cerah	69			
10	Hujan	75			
11	Cerah	75			
12	Mendung	72	90	YA	YA
13	Mendung	81	75	TIDAK	YA

Change role
 Please enter the new role:

OK

Cancel

no problems.

Previous Next Cancel

9. Kemudian klik next untuk menyimpan dengan nama ‘DataCuaca_Training’ dan klik tombol finish.

<new process> – RapidMiner Studio Educational 9.4.001 @ DESKTOP-9P459LL

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Deployments

Find data, operators...etc All Studio

Repository

- Training Resources (connected)
- Samples
- DB (Legacy)
- Local Repository (USER)
 - Connections (USER)
 - data (USER)
 - processes (USER)
 - DataCuaca_Training (USER - vt, 10/13/19 8:22 PM)
- Community Samples (connected)

ExampleSet (/Local Repository/DataCuaca_Testing) ExampleSet (/Local Repository/DataCuaca_Training)
 ExampleSet (/Local Repository/Testing) ExampleSet (/Local Repository/Training)
 ExampleSet (Apply Model)

Result History ExampleSet (/Local Repository/DataCuaca_Training)

Data Open in Turbo Prep Auto Model

Row No.	Bermain_Te...	Cuaca	Suhu	Kelembaban...	Berangin
1	TIDAK	Cerah	85	85	TIDAK
2	TIDAK	Cerah	80	90	YA
3	YA	Mendung	83	86	TIDAK
4	YA	Hujan	70	96	TIDAK
5	YA	Hujan	68	80	TIDAK
6	TIDAK	Hujan	65	70	YA
7	YA	Mendung	64	65	YA
8	TIDAK	Cerah	72	95	TIDAK
9	YA	Cerah	69	70	TIDAK
10	YA	Hujan	75	80	TIDAK
11	YA	Cerah	75	70	YA
12	YA	Mendung	72	90	YA
13	YA	Mendung	81	75	TIDAK

ExampleSet (14 examples, 1 special attribute, 4 regular attributes)

10. Import data testing ‘Tabel_Cuaca.xls’ pada RapidMiner

Import Data - Select the cells to import. X

Select the cells to import.

Sheet: Testing ▾ Cell range: A:D Select All Define header row: 1 ▾

	A	B	C	D
1	Cuaca	Suhu	Kelembaban_udara	Berangin
2	Cerah	75.000	65.000	TIDAK
3	Cerah	80.000	68.000	YA
4	Cerah	83.000	87.000	YA
5	Mendung	70.000	96.000	TIDAK
6	Mendung	68.000	81.000	TIDAK
7	Hujan	65.000	75.000	YA
8	Hujan	64.000	85.000	YA

← Previous → Next X Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ①

	Cuaca polynomial	Suhu integer	Kelembaban_udara integer	Berangin polynomial
1	Cerah	75	65	TIDAK
2	Cerah	80	68	YA
3	Cerah	83	87	YA
4	Mendung	70	96	TIDAK
5	Mendung	68	81	TIDAK
6	Hujan	65	75	YA
7	Hujan	64	85	YA

✓ no problems.

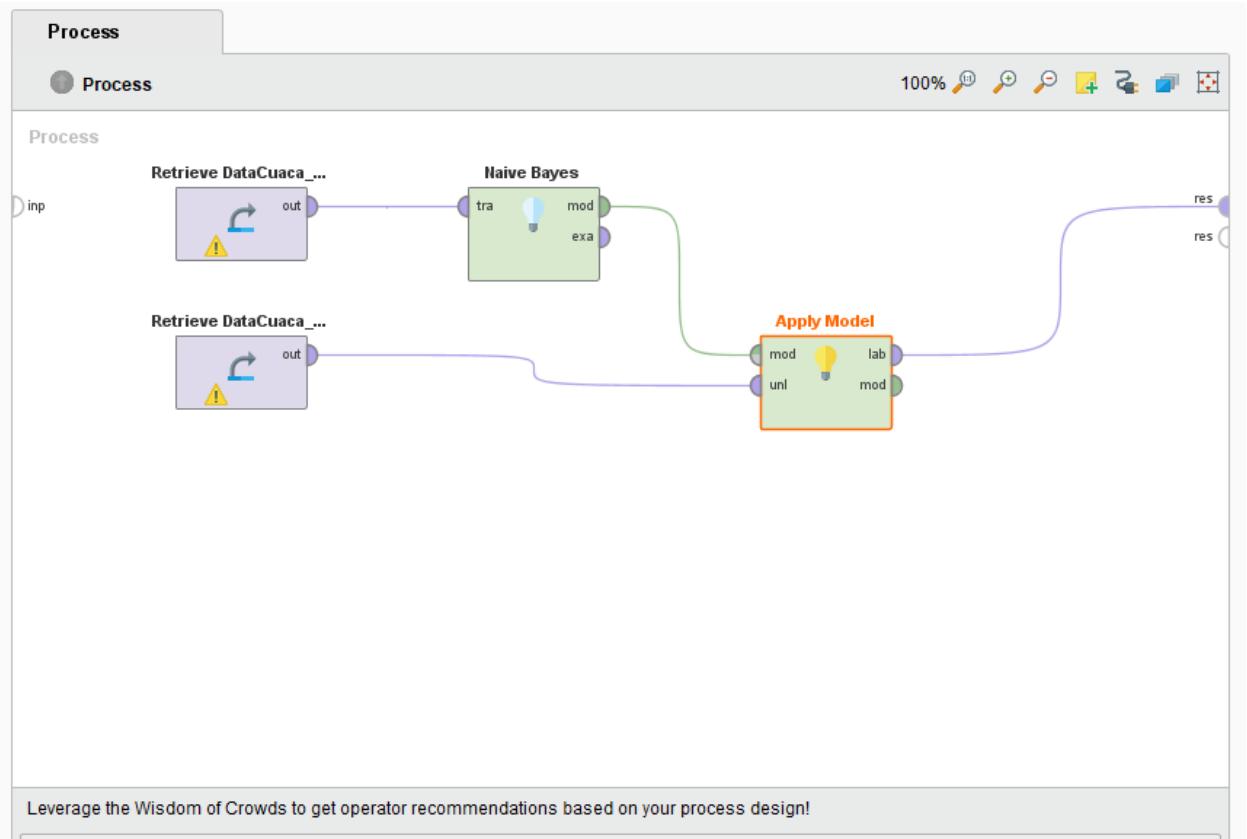
← Previous Next ✖ Cancel

11. Simpan data testing dengan nama ‘DataCuaca_Testing’

The screenshot shows the RapidMiner Studio interface with the following details:

- File Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help.
- Toolbar:** Views, Design, Results, Turbo Prep, Auto Model, Deployments.
- Repository Panel:** Shows Local Repository with Training Resources, Samples, DB (Legacy), Local Repository (USER) containing DataCuaca_Testing and DataCuaca_Training, and Community Samples.
- Data Tab:** Shows the 'DataCuaca_Testing' ExampleSet with 7 examples. The table has columns: Row No., Cuaca, Suhu, Kelembaban..., and Berangin. The data is identical to the one shown in the previous screenshot.
- Status Bar:** ExampleSet (7 examples, 0 special attributes, 4 regular attributes).

12. Drag DataCuaca_Training dan DataCuaca_Testing dalam jendela Process View. Kemudian masukkan operator Naïve Bayes dan Apply Model



13. Jalankan proses dengan menekan tombol F11, hasil prediksi

RapidMiner Studio Educational 9.4.001 @ DESKTOP-9P459LL

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Deployments Find data, operators... etc All Studio

ExampleSet (/Local Repository/DataCuaca_Testing) ExampleSet (/Local Repository/DataCuaca_Training)

ExampleSet (/Local Repository/DataCuaca_Training) ExampleSet (/Local Repository/Testing) ExampleSet (/Local Repository/Training)

Result History ExampleSet (Apply Model) ExampleSet (/Local Repository/DataCuaca_Testing)

Data Statistics Visualizations Annotations

Open in Turbo Prep Auto Model Filter (7 / 7 examples): all

Row No.	prediction(B...)	confidence(...)	confidence(...)	Cuaca	Suhu	Kelembaban...	Berangin
1	YA	0.154	0.846	Cerah	75	65	TIDAK
2	YA	0.498	0.502	Cerah	80	68	YA
3	TIDAK	0.856	0.144	Cerah	83	87	YA
4	YA	0.019	0.981	Mendung	70	96	TIDAK
5	YA	0.007	0.993	Mendung	68	81	TIDAK
6	YA	0.371	0.629	Hujan	65	75	YA
7	TIDAK	0.568	0.432	Hujan	64	85	YA

ExampleSet (7 examples, 3 special attributes, 4 regular attributes)

RapidMiner Studio Educational 9.4.001 @ DESKTOP-9P459LL

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Deployments Find data, operators... etc All Studio

ExampleSet (/Local Repository/DataCuaca_Testing) ExampleSet (/Local Repository/DataCuaca_Training)

ExampleSet (/Local Repository/DataCuaca_Training) ExampleSet (/Local Repository/Testing) ExampleSet (/Local Repository/Training)

Result History ExampleSet (Apply Model) ExampleSet (/Local Repository/DataCuaca_Testing)

Data Statistics Visualizations Annotations

Name Type Missing Statistics Filter (7 / 7 attributes): Search for Attributes

Prediction	Binominal	0	Least TIDAK (2)	Most YA (5)	Values YA (5), TIDAK (2)
confidence_(TIDAK)	Real	0	Min 0.007	Max 0.856	Average 0.353
confidence_YA	Real	0	Min 0.144	Max 0.993	Average 0.647
Cuaca	Polynomial	0	Least Mendung (2)	Most Cerah (3)	Values Cerah (3), Hujan (2), ...
Suhu	Integer	0	Min 64	Max 83	Average 72.143
Kelembaban_udara	Integer	0	Min 65	Max 96	Average 79.571
Berangin	Polynomial	0	Least TIDAK (3)	Most YA (4)	Values YA (4), TIDAK (3)

Showing attributes 1 - 7 Examples: 7 Special Attributes: 3 Regular Attributes: 4

TUGAS

1.

```

E: > TUGAS > SEMESTER 5 > PRAKTIKUM DWDM > Modul_7 > Modul ke-7
1 @relation Sekolah
2
3 @attribute Jurusan_SMA{IPS,IPA,LAIN}
4 @attribute Gender{WANITA,PRIA}
5 @attribute Asal_Sekolah{SURAKARTA,LUAR}
6 @attribute Rerata_SKS real
7 @attribute Asisten{TIDAK,YA}
8 @attribute Lama_Studi{TERLAMBAT,TEPAT}
9
10 @data
11 IPS,WANITA,SURAKARTA,18,TIDAK,TERLAMBAT
12 IPA,PRIA,SURAKARTA,19,YA,TEPAT
13 LAIN,PRIA,SURAKARTA,19,TIDAK,TERLAMBAT
14 IPA,PRIA,LUAR,17,TIDAK,TERLAMBAT
15 IPA,WANITA,SURAKARTA,17,TIDAK,TEPAT
16 IPA,WANITA,LUAR,18,YA,TEPAT
17 IPA,PRIA,SURAKARTA,18,TIDAK,TERLAMBAT
18 IPA,PRIA,SURAKARTA,19,TIDAK,TEPAT
19 IPS,PRIA,LUAR,18,TIDAK,TERLAMBAT
20 LAIN,WANITA,SURAKARTA,18,TIDAK,TEPAT
21 IPA,WANITA,SURAKARTA,19,TIDAK,TEPAT
22 IPS,PRIA,SURAKARTA,20,TIDAK,TEPAT
23 IPS,PRIA,SURAKARTA,19,TIDAK,TEPAT
24 IPA,PRIA,SURAKARTA,19,TIDAK,TEPAT
25 IPA,PRIA,LUAR,22,YA,TEPAT
26 LAIN,PRIA,SURAKARTA,16,TIDAK,TERLAMBAT
27 IPS,PRIA,LUAR,20,TIDAK,TEPAT
28 LAIN,PRIA,LUAR,23,YA,TEPAT
29 IPA,PRIA,SURAKARTA,21,YA,TEPAT
30 IPS,PRIA,SURAKARTA,19,TIDAK,TERLAMBAT
21

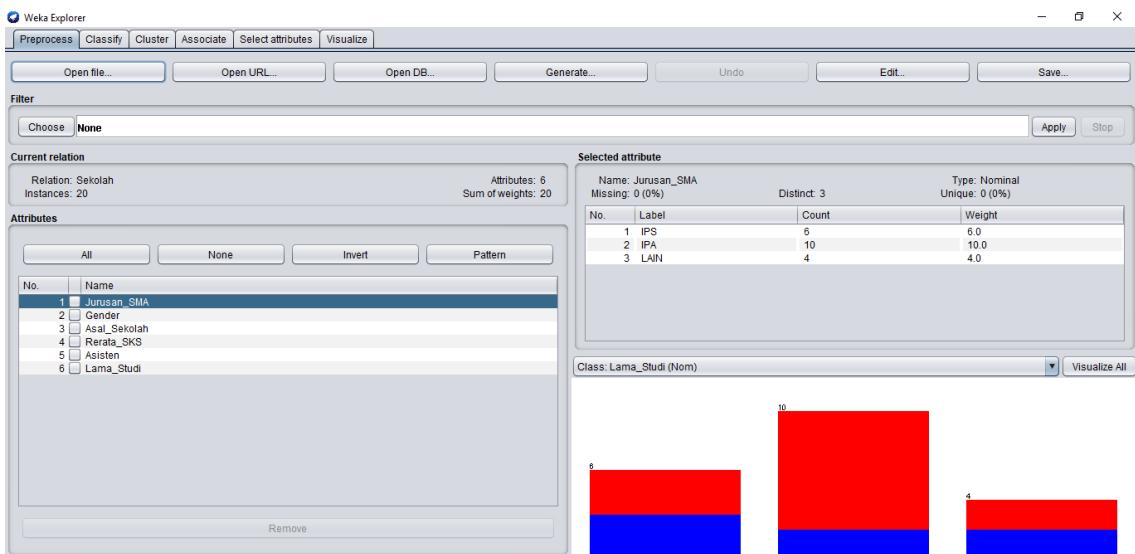
```

```

E: > m8 > SekolahTesting.arff
1 @relation SekolahTesting
2
3 @attribute Jurusan_SMA{IPS,IPA,LAIN}
4 @attribute Gender{WANITA,PRIA}
5 @attribute Asal_Sekolah{SURAKARTA,LUAR}
6 @attribute Rerata_SKS real
7 @attribute Asisten{TIDAK,YA}
8 @attribute Lama_Studi{TERLAMBAT,TEPAT}
9
10 @data
11 LAIN,WANITA,SURAKARTA,18,TIDAK,?
12 IPA,PRIA,SURAKARTA,19,YA,?
13 LAIN,PRIA,SURAKARTA,19,TIDAK,?
14 IPS,PRIA,LUAR,17,TIDAK,?
15 LAIN,WANITA,SURAKARTA,17,TIDAK,?
16 IPA,WANITA,LUAR,18,YA,?
17 IPA,PRIA,SURAKARTA,18,TIDAK,?
18 IPA,PRIA,SURAKARTA,19,TIDAK,?
19 IPS,PRIA,LUAR,18,TIDAK,?
20 LAIN,WANITA,SURAKARTA,18,TIDAK,?
21

```

2. Buka file sekolah.arff di weka



3. Classifier output

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose NaiveBayes

Test options

- Use training set
- Supplied test set
- Cross-validation Folds 10
- Percentage split % 66

(Nom) Lama_Studi

Result list (right-click for options)

21:40:51 - bayes.NaiveBayes

Classifier output

```

Asisten
Lama_Studi
Test mode: user supplied test set: size unknown (reading incrementally)

== Classifier model (full training set) ==

Naive Bayes Classifier

          Class
Attribute    TERLAMBAT     TEPAT
              (0.36)      (0.64)
=====
Jurusan_SMA
IPS           4.0          4.0
IPA           3.0          9.0
LAIN          3.0          3.0
[total]        10.0         16.0

Gender
WANITA        2.0          5.0
PRIA          7.0          10.0
[total]        9.0          15.0

Asal_Sekolah
SURAKARTA    6.0          10.0
LUAR          3.0          5.0
[total]        9.0          15.0

Rerata_SKS

```

4. ARFF-View

ARFF-Viewer - E:\m8\Prediksi.arff

File Edit View

Prediksi.arff

Relation: SekolahTesting_predicted

No.	1: Jurusan_SMA	2: Gender	3: Asal_Sekolah	4: Rerata_SKS	5: Asisten	6: prediction margin	7: predicted Lama_Studi	8: Lama_Studi
	Nominal	Nominal	Nominal	Numeric	Nominal	Numeric	Nominal	Nominal
1	LAIN	WANITA	SURAKARTA	18.0	TIDAK	0.375862	TERLAMBAT	
2	IPA	PRIA	SURAKARTA	19.0	YA	-0.836469	TEPAT	
3	LAIN	PRIA	SURAKARTA	19.0	TIDAK	0.175169	TERLAMBAT	
4	IPS	PRIA	LUAR	17.0	TIDAK	0.713206	TERLAMBAT	
5	LAIN	WANITA	SURAKARTA	17.0	TIDAK	0.546846	TERLAMBAT	
6	IPA	WANITA	LUAR	18.0	YA	-0.757815	TEPAT	
7	IPA	PRIA	SURAKARTA	18.0	TIDAK	0.125076	TERLAMBAT	
8	IPA	PRIA	SURAKARTA	19.0	TIDAK	-0.356012	TEPAT	
9	IPS	PRIA	LUAR	18.0	TIDAK	0.588286	TERLAMBAT	
10	LAIN	WANITA	SURAKARTA	18.0	TIDAK	0.375862	TERLAMBAT	

5. Import data training file ‘sekolah.xls’

Import Data - Select the cells to import.

X

Select the cells to import.

Sheet: Training ▾ Cell range: A:F Select All Define header row: 1 ▾

	A	B	C	D	E	F
1	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten	Lama_Studi
2	IPS	WANITA	SURAKARTA	18.000	TIDAK	TERLAMBAT
3	IPA	PRIA	SURAKARTA	19.000	YA	TEPAT
4	LAIN	PRIA	SURAKARTA	19.000	TIDAK	TERLAMBAT
5	IPA	PRIA	LUAR	17.000	TIDAK	TERLAMBAT
6	IPA	WANITA	SURAKARTA	17.000	TIDAK	TEPAT
7	IPA	WANITA	LUAR	18.000	YA	TEPAT
8	IPA	PRIA	SURAKARTA	18.000	TIDAK	TERLAMBAT
9	IPA	PRIA	SURAKARTA	19.000	TIDAK	TEPAT
10	IPS	PRIA	LUAR	18.000	TIDAK	TERLAMBAT
11	LAIN	WANITA	SURAKARTA	18.000	TIDAK	TEPAT
12	IPA	WANITA	SURAKARTA	19.000	TIDAK	TEPAT
13	IPS	PRIA	SURAKARTA	20.000	TIDAK	TEPAT
14	IPS	PRIA	SURAKARTA	19.000	TIDAK	TEPAT
15	IPS	PRIA	SURAKARTA	18.000	TIDAK	TEPAT

← Previous → Next X Cancel

6. Hasil disimpan dengan nama ‘Sekolah_Training’

Open in [Turbo Prep](#) [Auto Model](#) Filter (20 / 20 examples): all ▾

Row No.	Lama_Studi	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
1	TERLAMBAT	IPS	WANITA	SURAKARTA	18	TIDAK
2	TEPAT	IPA	PRIA	SURAKARTA	19	YA
3	TERLAMBAT	LAIN	PRIA	SURAKARTA	19	TIDAK
4	TERLAMBAT	IPA	PRIA	LUAR	17	TIDAK
5	TEPAT	IPA	WANITA	SURAKARTA	17	TIDAK
6	TEPAT	IPA	WANITA	LUAR	18	YA
7	TERLAMBAT	IPA	PRIA	SURAKARTA	18	TIDAK
8	TEPAT	IPA	PRIA	SURAKARTA	19	TIDAK
9	TERLAMBAT	IPS	PRIA	LUAR	18	TIDAK
10	TEPAT	LAIN	WANITA	SURAKARTA	18	TIDAK
11	TEPAT	IPA	WANITA	SURAKARTA	19	TIDAK
12	TEPAT	IPS	PRIA	SURAKARTA	20	TIDAK

ExampleSet (20 examples, 1 special attribute, 5 regular attributes)

7. Import data testing file ‘sekolah.xls’

Import Data - Select the cells to import. X

Select the cells to import.

Sheet: Testing ▾ Cell range: A:E Select All Define header row: 1 ▾

	A	B	C	D	E
1	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
2	LAIN	WANITA	SURAKARTA	18.000	TIDAK
3	IPA	PRIA	SURAKARTA	19.000	YA
4	LAIN	PRIA	SURAKARTA	19.000	TIDAK
5	IPS	PRIA	LUAR	17.000	TIDAK
6	LAIN	WANITA	SURAKARTA	17.000	TIDAK
7	IPA	WANITA	LUAR	18.000	YA
8	IPA	PRIA	SURAKARTA	18.000	TIDAK
9	IPA	PRIA	SURAKARTA	19.000	TIDAK
10	IPS	PRIA	LUAR	18.000	TIDAK
11	LAIN	WANITA	SURAKARTA	18.000	TIDAK

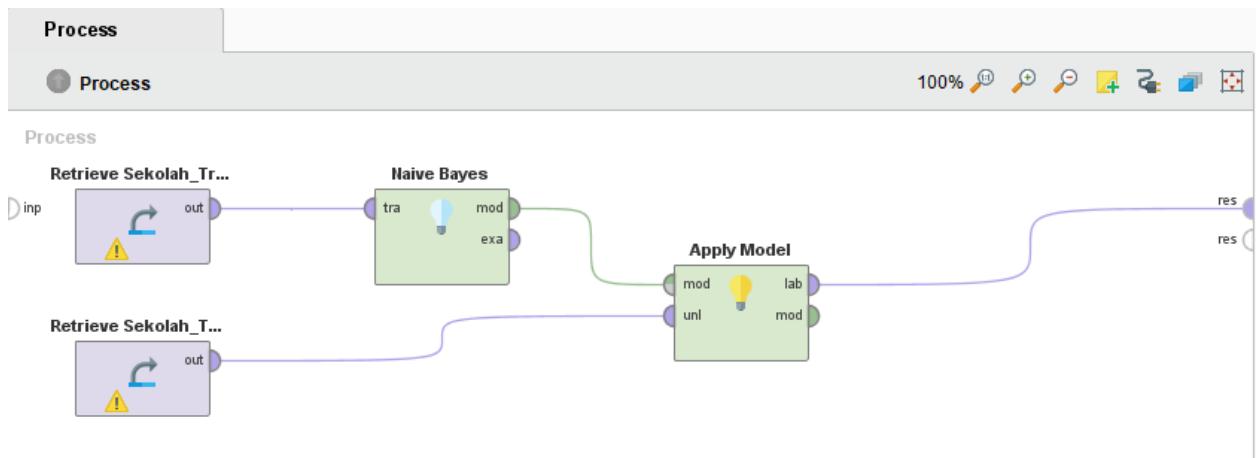
← Previous
→ Next
X Cancel

8. Hasil disimpan dengan nama ‘Sekolah_Testing’

Open in Turbo Prep Auto Model

Row No.	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
1	LAIN	WANITA	SURAKARTA	18	TIDAK
2	IPA	PRIA	SURAKARTA	19	YA
3	LAIN	PRIA	SURAKARTA	19	TIDAK
4	IPS	PRIA	LUAR	17	TIDAK
5	LAIN	WANITA	SURAKARTA	17	TIDAK
6	IPA	WANITA	LUAR	18	YA
7	IPA	PRIA	SURAKARTA	18	TIDAK
8	IPA	PRIA	SURAKARTA	19	TIDAK
9	IPS	PRIA	LUAR	18	TIDAK
10	LAIN	WANITA	SURAKARTA	18	TIDAK

9. Drag file ‘sekolah_training’, ‘sekolah_testing’, ‘naïve bayes’, dan ‘apply model’ ke jendela process view kemudian run



10. Hasil prediksi

Open in [Turbo Prep](#) [Auto Model](#)

Filter (10 / 10 examples): all

Row No.	prediction(Lama_Studi)	confidence(TEPAT)	confidence(TERLAMBAT)	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
1	TERLAMBAT	0.648	0.352	LAIN	WANITA	SURAKARTA	18	TIDAK
2	TEPAT	0.005	0.995	IPA	PRIA	SURAKARTA	19	YA
3	TERLAMBAT	0.650	0.350	LAIN	PRIA	SURAKARTA	19	TIDAK
4	TERLAMBAT	0.868	0.132	IPS	PRIA	LUAR	17	TIDAK
5	TERLAMBAT	0.738	0.262	LAIN	WANITA	SURAKARTA	17	TIDAK
6	TEPAT	0.005	0.995	IPA	WANITA	LUAR	18	YA
7	TERLAMBAT	0.547	0.453	IPA	PRIA	SURAKARTA	18	TIDAK
8	TEPAT	0.321	0.679	IPA	PRIA	SURAKARTA	19	TIDAK
9	TERLAMBAT	0.811	0.189	IPS	PRIA	LUAR	18	TIDAK
10	TERLAMBAT	0.648	0.352	LAIN	WANITA	SURAKARTA	18	TIDAK

Filter (8 / 8 attributes):

Name	Type	Missing	Statistics	Values
Prediction prediction(Lama_Studi)	Binominal	0	Least TEPAT (3) Most TERLAMBAT (7)	TERLAMBAT (7), TEPAT (3)
Confidence_TERLAMBAT confidence(TERLAMBAT)	Real	0	Min 0.005 Max 0.868 Average 0.524	
Confidence_TEPAT confidence(TEPAT)	Real	0	Min 0.132 Max 0.995 Average 0.476	
Jurusan_SMA	Polynominal	0	Least IPS (2) Most IPA (4)	IPA (4), LAIN (4), [1 more]
Gender	Polynominal	0	Least WANITA (4) Most PRIA (6)	PRIA (6), WANITA (4)
Asal_Sekolah	Polynominal	0	Least LUAR (3) Most SURAKARTA (7)	SURAKARTA (7), LUAR (3)

Showing attributes 1 - 8

Examples: 10 Special Attributes: 3 Regular Attributes: 5

Nilai rerata confidence untuk atribut Lama_Studi dengan nilai TEPAT = 0.476

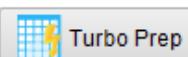
Nilai rerata confidence untuk atribut Lama_Studi dengan nilai TERLAMBAT = 0.524

Lulus TEPAT = 3

Lulus TERLAMBAT = 7

11. Menambahkan 2 kondisi baru pada testing

Open in



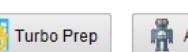
Turbo Prep



Auto Model

Row No.	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
2	IPA	PRIA	SURAKARTA	19	YA
3	LAIN	PRIA	SURAKARTA	19	TIDAK
4	IPS	PRIA	LUAR	17	TIDAK
5	LAIN	WANITA	SURAKARTA	17	TIDAK
6	IPA	WANITA	LUAR	18	YA
7	IPA	PRIA	SURAKARTA	18	TIDAK
8	IPA	PRIA	SURAKARTA	19	TIDAK
9	IPS	PRIA	LUAR	18	TIDAK
10	LAIN	WANITA	SURAKARTA	18	TIDAK
11	IPA	WANITA	LUAR	18	TIDAK
12	LAIN	PRIA	SURAKARTA	17	YA

Open in



Turbo Prep



Auto Model

Filter (12 / 12 examples):

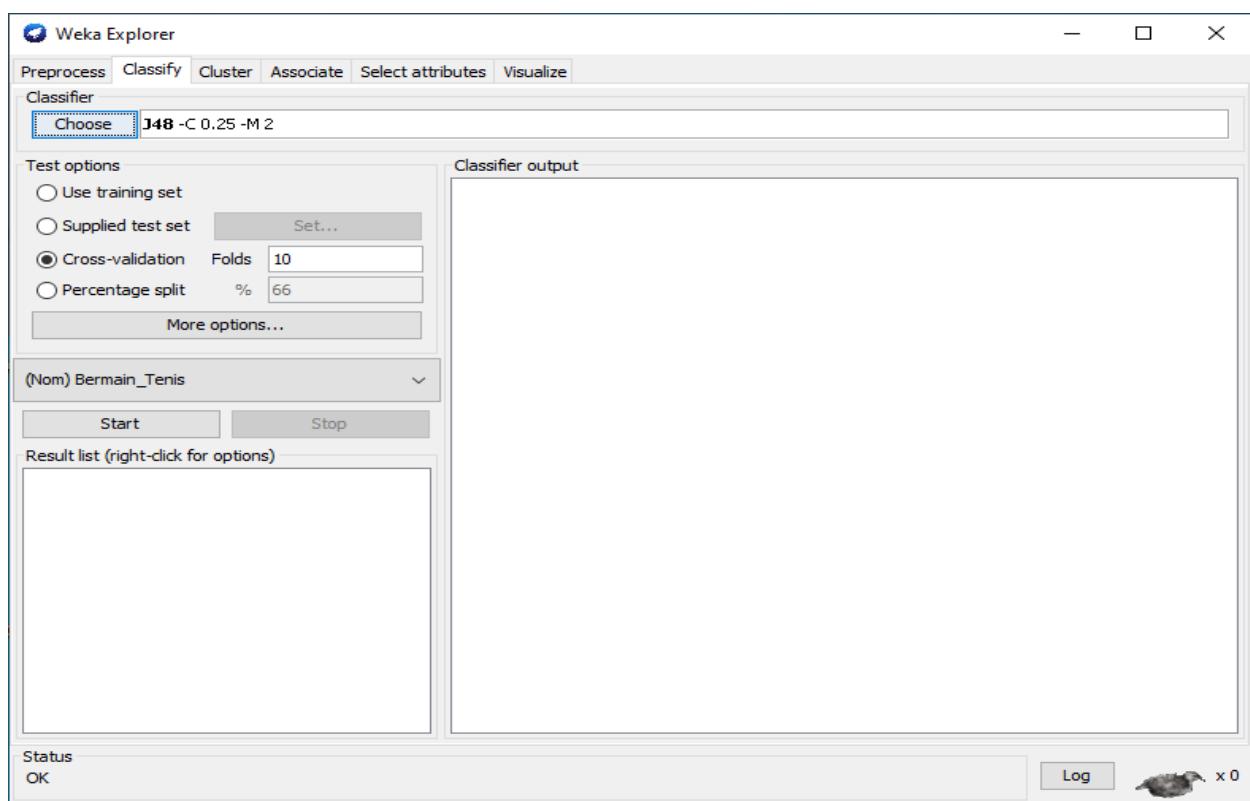
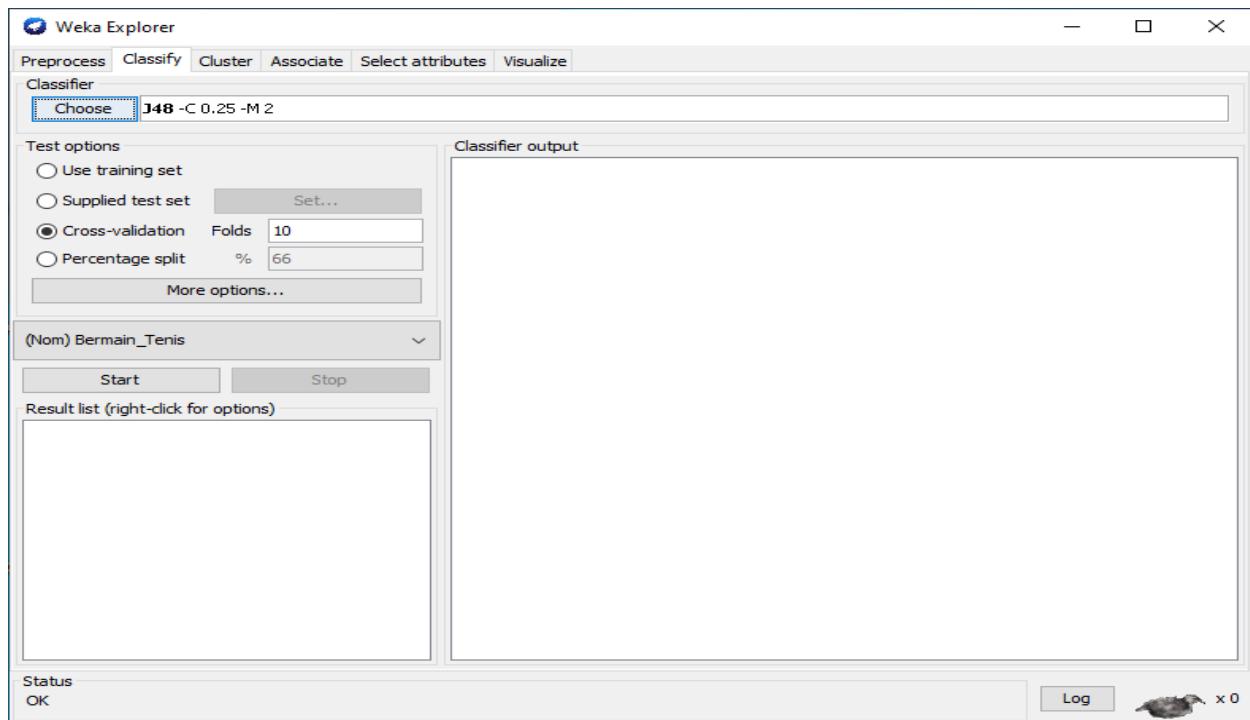
Row No.	prediction(L...	confidence(...	confidence(...	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
2	TEPAT	0.005	0.995	IPA	PRIA	SURAKARTA	19	YA
3	TERLAMBAT	0.650	0.350	LAIN	PRIA	SURAKARTA	19	TIDAK
4	TERLAMBAT	0.868	0.132	IPS	PRIA	LUAR	17	TIDAK
5	TERLAMBAT	0.738	0.262	LAIN	WANITA	SURAKARTA	17	TIDAK
6	TEPAT	0.005	0.995	IPA	WANITA	LUAR	18	YA
7	TERLAMBAT	0.547	0.453	IPA	PRIA	SURAKARTA	18	TIDAK
8	TEPAT	0.321	0.679	IPA	PRIA	SURAKARTA	19	TIDAK
9	TERLAMBAT	0.811	0.189	IPS	PRIA	LUAR	18	TIDAK
10	TERLAMBAT	0.648	0.352	LAIN	WANITA	SURAKARTA	18	TIDAK
11	TEPAT	0.298	0.702	IPA	WANITA	LUAR	18	TIDAK
12	TEPAT	0.076	0.924	LAIN	PRIA	SURAKARTA	17	YA

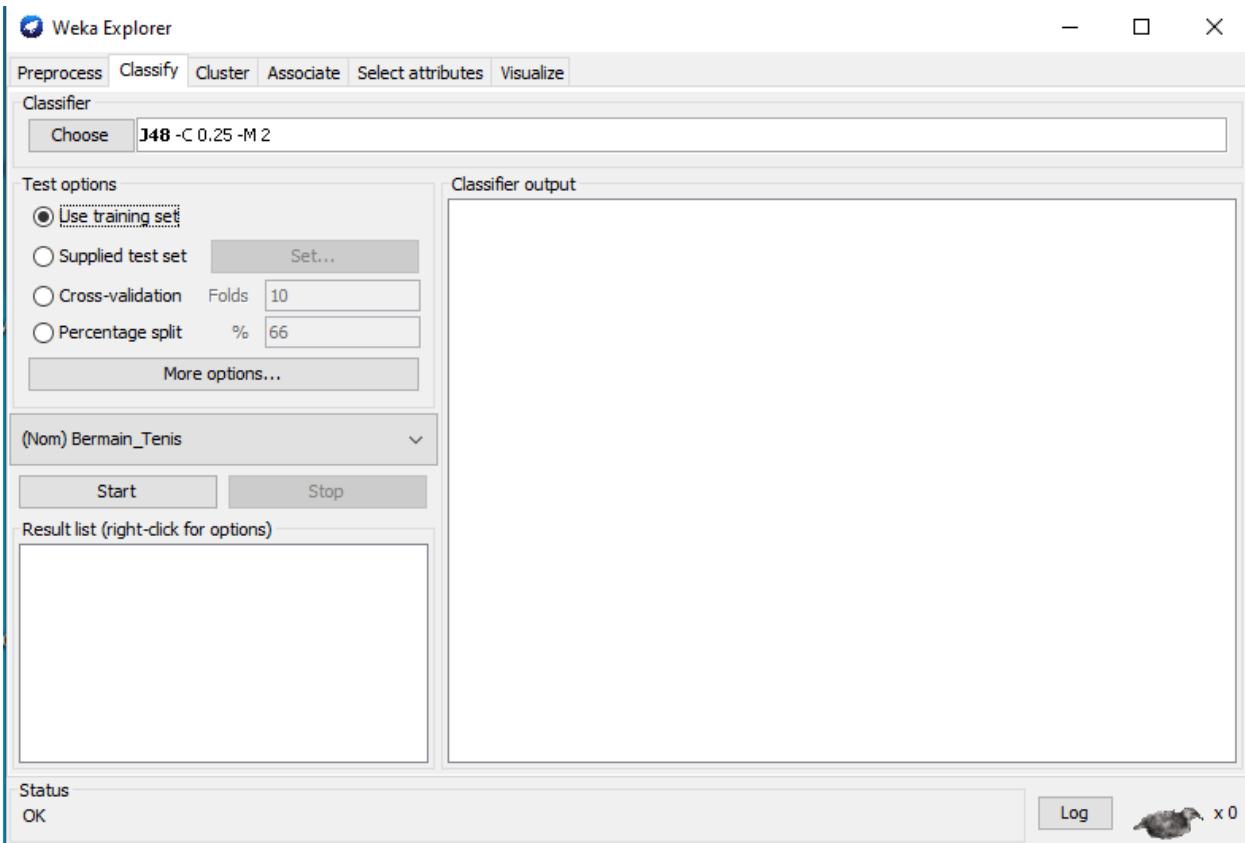
Hasil dari ketepatan lama_studi dewi = TEPAT

Hasil dari ketepatan lama_studi Jono = TEPAT

MODUL 9

PERCOBAAN





```
Classifier output
-----
Cuaca = Cerah
| Kelembaban_Udara <= 75: YA (2.0)
| Kelembaban_Udara > 75: TIDAK (3.0)
Cuaca = Mendung: YA (4.0)
Cuaca = Hujan
| Berangin = YA: TIDAK (2.0)
| Berangin = TIDAK: YA (3.0)

Number of Leaves : 5

Size of the tree : 8

Time taken to build model: 0.08 seconds

==== Evaluation on training set ===

Time taken to test model on training data: 0.02 seconds

==== Summary ===

Correctly Classified Instances      14          100      %
Incorrectly Classified Instances    0           0      %
Kappa statistic                   1
Mean absolute error               0
Root mean squared error          0
Relative absolute error          0
Root relative squared error     0
Coverage of cases (0.95 level)   100      %
Mean rel. region size (0.95 level) 50      %
Total Number of Instances        14
```

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

Choose J48 -C 0.25 -M 2

Test options

(Use training set)

(Supplied test set)

(Cross-validation) Folds: 10

(Percentage split) %: 66

More options...

(Nom) Bermain_Tenis

Start Stop

Result list (right-click for options)

14:25:44 - trees.J48

Classifier output

time taken to build model: 0.08 seconds

==== Evaluation on training set ===

Time taken to test model on training data: 0.02 seconds

==== Summary ===

	14	100	%
Correctly Classified Instances	14	100	%
Incorrectly Classified Instances	0	0	%
Kappa Statistic	1		
Mean absolute error	0		
Root mean squared error	0		
Relative absolute error	0		
Root relative squared error	0		
Coverage of cases (0.95 level)	100		
Mean rel. region size (0.95 level)	50		
Total Number of Instances	14		

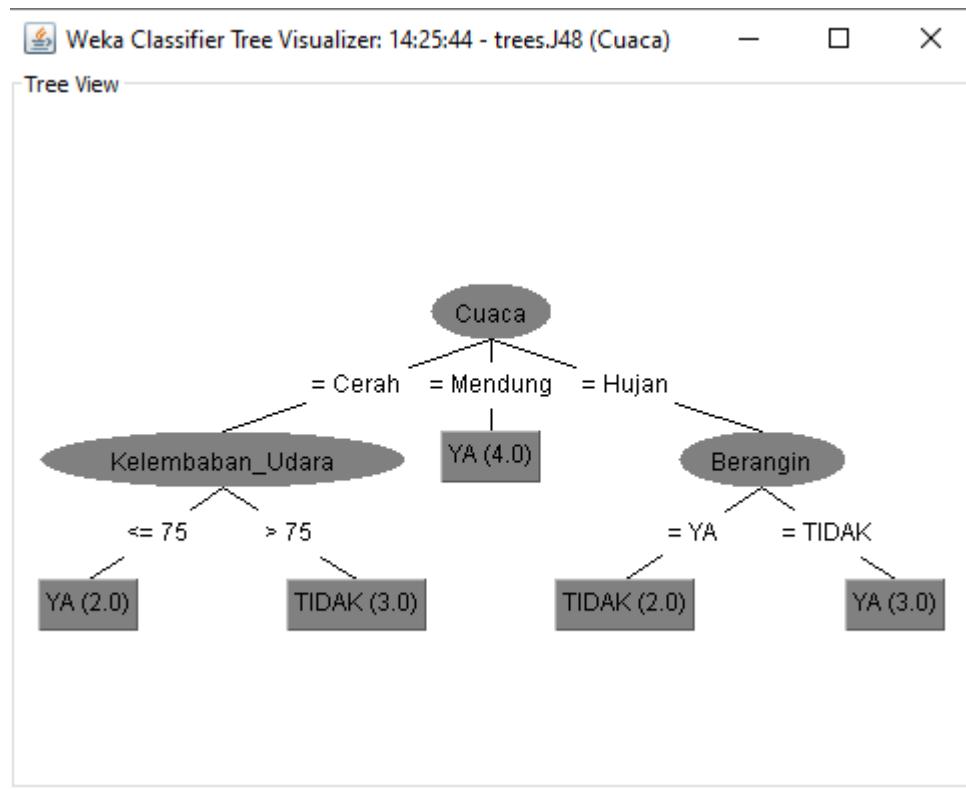
==== Detailed Accuracy By Class ===

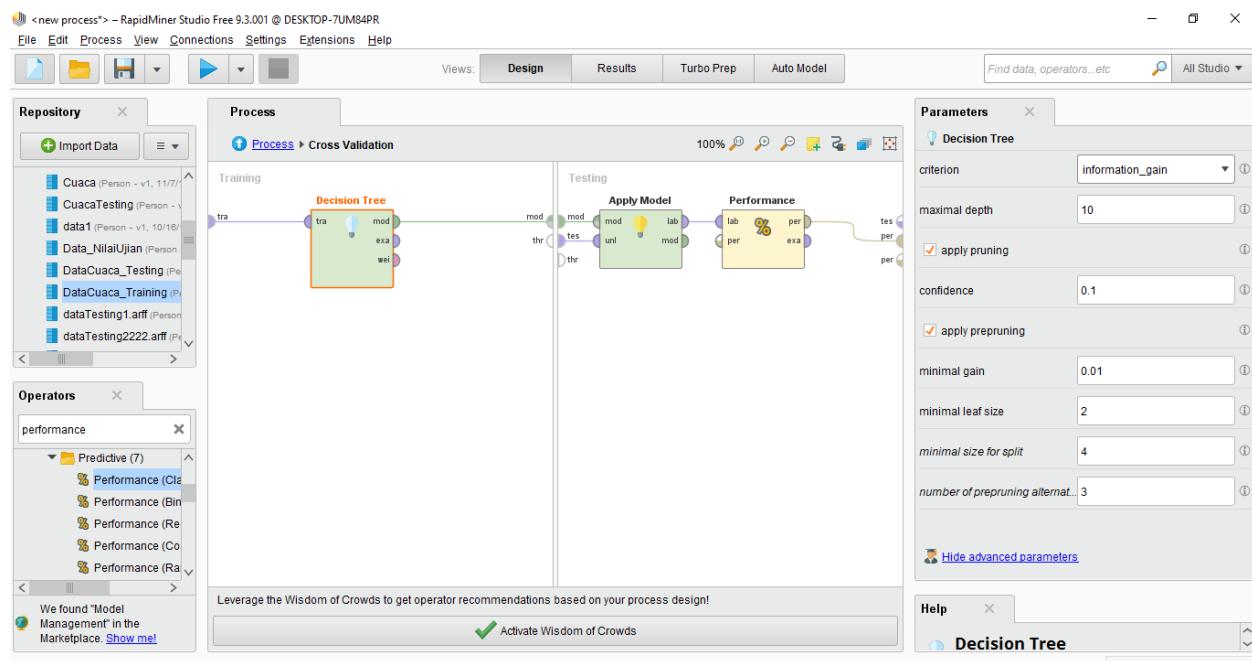
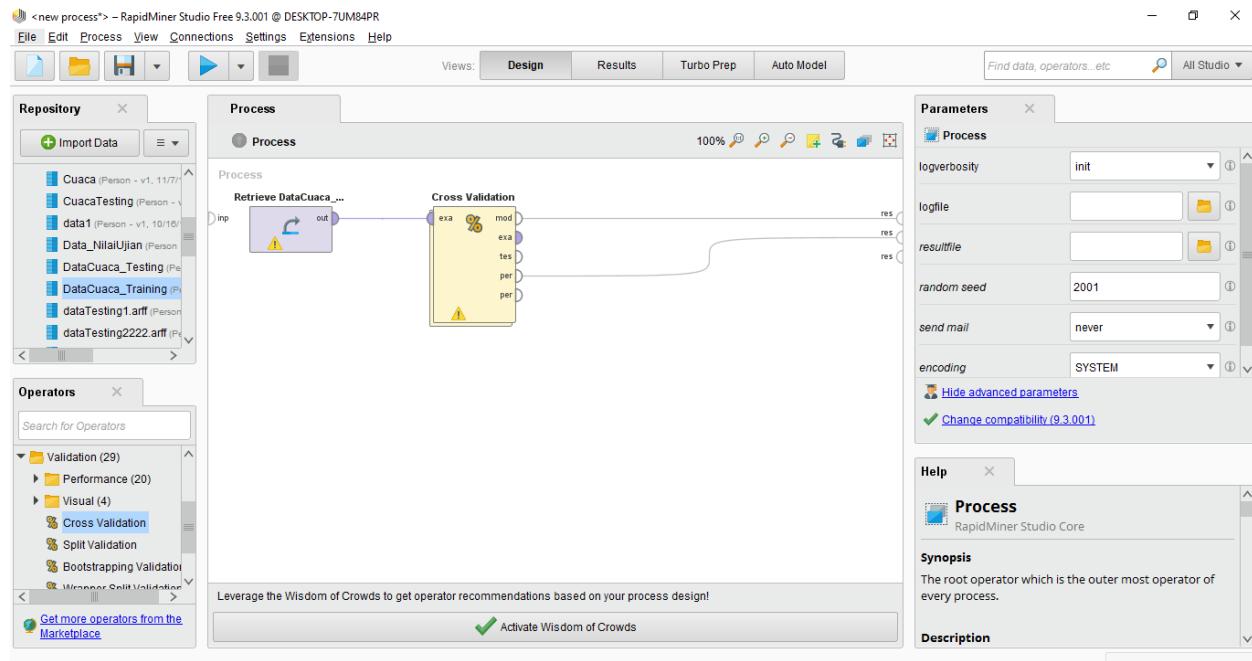
	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	YA
1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	TIDAK
Weighted Avg.	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	

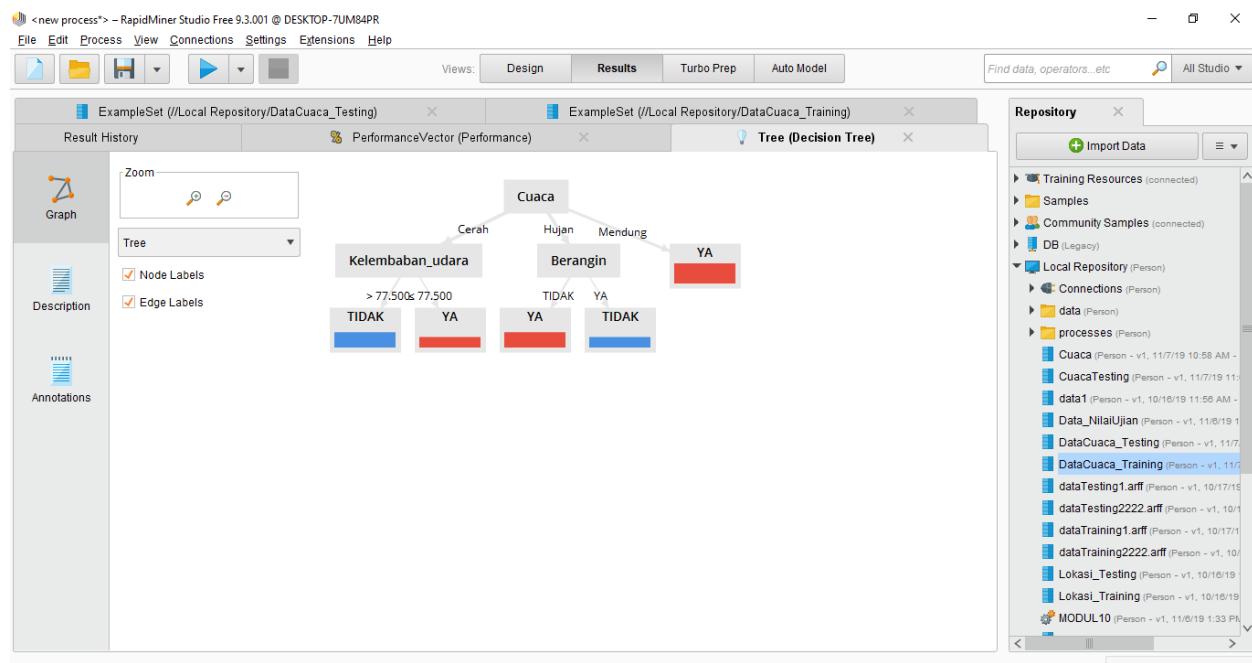
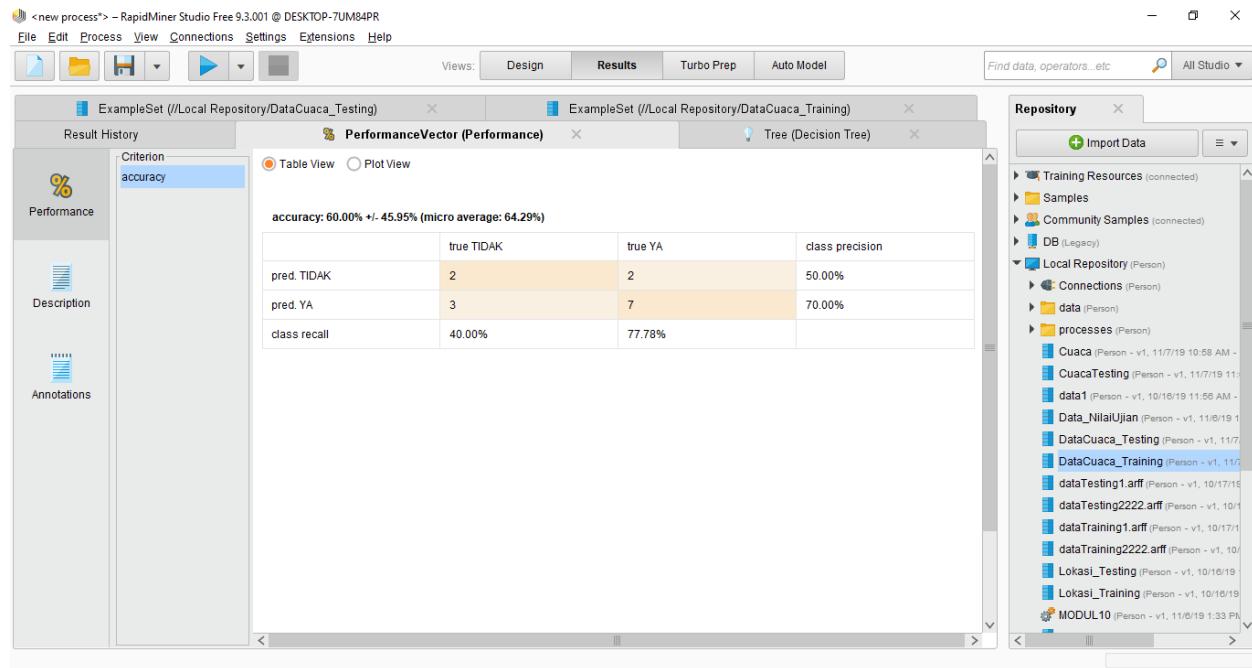
==== Confusion Matrix ===

```

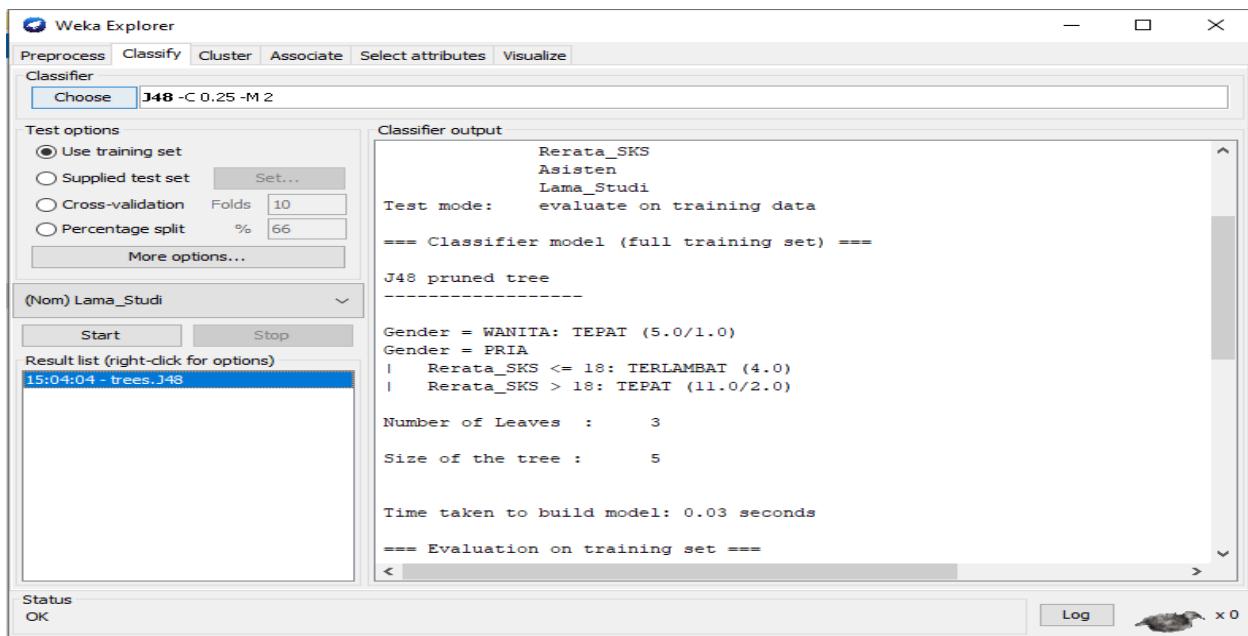
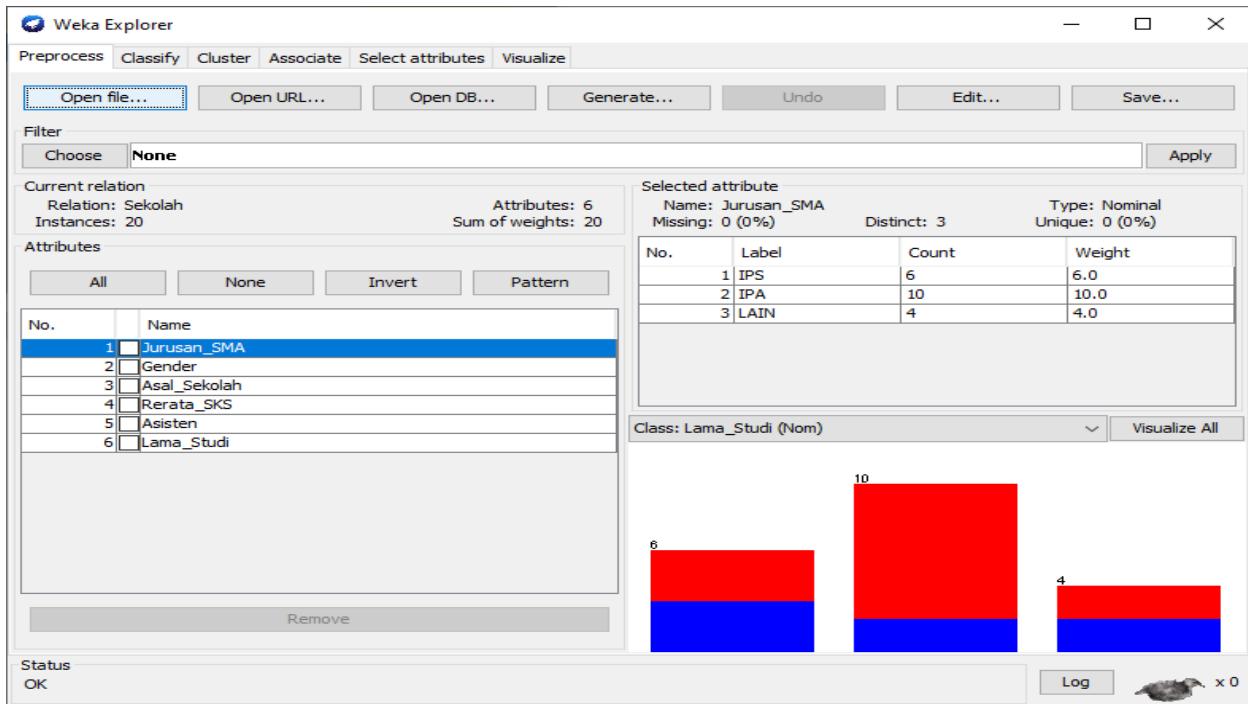
a b  <-- classified as
9 0 | a = YA
0 5 | b = TIDAK
  
```







TUGAS



Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Classifier

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

Test options

Use training set

Supplied test set Set...

Cross-validation Folds 10

Percentage split % 66

More options...

(Nom) Lama_Studi

Start Stop

Result list (right-click for options)

15:04:04 - trees.J48

Classifier output

	17	85	%
Correctly Classified Instances	17	85	%
Incorrectly Classified Instances	3	15	%
Kappa statistic	0.6341		
Mean absolute error	0.2436		
Root mean squared error	0.349		
Relative absolute error	53.0693 %		
Root relative squared error	73.1456 %		
Coverage of cases (0.95 level)	100 %		
Mean rel. region size (0.95 level)	90 %		
Total Number of Instances	20		

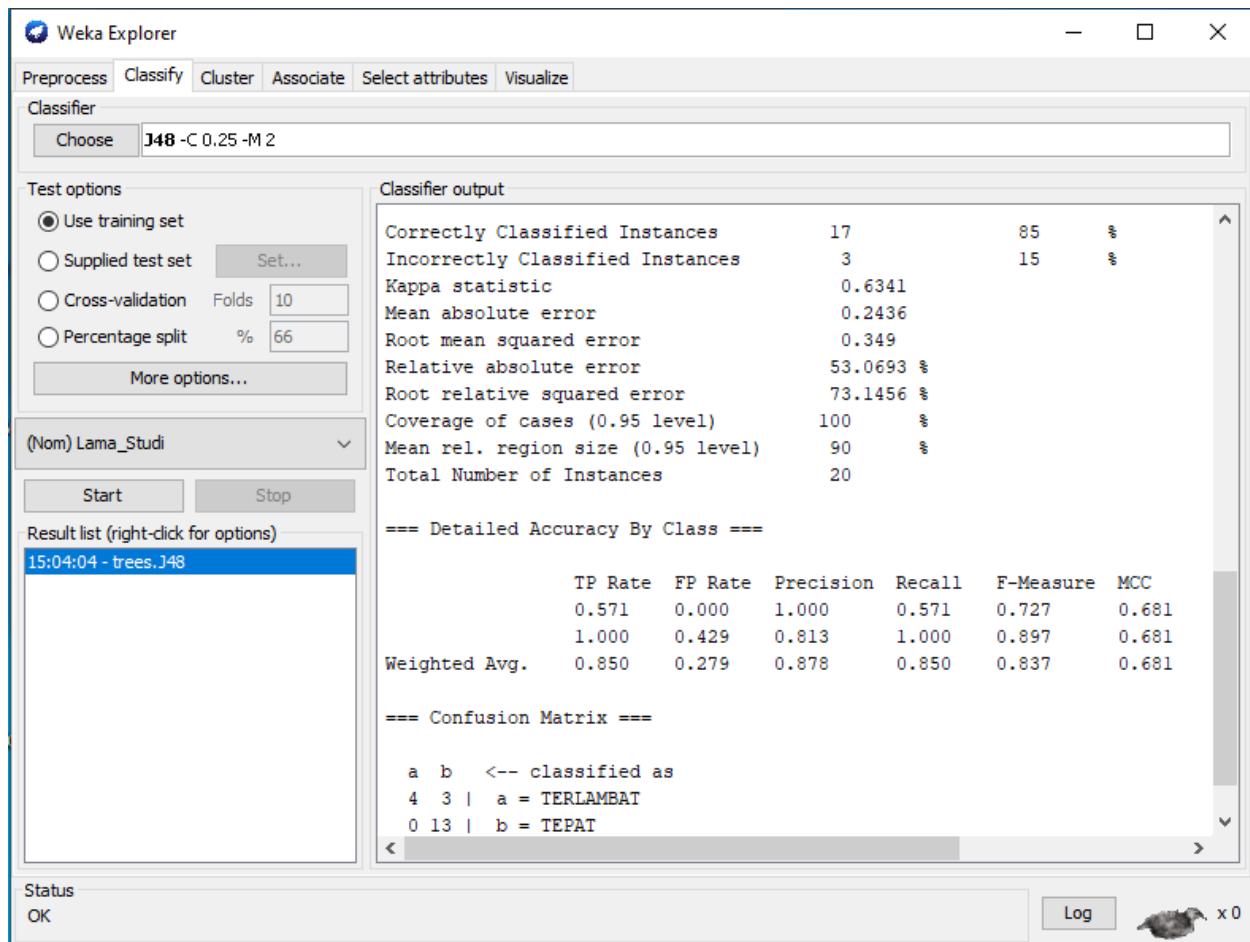
==== Detailed Accuracy By Class ===

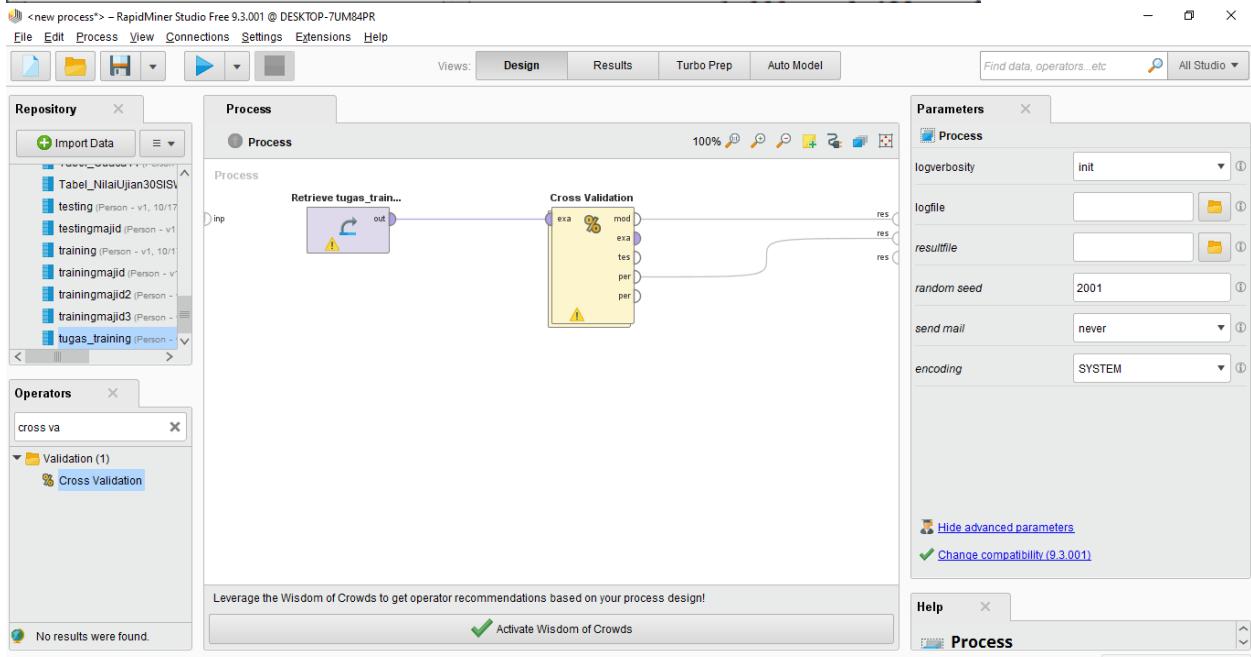
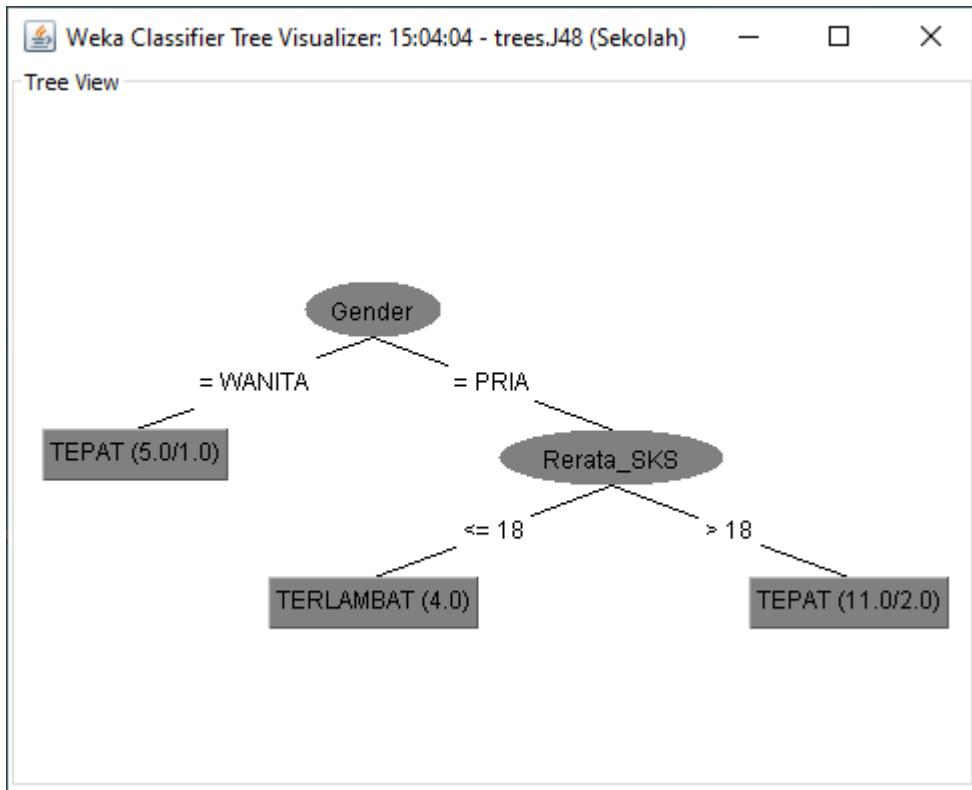
	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC
0.571	0.000	1.000	0.571	0.727	0.681	
1.000	0.429	0.813	1.000	0.897	0.681	
Weighted Avg.	0.850	0.279	0.878	0.850	0.837	0.681

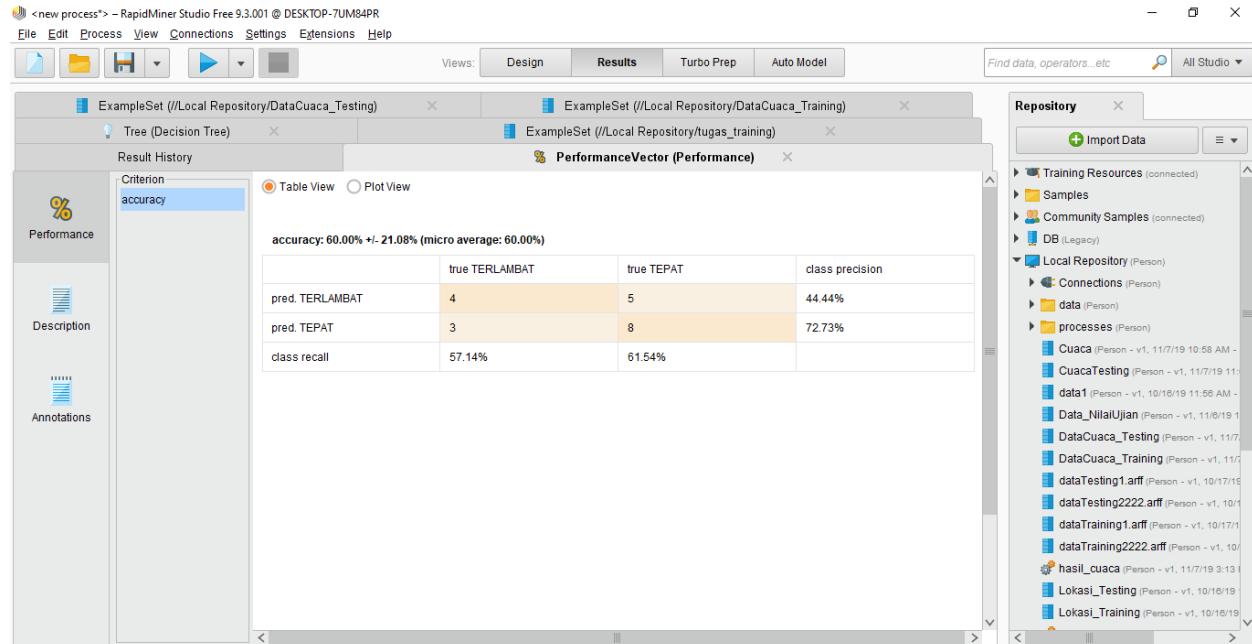
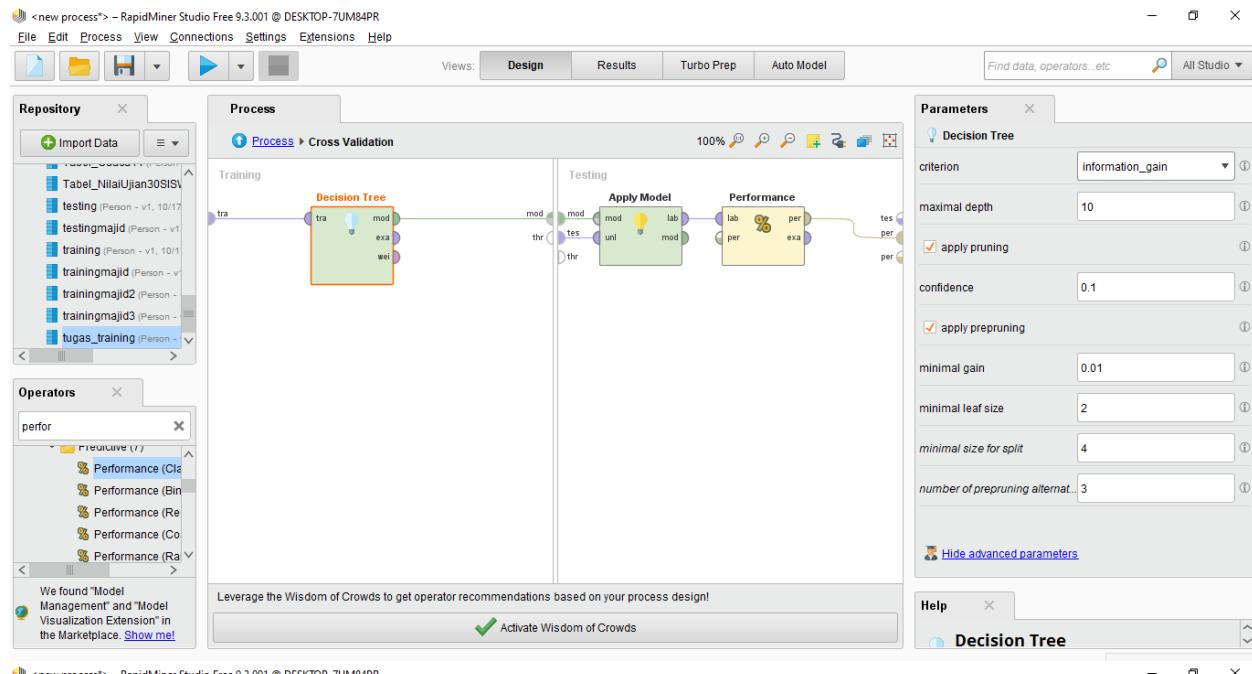
==== Confusion Matrix ===

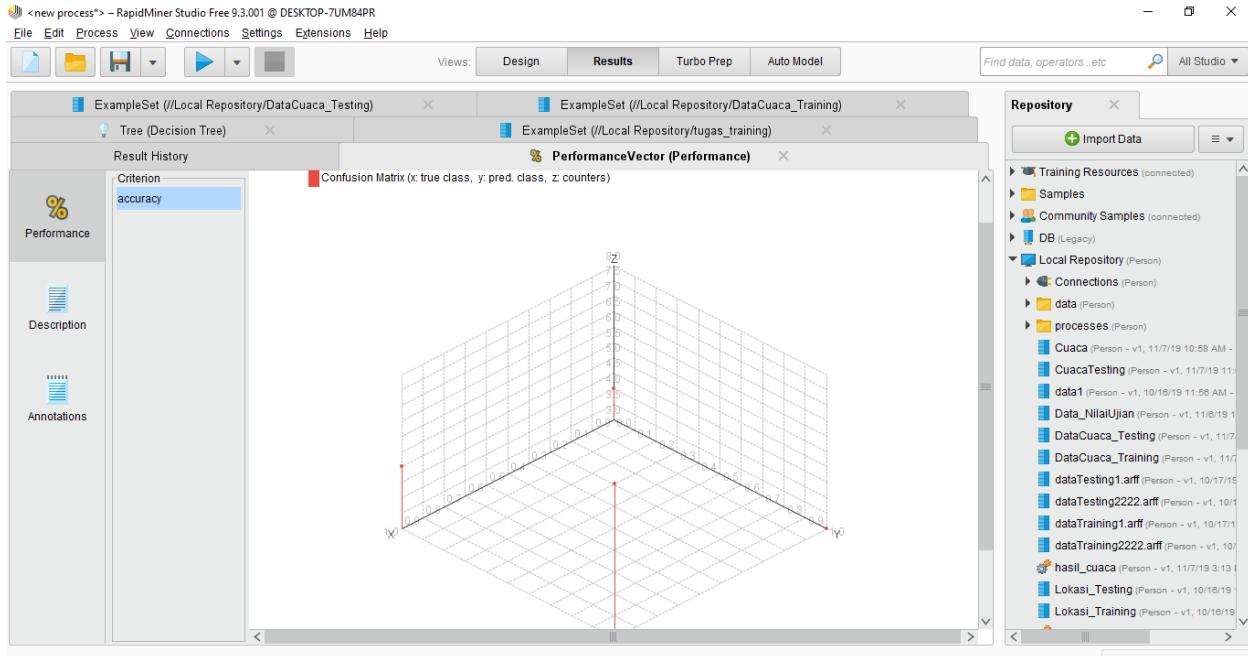
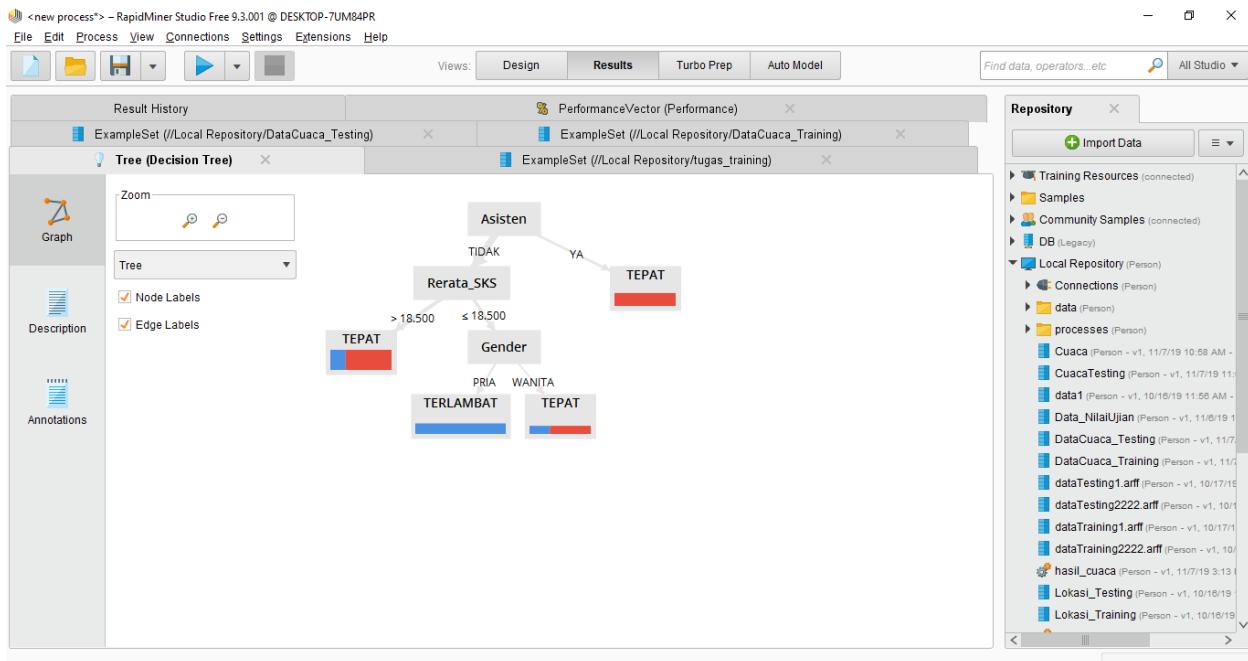
a	b	<-- classified as
4	3	a = TERLAMBAT
0	13	b = TEPAT

Status OK Log x 0







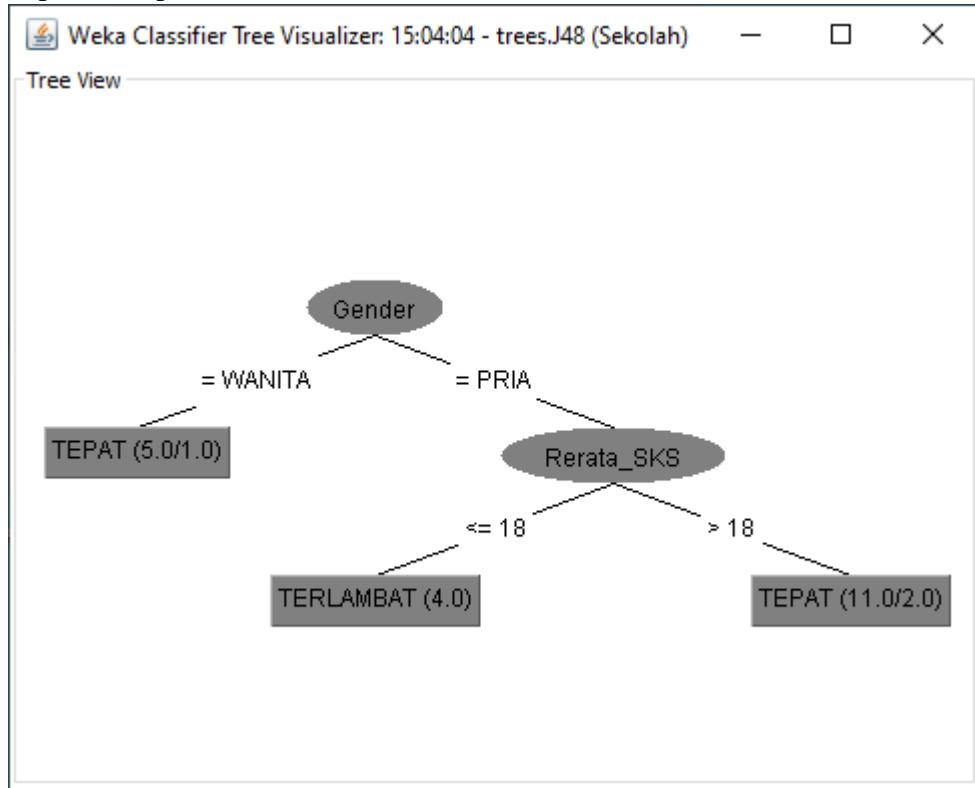


1.

CUACA	SUHU	KELEMBABAN UDARA	BERANGIN	BERMAIN TENIS
Cerah	75	65	TIDAK	YA
Cerah	80	68	YA	YA
Cerah	83	87	YA	TIDAK
Mendung	70	96	TIDAK	YA
Mendung	68	81	TIDAK	YA
Hujan	65	75	TIDAK	YA

hujan	64	85	YA	TIDAK
-------	----	----	----	-------

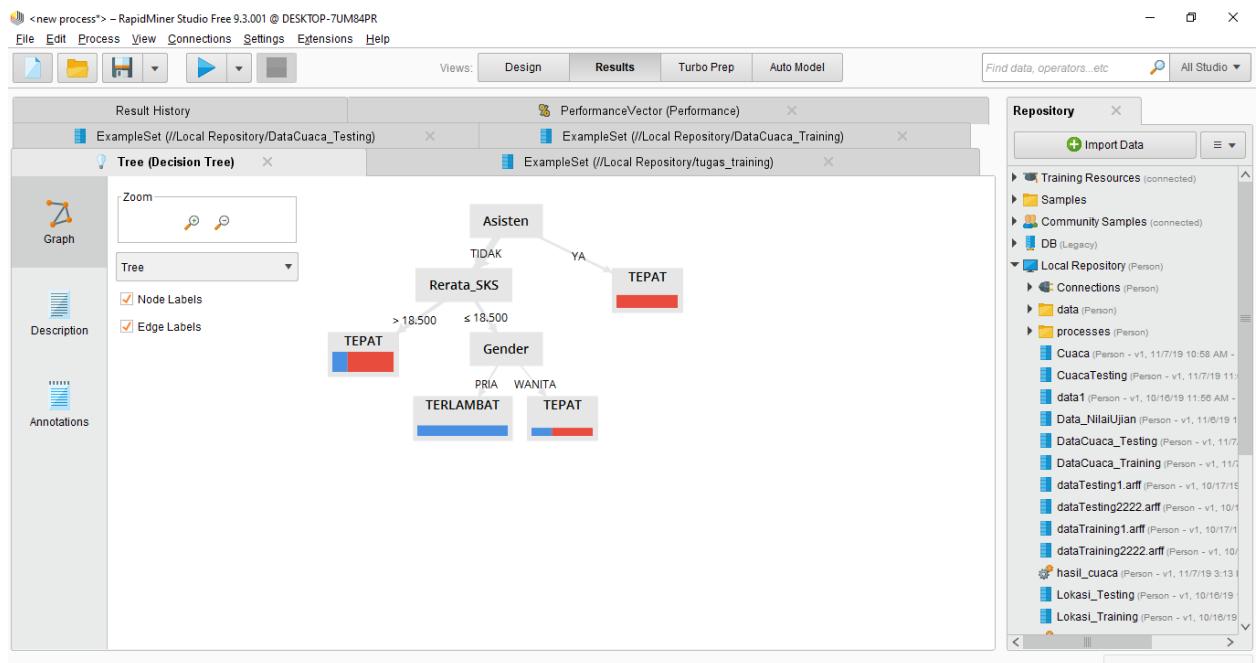
2. a. pohon keputusan



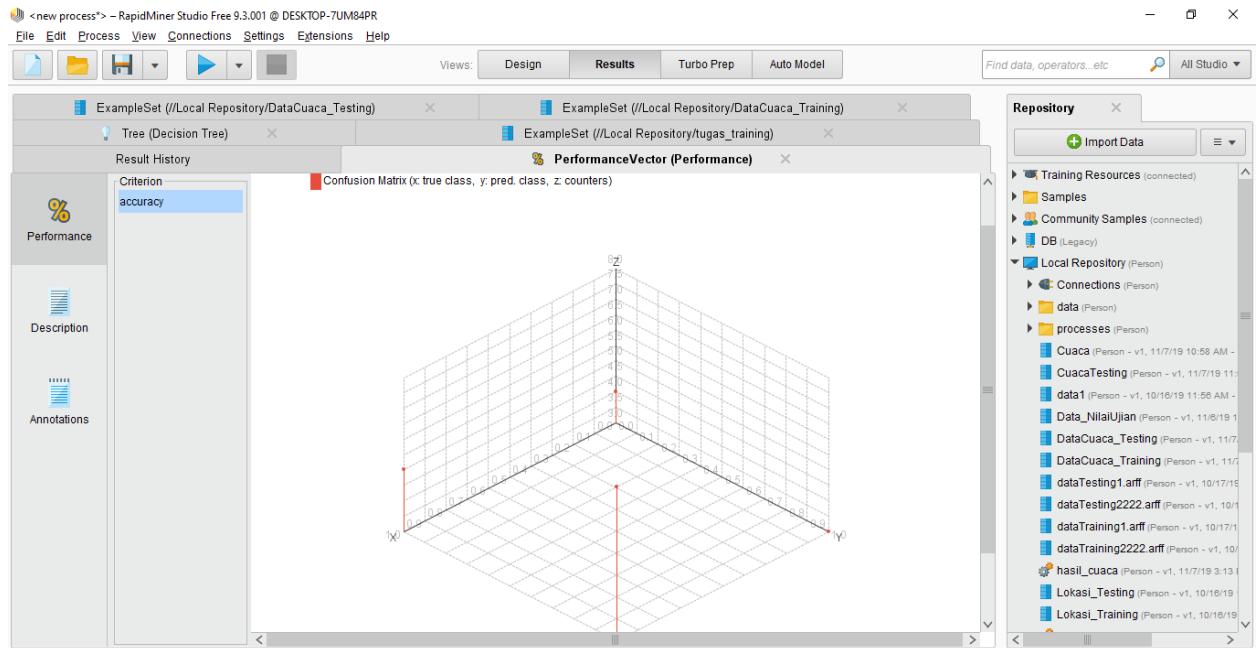
b. nilai parameter :

- Jumlah simpul daun pada pohon keputusan = 3
- jumlah simpul keseluruhan pada pohon keputusan = 5
- waktu yang dibutuhkan untuk proses pelatihan = 0 detik
- tingkat ketepatan klasifikasi = 85%
- tingkat ketidaktepatan klasifikasi = 15%

3. Pohon keputusan



Plot View



4. Klasifikasi yang terbentuk :

- Seorang akan TEPAT(Lama_Studi) jika kondisi :
 - Gender = WANITA
 - Gender = PRIA, rerata_sks>18(nilai atribut lain diabaikan)
- Seorang akan TERLAMBAT(Lama_Studi) jika kondisi :
 - Gender = PRIA, rerata_sks <=18(nilai atribut lain diabaikan)

MODUL 10

PERCOBAAN

	A	B	C	D
1	NO_SISWA	NAMA	B.IND	B.ING
2	S-101	JOKO	8.54	8.40
3	S-102	AGUS	9.98	6.81
4	S-103	SUSI	6.20	9.15
5	S-104	DYAH	5.24	7.26
6	S-105	WATI	5.70	5.71
7	S-106	IKA	8.57	5.87
8	S-107	EKO	7.70	7.71
9	S-108	YANTO	6.60	5.70
10	S-109	WAWAN	9.00	8.12
11	S-110	MAHMUD	9.81	9.58
12				
13				

RapidMiner Studio Free 9.3.001 @ LABSI-08-PC

File Edit Process View Connections Settings Extensions Help

Import Data - Select the cells to import.

Select the cells to import.

Sheet: k-means Cell range: B1:D11 Select All Define header row: 1

	A	B	C	D
1	NO_SISWA	NAMA	B.IND	B.ING
2	S-101	JOKO	8.540	8.400
3	S-102	AGUS	9.980	6.810
4	S-103	SUSI	6.200	9.150
5	S-104	DYAH	5.240	7.260
6	S-105	WATI	5.700	5.710
7	S-106	IKA	8.570	5.870
8	S-107	EKO	7.700	7.710
9	S-108	YANTO	6.600	5.700
10	S-109	WAWAN	9.000	8.120
11	S-110	MAHMUD	9.810	9.580

← Previous → Next Cancel

Repository Operators

Import Data

Training Resources (connected)

Samples

Community Samples (connected)

DB (Legacy)

Local Repository (LABSI-08)

Data Access (53)

Blending (79)

Cleansing (26)

Modeling (156)

Scoring (12)

Validation (29)

Get more operators from the Marketplace

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	NAMA polynomial <i>id</i>	B.IND real	B.ING real	
1	JOKO			
2	AGUS			
3	SUSI			
4	DYAH			
5	WATI			
6	IKA			
7	EKO			
8	YANTO			
9	WAWAN	9.000	8.120	
10	MAHMUD	9.810	9.580	

Please enter the new role:

OK Cancel

no problems.

Previous Next Cancel

Import Data - Format your columns.

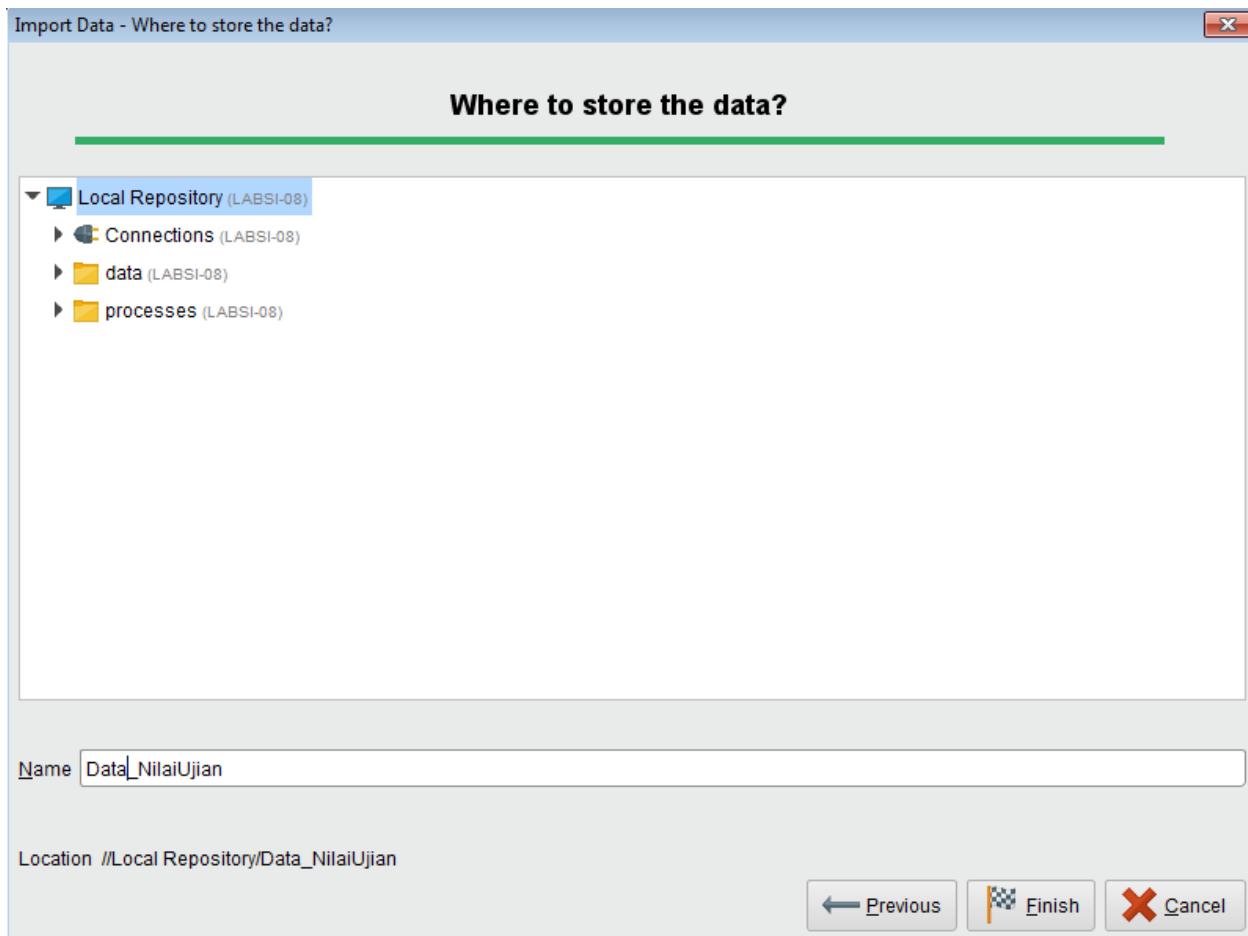
Format your columns.

Replace errors with missing values ⓘ

	NAMA polynomial <i>id</i>	B.IND real	B.ING real	
1	JOKO	8.540	8.400	
2	AGUS	9.980	6.810	
3	SUSI	6.200	9.150	
4	DYAH	5.240	7.260	
5	WATI	5.700	5.710	
6	IKA	8.570	5.870	
7	EKO	7.700	7.710	
8	YANTO	6.600	5.700	
9	WAWAN	9.000	8.120	
10	MAHMUD	9.810	9.580	

no problems.

Previous Next Cancel



<new process> – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Find data, operators...etc All Studio

Result History ExampleSet //Local Repository/Data_NilaiUjian

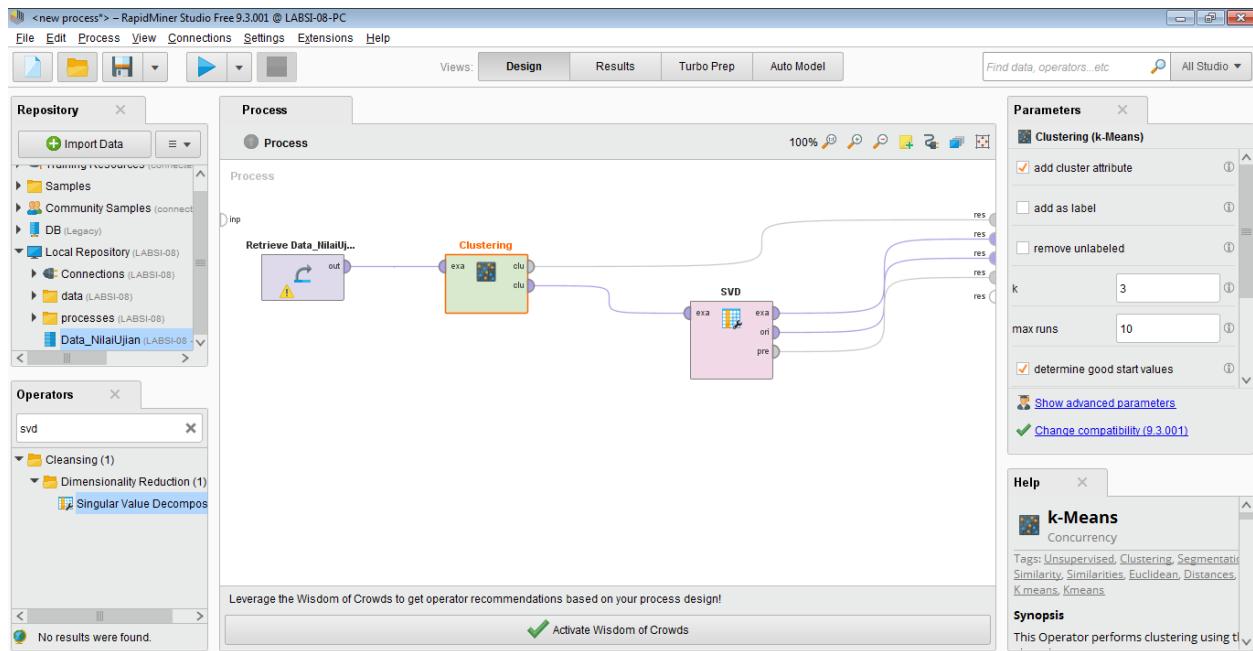
Filter (10 / 10 examples): all

Row No.	NAMA	B.IND	B.ING
1	JOKO	8.540	8.400
2	AGUS	9.980	6.810
3	SUSI	6.200	9.150
4	DYAH	5.240	7.260
5	WATI	5.700	5.710
6	IKA	8.570	5.870
7	EKO	7.700	7.710
8	YANTO	6.600	5.700
9	WAWAN	9	8.120
10	MAHMUD	9.810	9.580

Repository

- Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-08)
 - Connections (LABSI-08)
 - data (LABSI-08)
 - processes (LABSI-08)
 - Data_NilaiUjian (LABSI-08 - v1, 11/11)

ExampleSet (10 examples, 1 special attribute, 2 regular attributes)



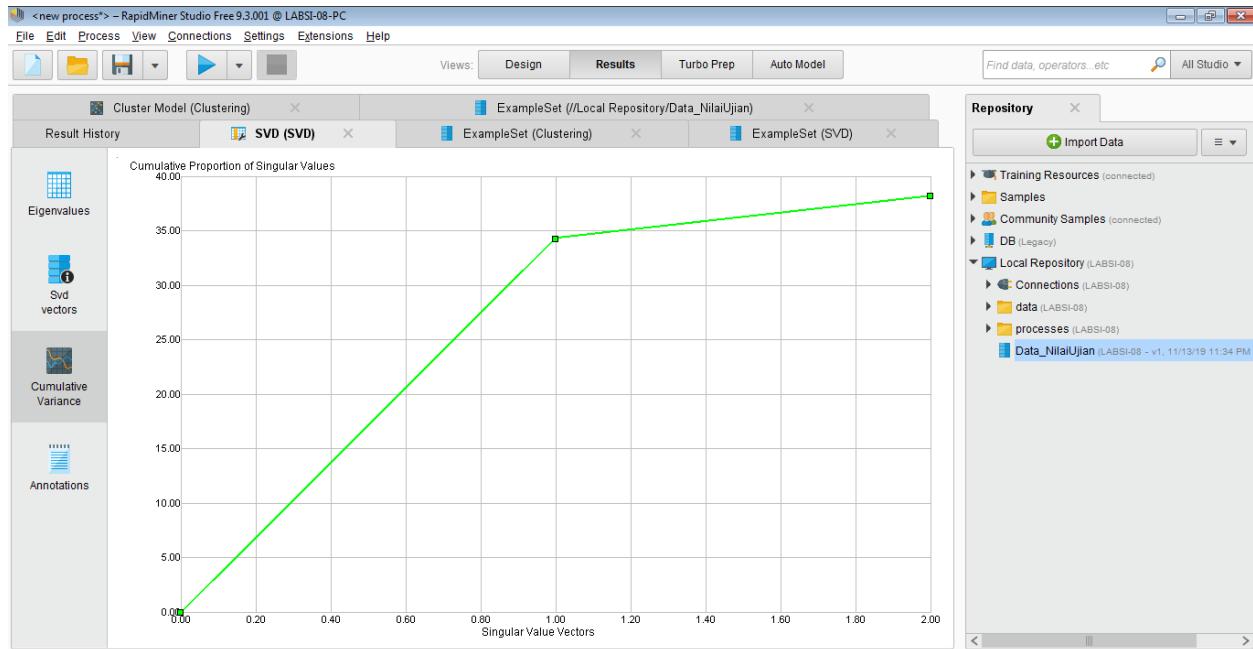
SVD

Component	Singular Value	Proportion of Singular Value	Cumulative Singular Values	Cumulative Proportion of S...
SVD 1	34.340	0.898	34.340	0.898
SVD 2	3.906	0.102	38.246	1.000

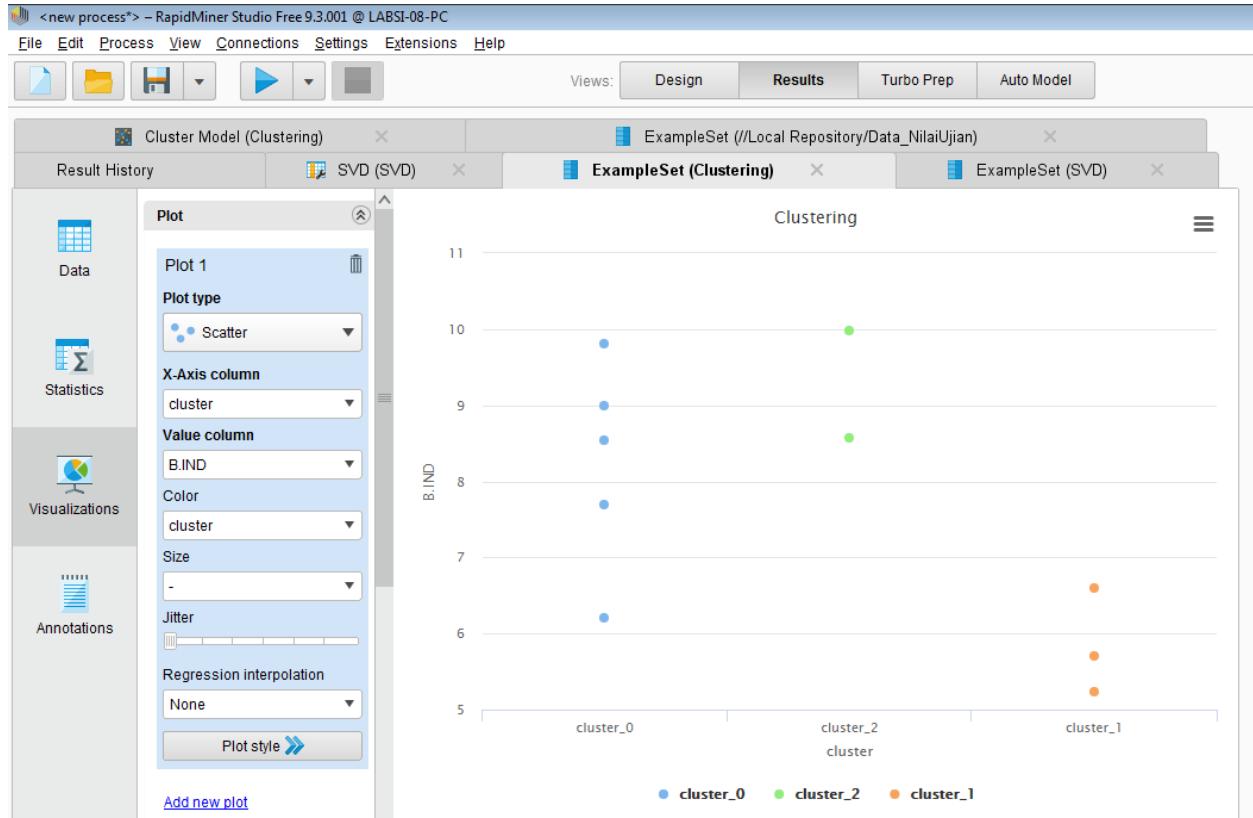
NILAI SVD VECTOR

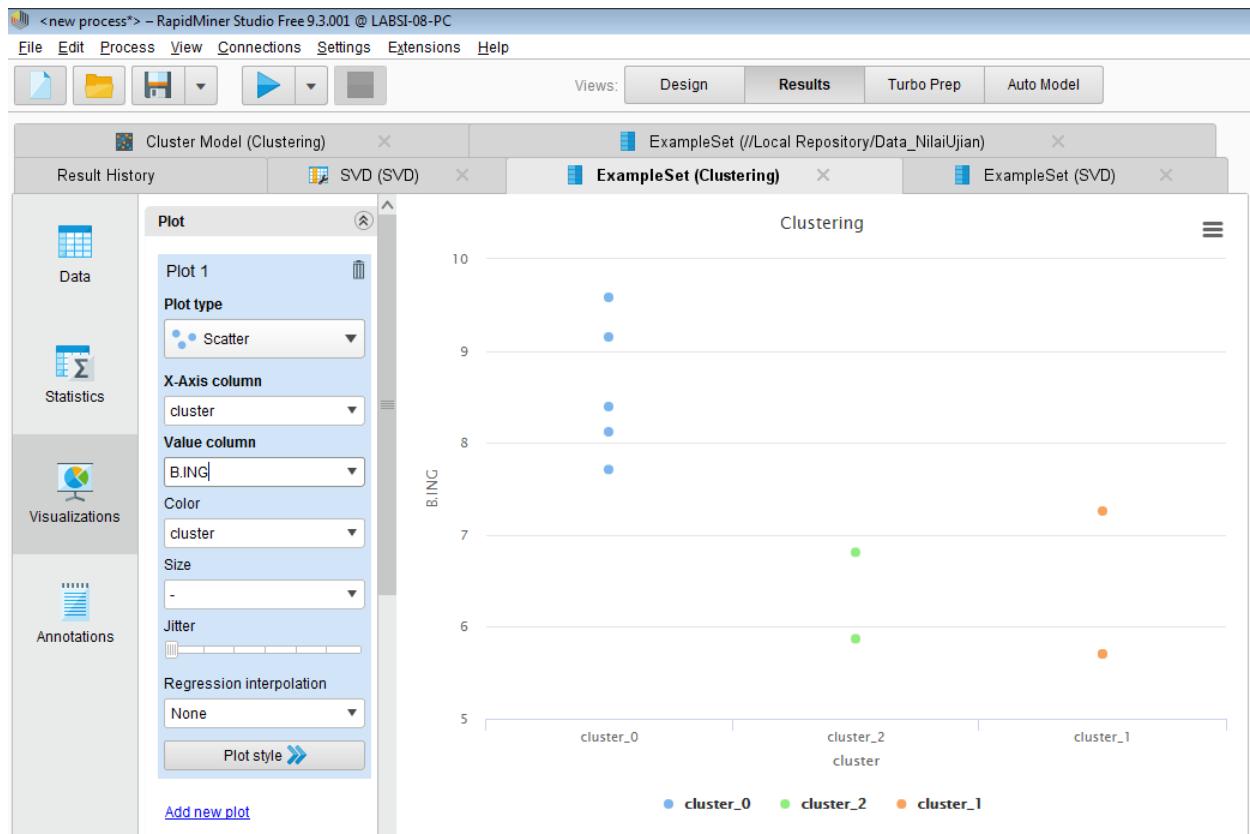
Attribute	SVD Vector 1
B.IND	0.723
B.ING	0.690

NILAI SVD VECTOR



EXAMPLESET (K-MEANS)





EXAMPLESET (SVD)

The screenshot shows the RapidMiner Studio interface with the following details:

- File Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help.
- Views:** Design, Results, Turbo Prep, Auto Model.
- Process List:** Cluster Model (Clustering), ExampleSet (//Local Repository/Data_NilaiUjian), SVD (SVD), ExampleSet (Clustering), ExampleSet (SVD).
- Data View:** Shows a table with columns Row No., NAMA, cluster ↑, and svd_1. The data is identical to the one shown in the Plot area.

CLUSTER MODEL (CLUSTERING)

<new process*> – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC

File Edit Process View Connections Settings Extensions Help

Views: []

Result History SVD (SVD) Exar

Cluster Model (Clustering)

Cluster Model

Description

Cluster 0: 5 items
Cluster 1: 3 items
Cluster 2: 2 items
Total number of items: 10

Folder View

GRAPH

```
graph TD; root((root set)) --> C0((0)); root --> C1((1)); root --> C2((2));
```



<new process*> – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results

Cluster Model (Clustering) ExampleSet (//Local File System)

Result History SVD (SVD) ExampleSet (Clustering)

Open in Turbo Prep Auto Model

Data Statistics Visualizations Annotations

Row No.	NAMA	cluster ↑	B.IND	B.ING
1	JOKO	cluster_0	8.540	8.400
3	SUSI	cluster_0	6.200	9.150
7	EKO	cluster_0	7.700	7.710
9	WAWAN	cluster_0	9	8.120
10	MAHMUD	cluster_0	9.810	9.580
4	DYAH	cluster_1	5.240	7.260
5	WATI	cluster_1	5.700	5.710
8	YANTO	cluster_1	6.600	5.700
2	AGUS	cluster_2	9.980	6.810
6	IKA	cluster_2	8.570	5.870

TUGAS

	A	B	C	D	E	F	G
1	NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA	
2	S-101	JOKO	61963	7.742876	8.591282	9.396739	
3	S-102	AGUS	9.53946	8.99237	9.812881	9.075258	
4	S-103	SUSI	6.015083	5.283035	6.777953	9.011694	
5	S-104	DYAH	6.488057	5.229574	7.586763	8.249706	
6	S-105	WATI	9.162357	9.795546	6.84392	8.234133	
7	S-106	IKA	9.273107	9.40263	9.567111	5.654043	
8	S-107	EKO	5.331595	8.152448	7.712614	5.88396	
9	S-108	YANTO	9.261899	8.455277	7.847439	5.432081	
10	S-109	WAWAN	8.522922	5.231341	5.528506	8.969405	
11	S-110	MAHMUD	8.621424	6.395424	9.174776	9.704549	
12	S-111	BUDI	7.862672	8.552347	7.895965	9.341079	
13	S-112	SANTI	5.291875	6.374269	8.227479	7.873467	
14	S-113	DIAN	6.37584	8.173345	6.062155	9.709964	
15	S-114	DANI	5.6619	7.324451	5.302824	5.938794	
16	S-115	AHMAD	7.807628	9.541835	5.640024	8.332583	
17	S-116	BAYU	5.561153	7.981713	8.703092	6.992989	
18	S-117	RISA	5.542186	8.001654	8.042861	6.732631	
19	S-118	RANI	7.5325	6.612823	9.356506	9.49397	
20	S-119	YANI	6.379902	5.237726	7.482895	8.471325	
21	S-120	RATIH	6.083601	5.246812	5.845863	5.527945	
22	S-121	INDAH	9.976152	8.795512	7.192112	5.510109	
23	S-122	JONO	5.092287	5.352359	9.456501	7.56409	

Import Data - Select the cells to import.

Select the cells to import.

Sheet: Sheet1 ▾ Cell range: B1:F31 Select All Define header row: 1

	A	B	C	D	E	F
1	NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA
2	S-101	JOKO	7.062	7.743	8.591	9.397
3	S-102	AGUS	9.539	8.992	9.813	9.075
4	S-103	SUSI	6.015	5.283	6.778	9.012
5	S-104	DYAH	6.488	5.230	7.587	8.250
6	S-105	WATI	9.162	9.796	6.844	8.234
7	S-106	IKA	9.273	9.403	9.567	5.654
8	S-107	EKO	5.332	8.152	7.713	5.884
9	S-108	YANTO	9.262	8.455	7.847	5.432
10	S-109	WAWAN	8.523	5.231	5.529	8.969
11	S-110	MAHMUD	8.621	6.395	9.175	9.705
12	S-111	BUDI	7.863	8.552	7.896	9.341
13	S-112	SANTI	5.292	6.374	8.227	7.873
14	S-113	DIAN	6.376	8.173	6.062	9.710
15	S-114	DANI	5.660	7.004	5.200	5.200

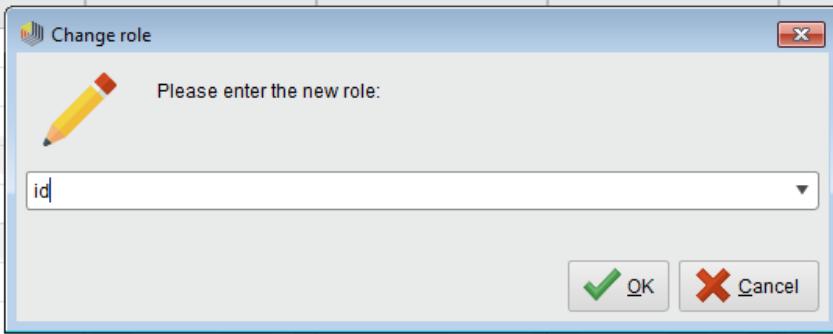
← Previous Next →  Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ①

	NAMA <i>polynominal</i>	B.IND <i>real</i>	B.ING <i>real</i>	MTK <i>real</i>	IPA <i>real</i>
1	JOKO				
2	AGUS				
3	SUSI				
4	DYAH				
5	WATI				
6	IKA				
7	EKO				
8	YANTO				
9	WAWAN	8.523	5.231	5.529	8.969
10	MAHMUD	8.621	6.395	9.175	9.705
11	BUDI	7.863	8.552	7.896	9.341
12	SANTI	5.292	6.374	8.227	7.873
13	DIAN	6.376	8.173	6.062	9.710



 no problems.

 Previous  Next  Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	NAMA polynominal id	B.IND <small>real</small>	B.ING <small>real</small>	MTK <small>real</small>	IPA <small>real</small>
1	JOKO	7.062	7.743	8.591	9.397
2	AGUS	9.539	8.992	9.813	9.075
3	SUSI	6.015	5.283	6.778	9.012
4	DYAH	6.488	5.230	7.587	8.250
5	WATI	9.162	9.796	6.844	8.234
6	IKA	9.273	9.403	9.567	5.654
7	EKO	5.332	8.152	7.713	5.884
8	YANTO	9.262	8.455	7.847	5.432
9	WAWAN	8.523	5.231	5.529	8.969
10	MAHMUD	8.621	6.395	9.175	9.705
11	BUDI	7.863	8.552	7.896	9.341
12	SANTI	5.292	6.374	8.227	7.873
13	DIAN	6.376	8.174 6.374	6.062	9.710

 no problems.

 [Previous](#)  [Next](#)  [Cancel](#)

<new process*> – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

ExampleSet (SVD) Cluster Model (Clustering) ExampleSet (/Local Repository/Data_NilaiUjian)

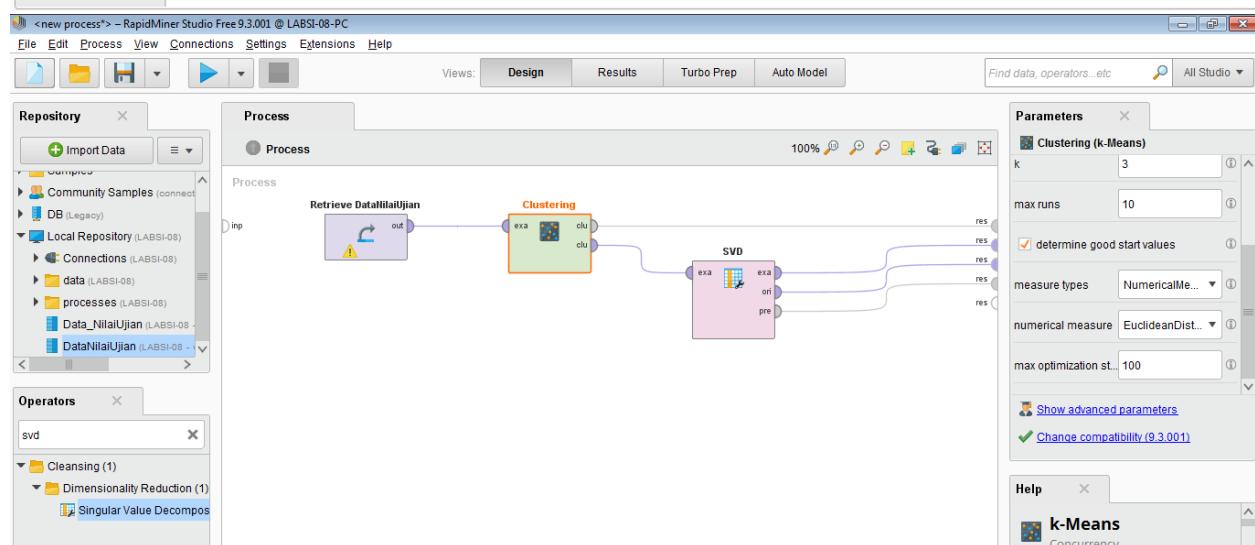
Result History ExampleSet (/Local Repository/DataNilaiUjian) SVD (SVD) ExampleSet

Open in Turbo Prep Auto Model Filter (30 / 30 examples)

Data

Row No.	NAMA	B.IND	B.ING	MTK	IPA
1	JOKO	7.062	7.743	8.591	9.397
2	AGUS	9.539	8.992	9.813	9.075
3	SUSI	6.015	5.283	6.778	9.012
4	DYAH	6.488	5.230	7.587	8.250
5	WATI	9.162	9.796	6.844	8.234
6	IKA	9.273	9.403	9.567	5.654
7	EKO	5.332	8.152	7.713	5.884
8	YANTO	9.262	8.455	7.847	5.432
9	WAWAN	8.523	5.231	5.529	8.969
10	MAHMUD	8.621	6.395	9.175	9.705
11	BUDI	7.863	8.552	7.896	9.341
12	SANTI	5.292	6.374	8.227	7.873
13	DIAN	6.376	8.173	6.062	9.710
14	DANI	5.662	7.324	5.303	5.939

ExampleSet (30 examples, 1 special attribute, 4 regular attributes)



SVD

The screenshot shows the RapidMiner Studio interface with the title bar "`<new process>` – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC". The menu bar includes File, Edit, Process, View, Connections, Settings, Extensions, and Help. The toolbar has icons for New, Open, Save, Import, Export, Run, Stop, and Help. The Views tab bar shows Design, Results, Turbo Prep, and Auto Model. The Result History pane lists "ExampleSet (/Local Repository/DataNilaiUjian)", "SVD (SVD)", "ExampleSet (Clustering)", "ExampleSet (SVD)", and "Cluster Model (Clustering)". The main content area displays the "Eigenvalues" results for the SVD process. A table shows the following data:

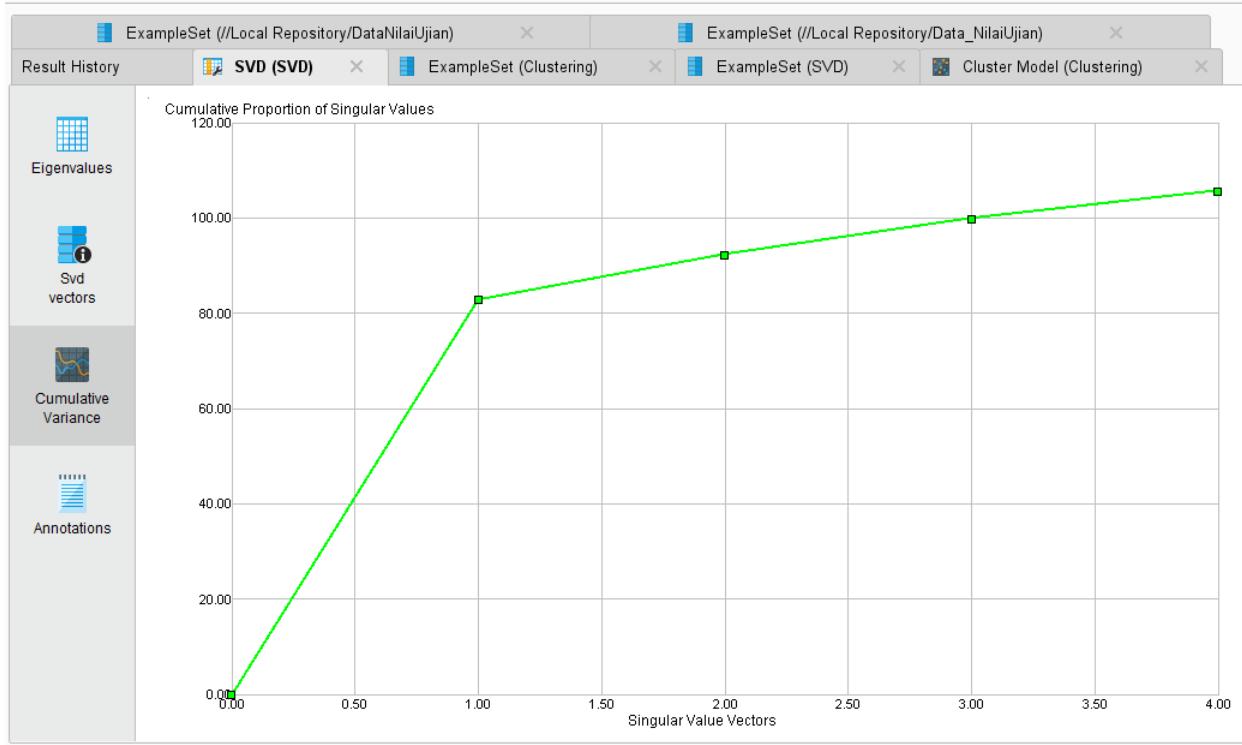
Component	Singular Value	Proportion of Singular Val...	Cumulative Singular Values	Cumulative Proportion of S...
SVD 1	82.989	0.785	82.989	0.785
SVD 2	9.403	0.089	92.393	0.873
SVD 3	7.595	0.072	99.987	0.945
SVD 4	5.790	0.055	105.777	1.000

NILAI SVD VECTOR

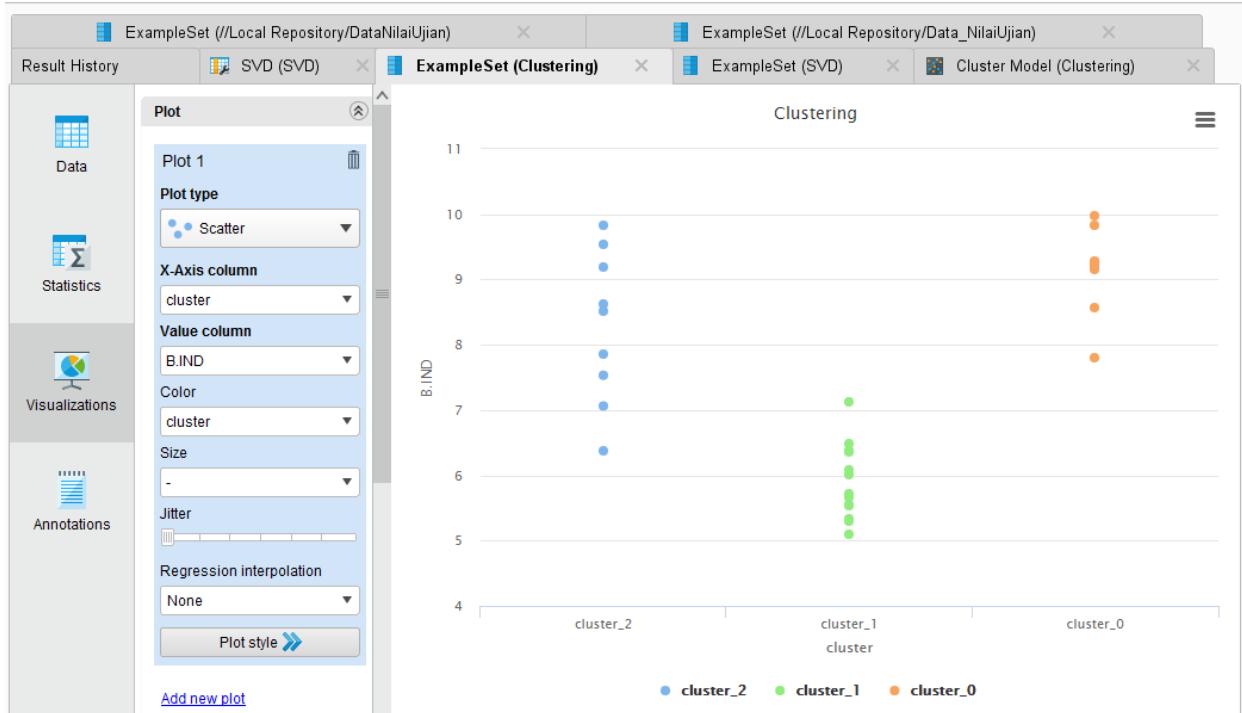
The screenshot shows the RapidMiner Studio interface with the title bar "`<new process>` – RapidMiner Studio Free 9.3.001 @ LABSI-08-PC". The menu bar includes File, Edit, Process, View, Connections, Settings, Extensions, and Help. The toolbar has icons for New, Open, Save, Import, Export, Run, Stop, and Help. The Views tab bar shows Design, Results, Turbo Prep, and Auto Model. The Result History pane lists "ExampleSet (/Local Repository/DataNilaiUjian)", "SVD (SVD)", "ExampleSet (Clustering)", "ExampleSet (SVD)", and "Cluster Model (Clustering)". The main content area displays the "Svd vectors" results for the SVD process. A table shows the following data:

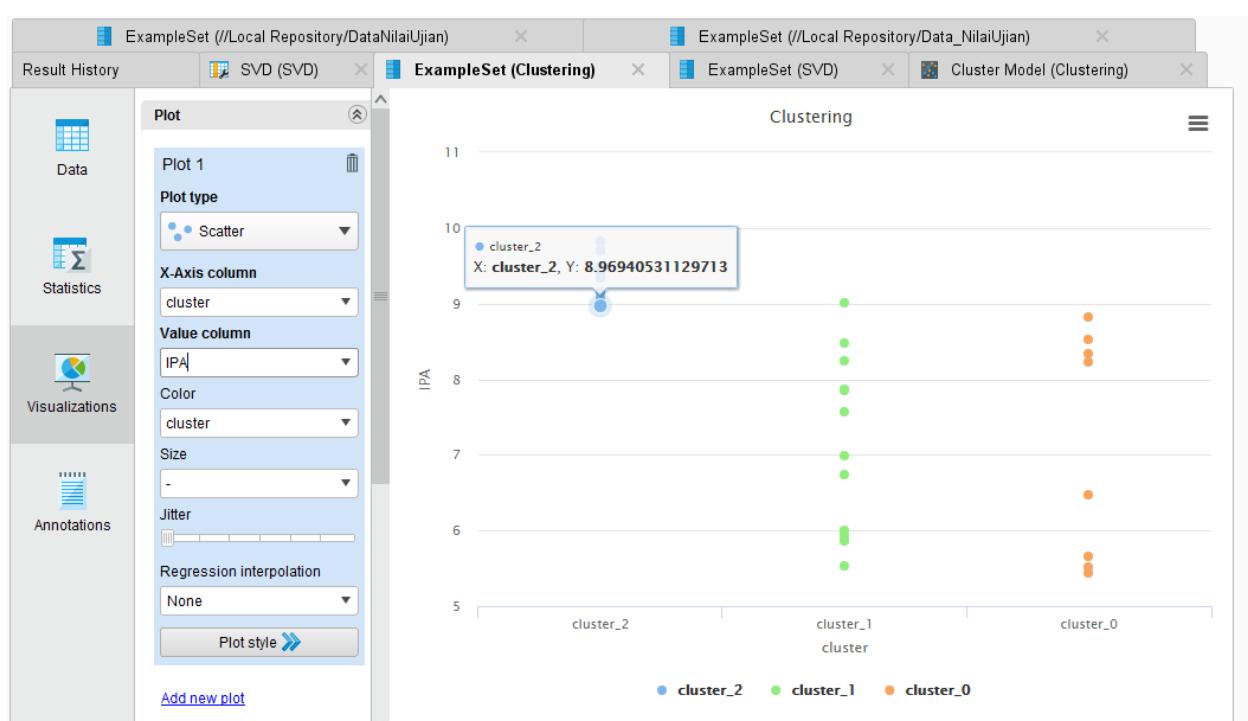
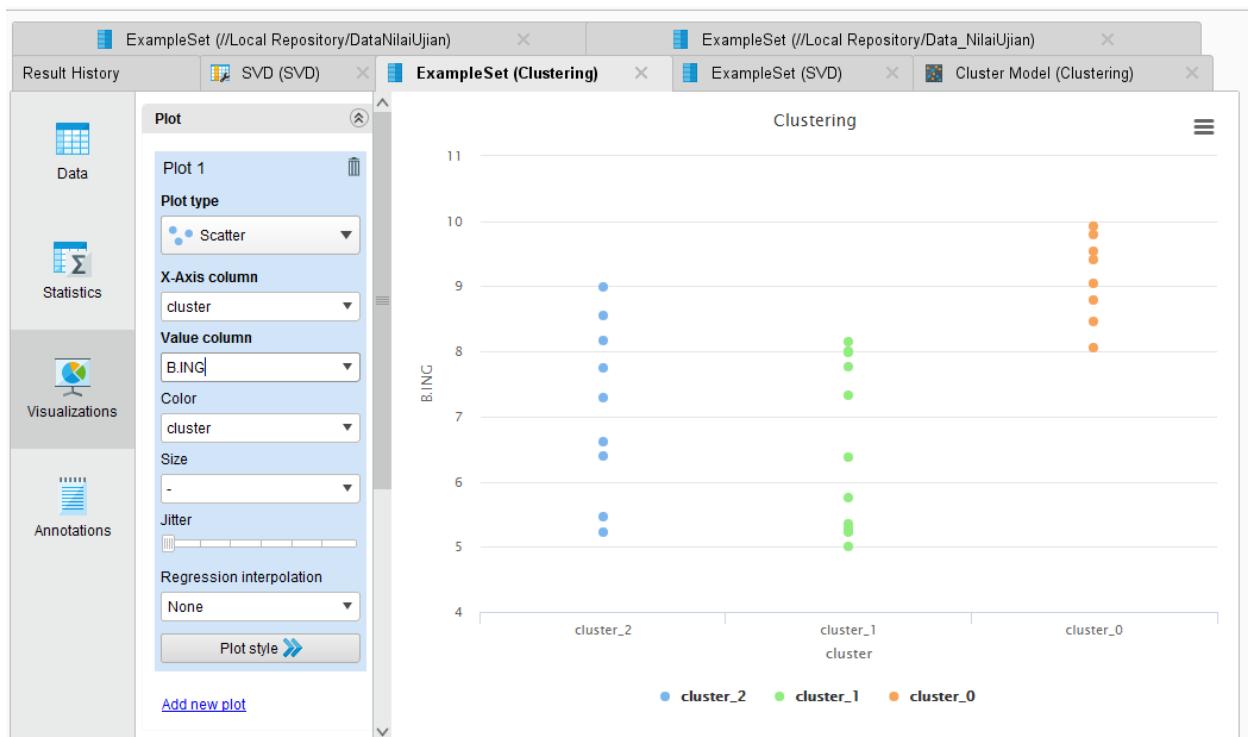
Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
B.IND	0.500	-0.367	-0.412
B.ING	0.488	-0.621	0.211
MTK	0.495	0.373	0.731
IPA	0.516	0.584	-0.502

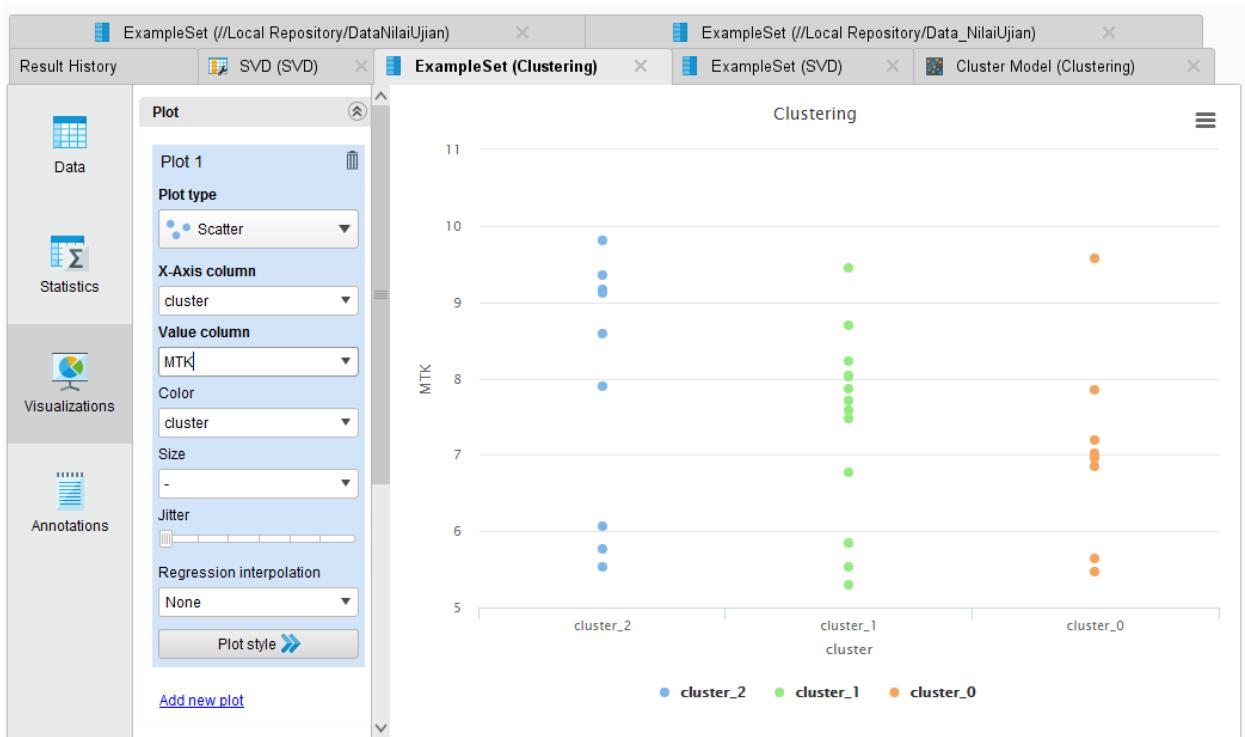
NILAI CUMULATIVE VARIANCE



EXAMPLESET (K-MEANS)







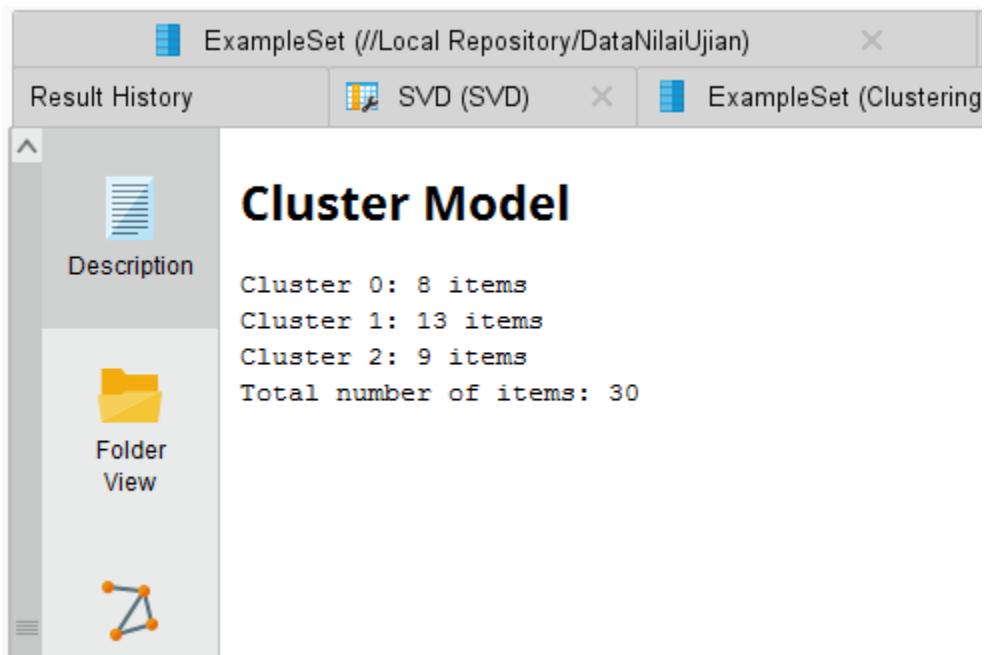
EXAMPLESET (SVD)

The screenshot shows the SVD result table:

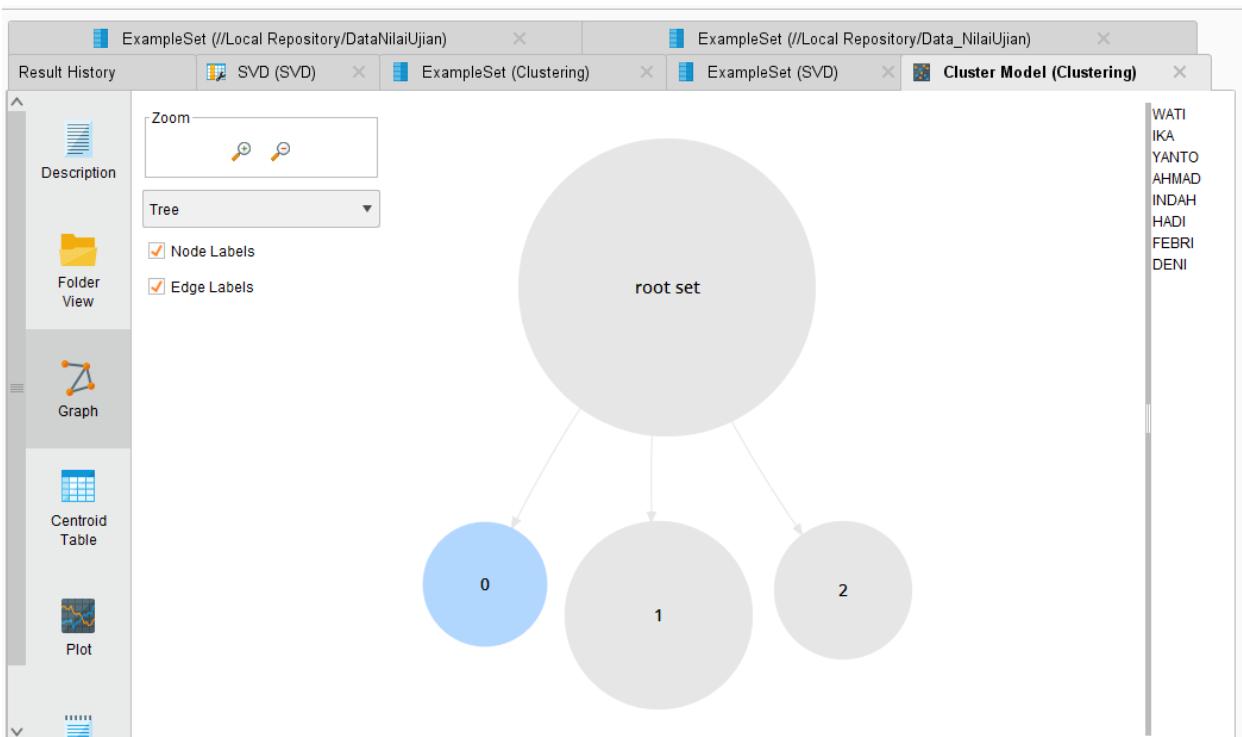
	Row No.	NAMA	cluster ↑	svd_1
	5	WATI	cluster_0	0.205
	6	IKA	cluster_0	0.203
	8	YANTO	cluster_0	0.186
	15	AHMAD	cluster_0	0.189
	21	INDAH	cluster_0	0.189
	26	HADI	cluster_0	0.210
	28	FEBRI	cluster_0	0.185
	29	DENI	cluster_0	0.195
	3	SUSI	cluster_1	0.164
	4	DYAH	cluster_1	0.166
	7	EKO	cluster_1	0.163
	12	SANTI	cluster_1	0.167
	14	DANI	cluster_1	0.146
	16	BAYU	cluster_1	0.176

ExampleSet (30 examples, 2 special attributes, 1 regular attribute)

CLUSTER MODEL



GRAPH



ExampleSet (//Local Repository/DataNilaiUjian) ExampleSet (//Local Repository/Data_NilaiUjian)

Result History SVD (SVD) **ExampleSet (Clustering)** ExampleSet (SVD) Cluster Model (Clustering)

Data Open in: Turbo Prep Auto Model Filter (30 / 30 examples): all

Row No. NAMA cluster ↑ B.IND B.ING MTK IPA

Row No.	NAMA	cluster ↑	B.IND	B.ING	MTK	IPA
5	WATI	cluster_0	9.162	9.796	6.844	8.234
6	IKA	cluster_0	9.273	9.403	9.567	5.654
8	YANTO	cluster_0	9.262	8.455	7.847	5.432
15	AHMAD	cluster_0	7.808	9.542	5.640	8.333
21	INDAH	cluster_0	9.976	8.796	7.192	5.510
26	HADI	cluster_0	9.217	9.927	6.956	8.823
28	FEBRI	cluster_0	8.577	8.052	5.463	8.531
29	DENI	cluster_0	9.839	9.041	7.020	6.475
3	SUSI	cluster_1	6.015	5.283	6.778	9.012
4	DYAH	cluster_1	6.488	5.230	7.587	8.250
7	EKO	cluster_1	5.332	8.152	7.713	5.884
12	SANTI	cluster_1	5.292	6.374	8.227	7.873
14	DANI	cluster_1	5.662	7.324	5.303	5.939
16	BAYU	cluster_1	5.561	7.982	8.703	6.993

ExampleSet (30 examples, 3 nominal attributes, 4 regular attributes)

[Open in Turbo Prep](#)[Auto Model](#)

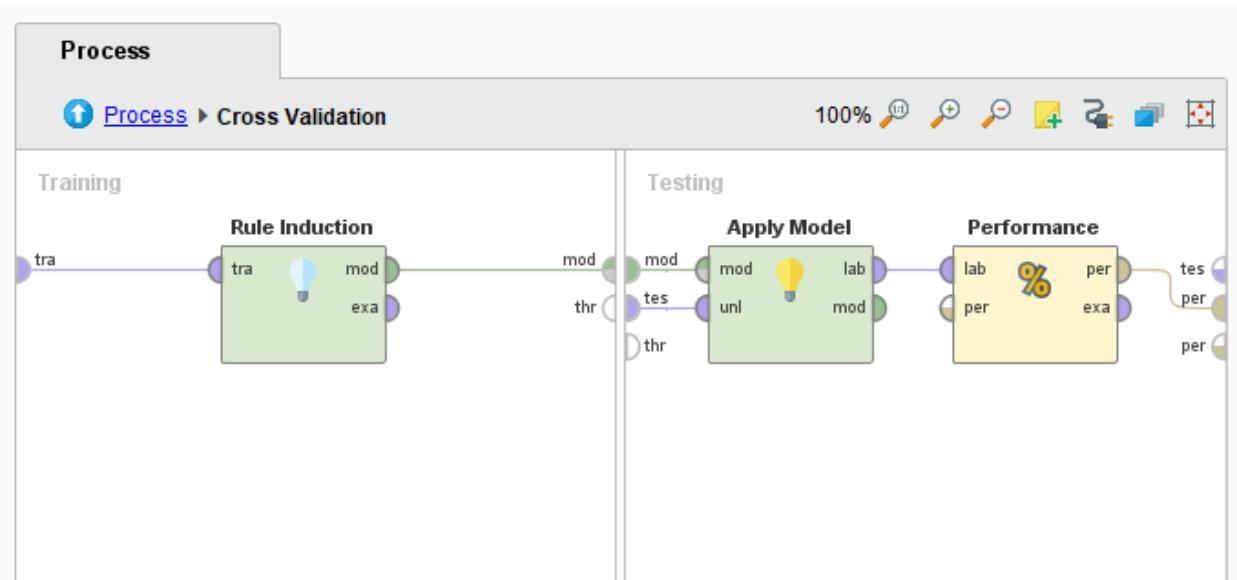
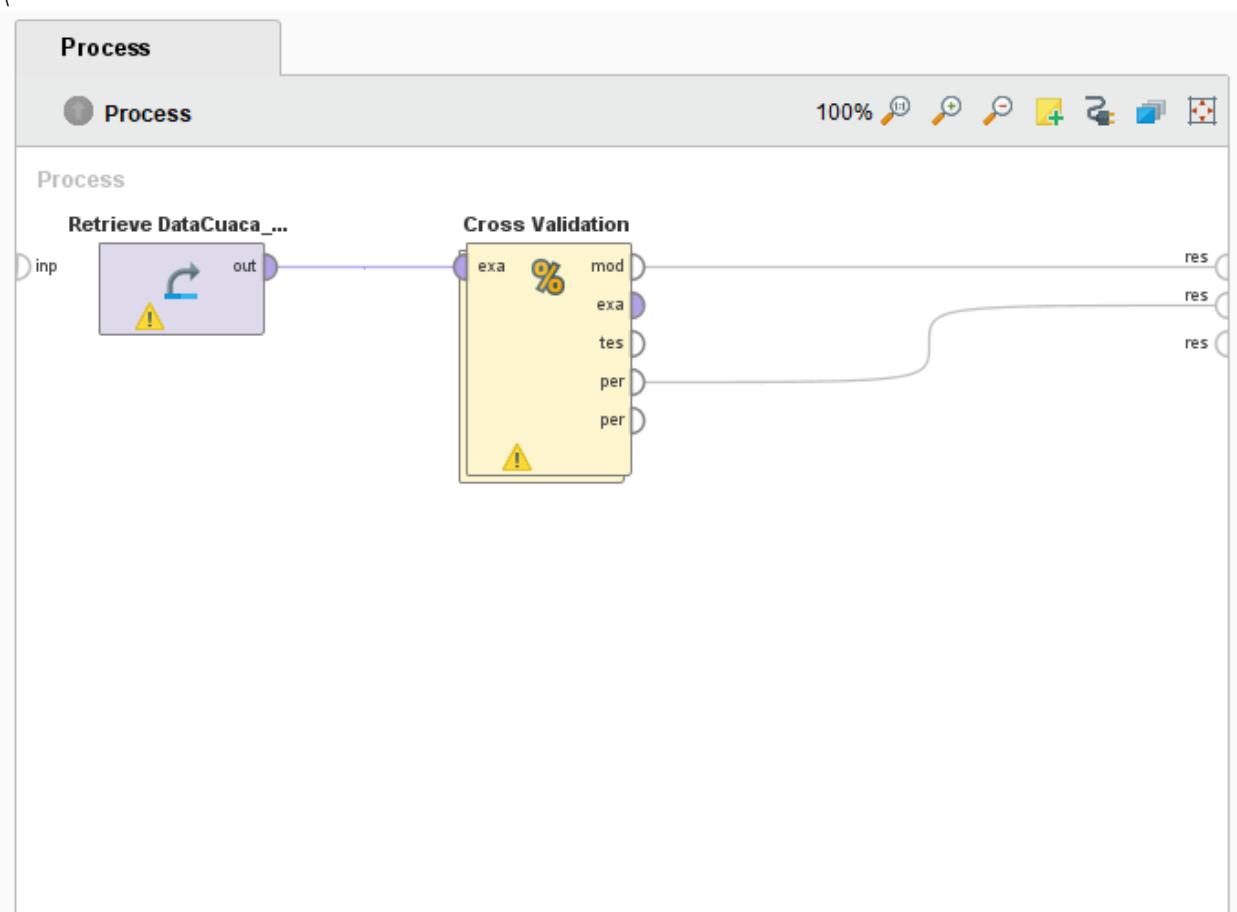
Filter (30 / 30 e)

Row No.	NAMA	cluster ↑	B.IND	B.ING	MTK	IPA
17	RISA	cluster_1	5.542	8.002	8.043	6.733
19	YANI	cluster_1	6.380	5.238	7.483	8.471
20	RATIH	cluster_1	6.084	5.247	5.846	5.528
22	JONO	cluster_1	5.092	5.352	9.457	7.564
23	SARAH	cluster_1	5.724	5.003	7.874	6.009
25	BAMBANG	cluster_1	6.352	7.760	5.539	5.854
27	NANA	cluster_1	7.122	5.761	8.026	7.848
1	JOKO	cluster_2	7.062	7.743	8.591	9.397
2	AGUS	cluster_2	9.539	8.992	9.813	9.075
9	WAWAN	cluster_2	8.523	5.231	5.529	8.969
10	MAHMUD	cluster_2	8.621	6.395	9.175	9.705
11	BUDI	cluster_2	7.863	8.552	7.896	9.341
13	DIAN	cluster_2	6.376	8.173	6.062	9.710
18	RANI	cluster_2	7.533	6.613	9.357	9.494
24	RAMA	cluster_2	9.838	7.287	9.114	9.820
30	TONI	cluster_2	9.190	5.454	5.766	9.151

MODUL 11

PERCOBAAN

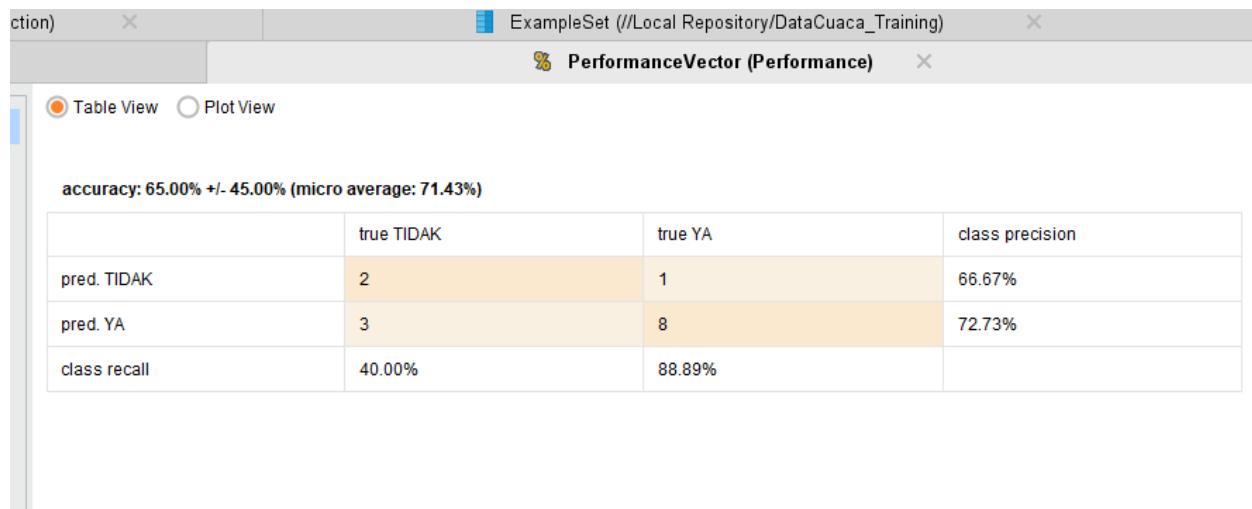
Row No.	Bermain_Te...	Cuaca	Suhu	Kelembaban...	Berangin
1	TIDAK	Cerah	85	85	TIDAK
2	TIDAK	Cerah	80	90	YA
3	YA	Mendung	83	86	TIDAK
4	YA	Hujan	70	96	TIDAK
5	YA	Hujan	68	80	TIDAK
6	TIDAK	Hujan	65	70	YA
7	YA	Mendung	64	65	YA
8	TIDAK	Cerah	72	95	TIDAK
9	YA	Cerah	69	70	TIDAK
10	YA	Hujan	75	80	TIDAK
11	YA	Cerah	75	70	YA
12	YA	Mendung	72	90	YA
13	YA	Mendung	81	75	TIDAK
14	TIDAK	Hujan	71	91	YA

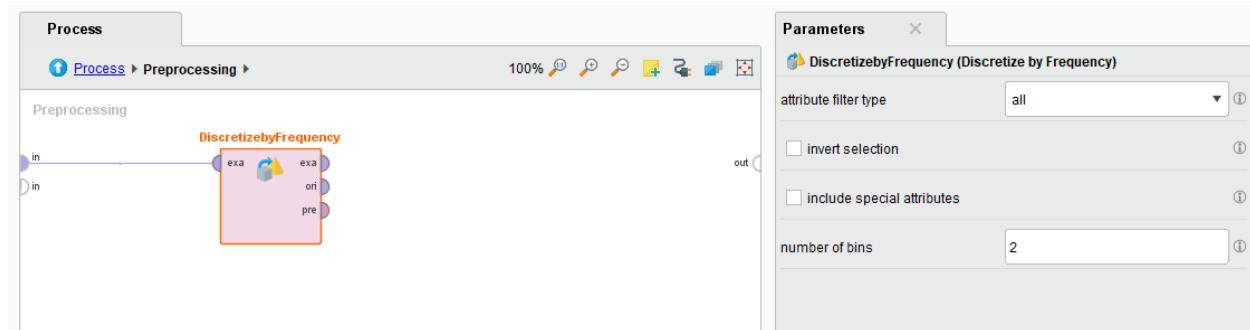
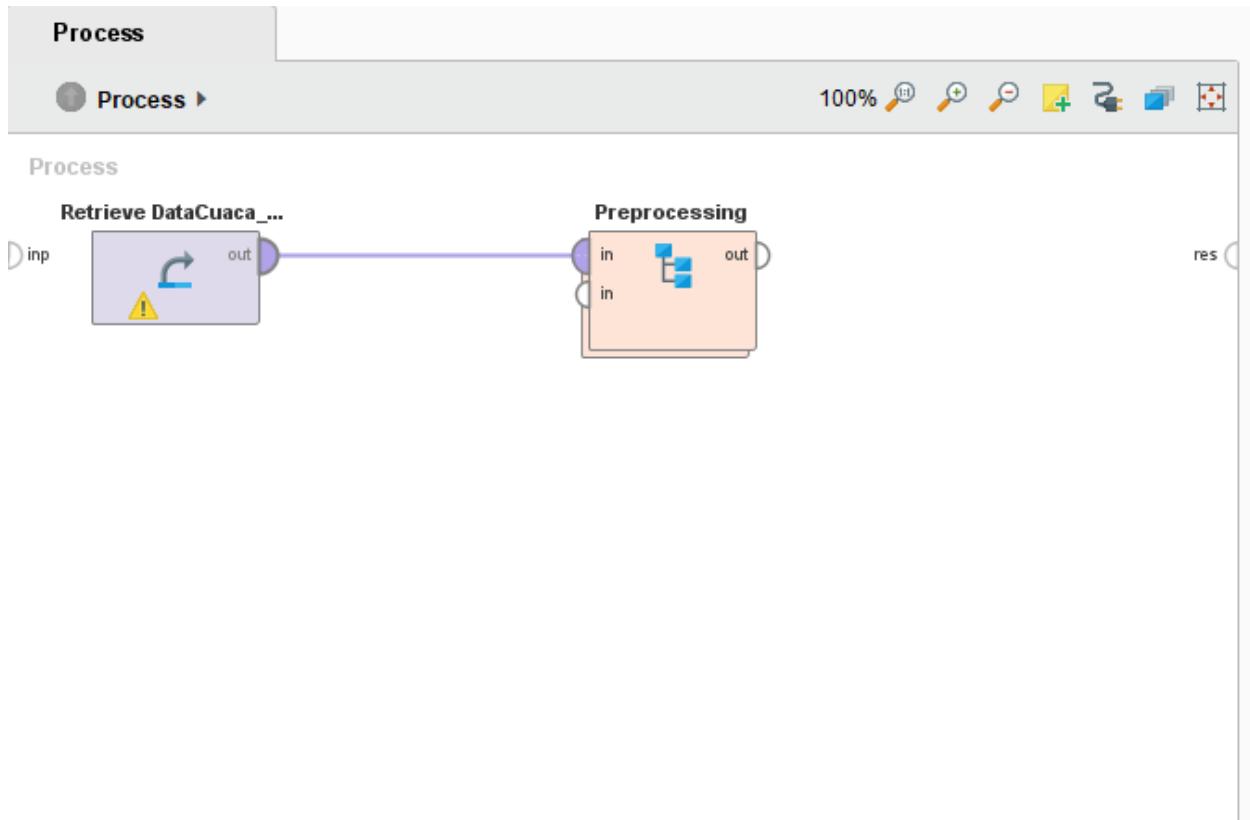


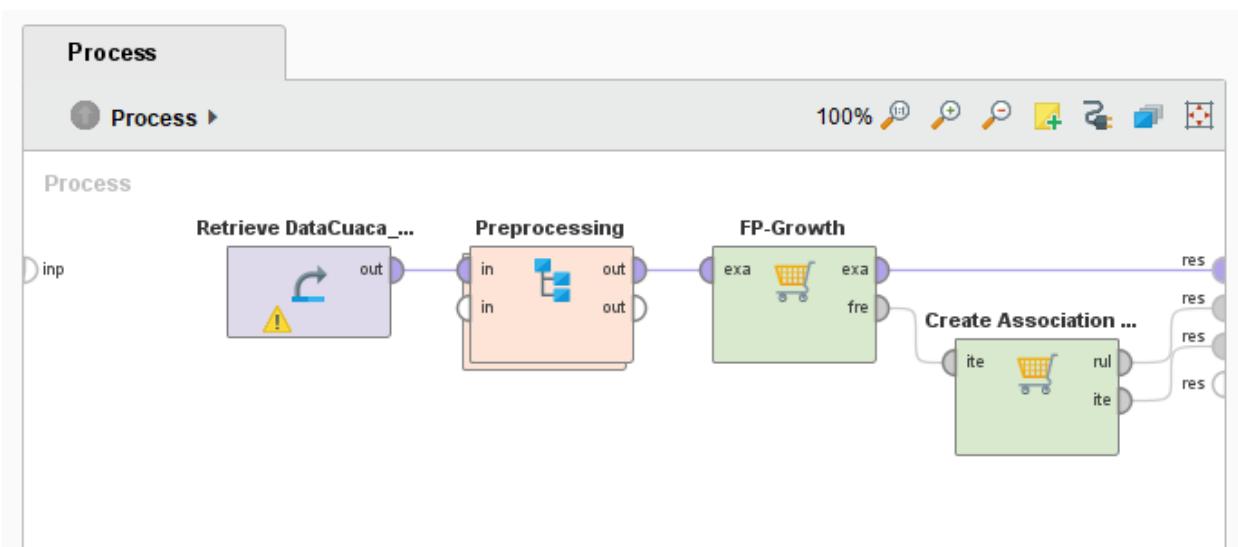
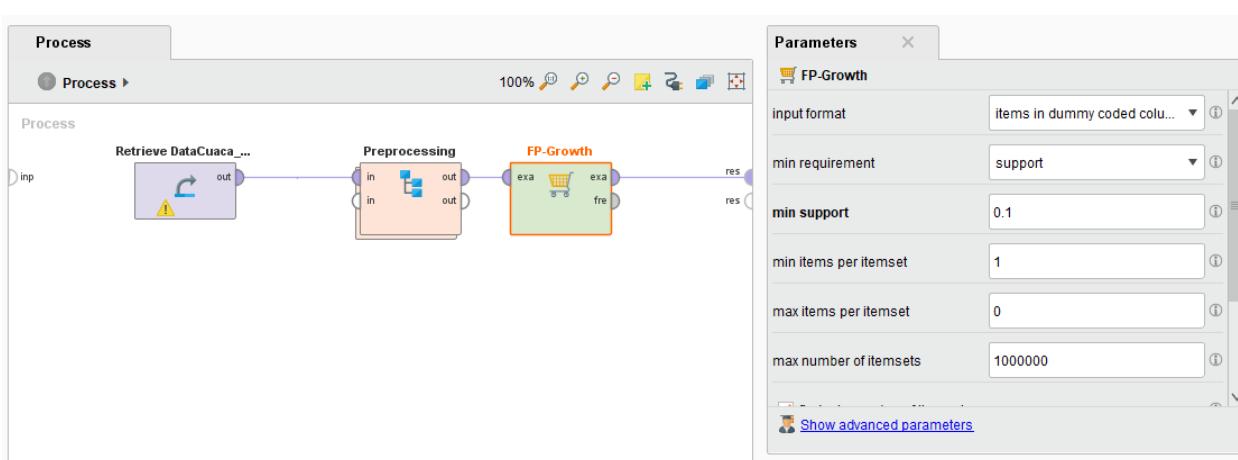
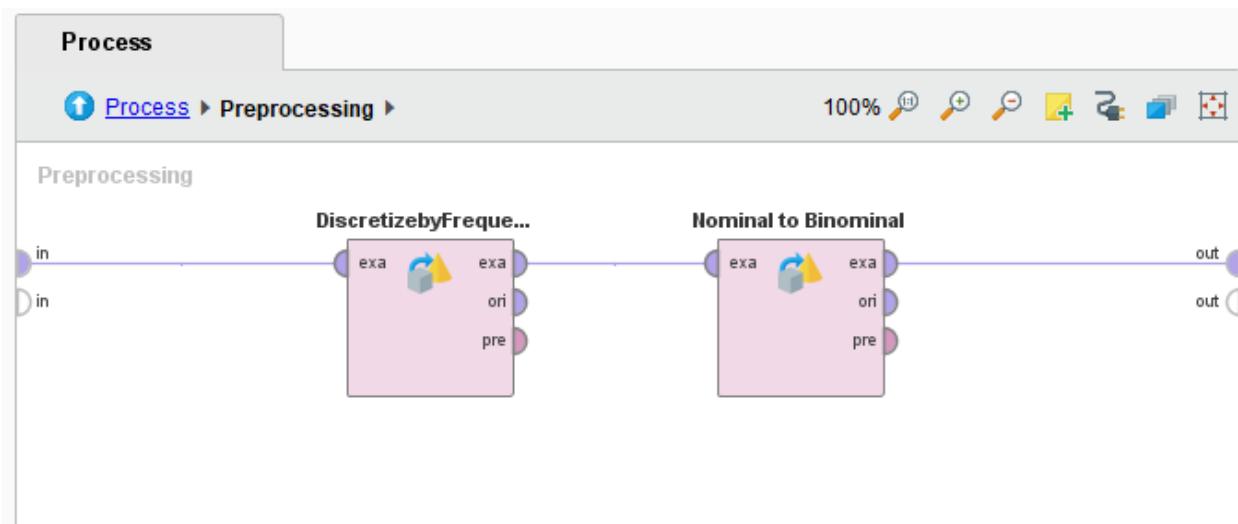
RuleModel

```
if Kelembaban_udara ≤ 82.500 then YA (1 / 6)
if Cuaca = Cerah then TIDAK (3 / 0)
if Cuaca = Mendung then YA (0 / 2)
if Suhu ≤ 70.500 then YA (0 / 1)
else TIDAK (0 / 0)

correct: 12 out of 13 training examples.
```





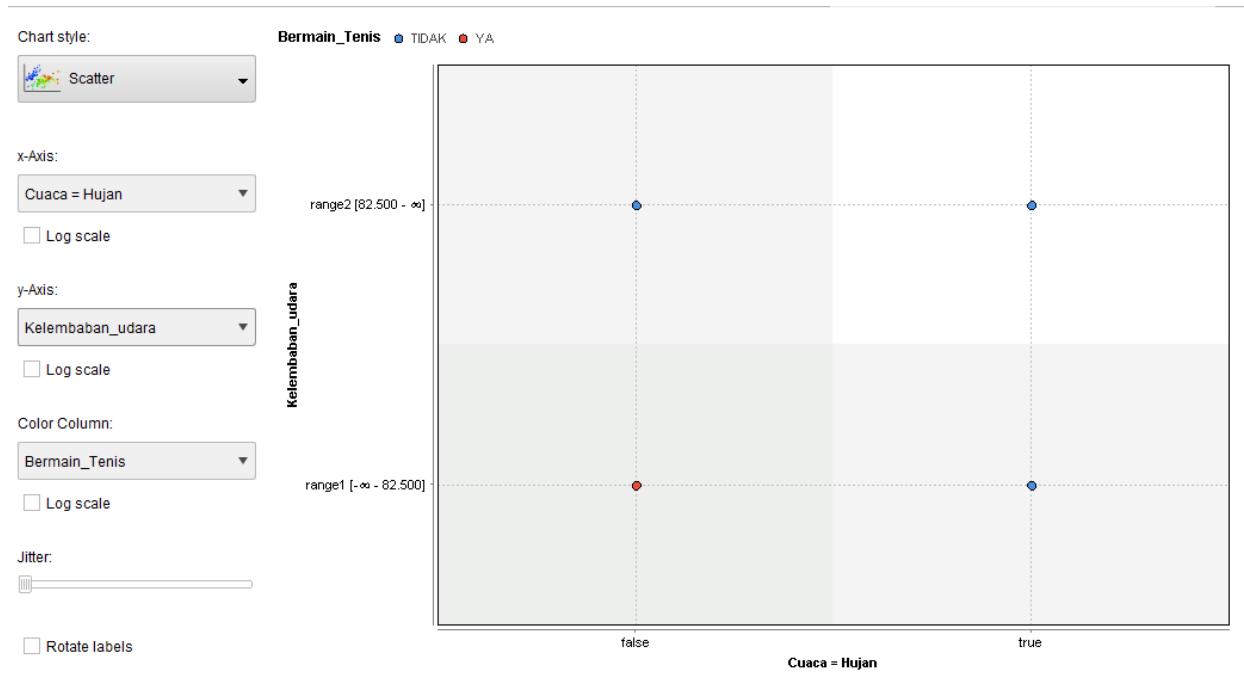
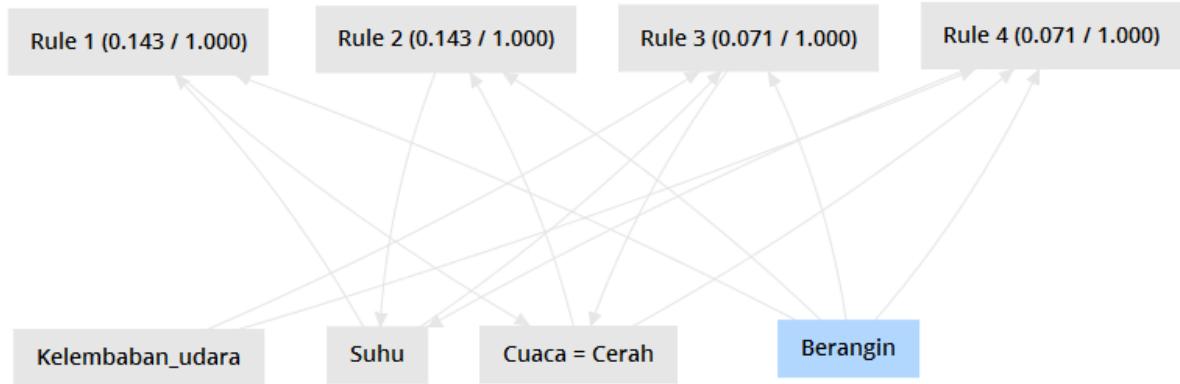


A. FREQUEN

FrequentItemSets (FP-Growth)		AssociationRules (Create Association Rules)		ExampleSet (Nominal to Binomial)	
No. of Sets: 26	Size	Support	Item 1	Item 2	Item 3
Total Max. Size: 4	1	0.500	Kelambaban_udara		
Min. Size: 1	1	0.429	Berangin		
Max. Size: 4	1	0.429	Suhu		
Contains Item:	1	0.357	Cuaca = Cerah		
	1	0.357	Cuaca = Hujan		
	1	0.286	Cuaca = Mendung		
	2	0.214	Kelambaban_udara	Berangin	
	2	0.214	Kelambaban_udara	Suhu	
	2	0.214	Kelambaban_udara	Cuaca = Cerah	
	2	0.143	Kelambaban_udara	Cuaca = Hujan	
	2	0.143	Kelambaban_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	

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

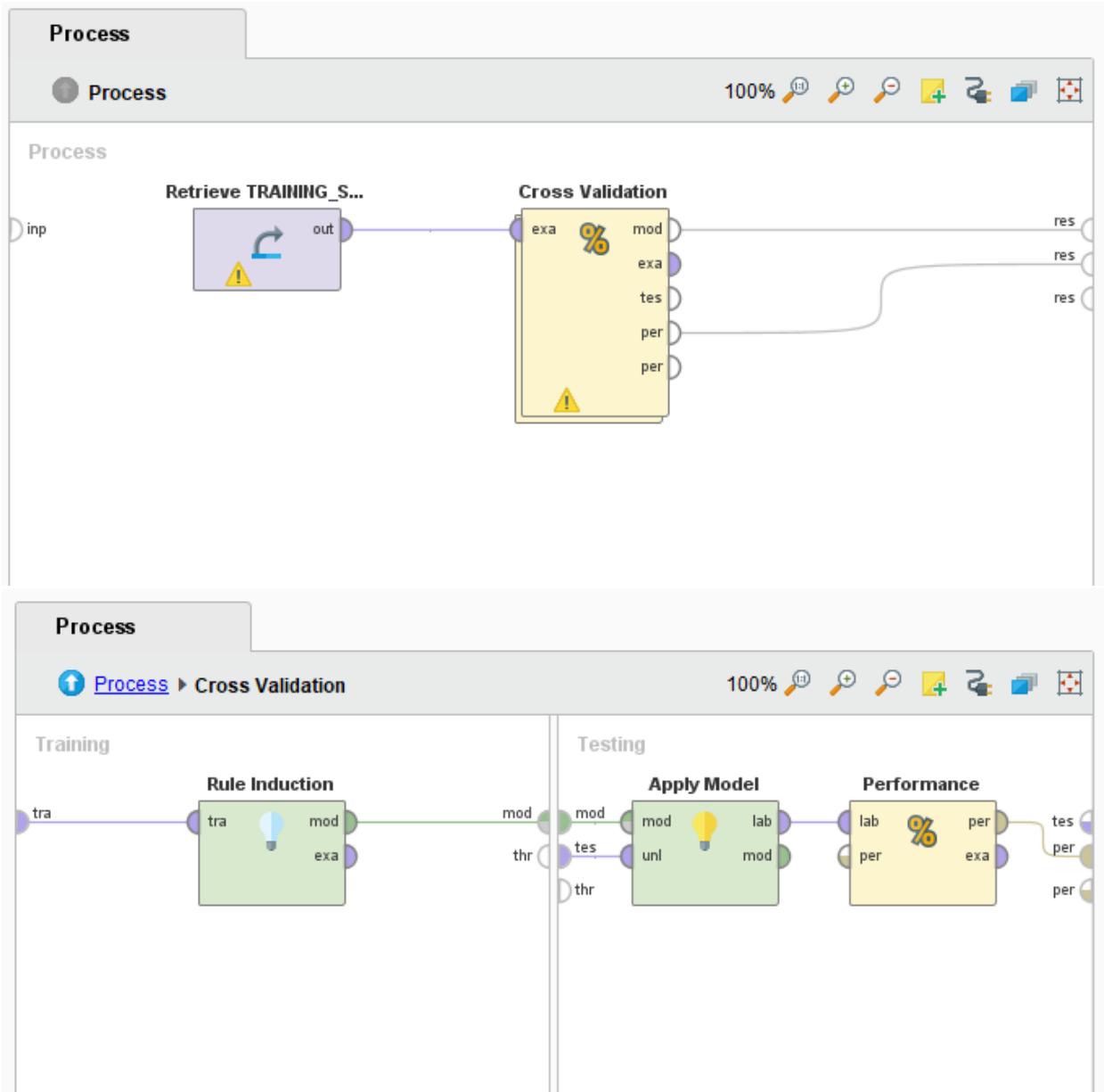
tion	Support	Confidence	LaPlace	Gain	p-s	Lift	Convicti...
= Cerah	0.143	1	1	-0.143	0.092	2.800	∞
	0.143	1	1	-0.143	0.082	2.333	∞
= Cerah	0.071	1	1	-0.071	0.046	2.800	∞
	0.071	1	1	-0.071	0.041	2.333	∞



TUGAS

ExampleSet (20 examples, 1 special attribute, 5 regular attributes)

Row No.	Lama_Studi	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
5	TEPAT	IPA	WANITA	SURAKARTA	17	TIDAK
6	TEPAT	IPA	WANITA	LUAR	18	YA
7	TERLAMBAT	IPA	PRIA	SURAKARTA	18	TIDAK
8	TEPAT	IPA	PRIA	SURAKARTA	19	TIDAK
9	TERLAMBAT	IPS	PRIA	LUAR	18	TIDAK
10	TEPAT	LAIN	WANITA	SURAKARTA	18	TIDAK
11	TEPAT	IPA	WANITA	SURAKARTA	19	TIDAK
12	TEPAT	IPS	PRIA	SURAKARTA	20	TIDAK
13	TEPAT	IPS	PRIA	SURAKARTA	19	TIDAK
14	TEPAT	IPA	PRIA	SURAKARTA	19	TIDAK
15	TEPAT	IPA	PRIA	LUAR	22	YA
16	TERLAMBAT	LAIN	PRIA	SURAKARTA	16	TIDAK
17	TEPAT	IPS	PRIA	LUAR	20	TIDAK
18	TEPAT	LAIN	PRIA	LUAR	23	YA
19	TEPAT	IPA	PRIA	SURAKARTA	21	YA
20	TERLAMBAT	IPS	PRIA	SURAKARTA	19	TIDAK



RuleModel

```

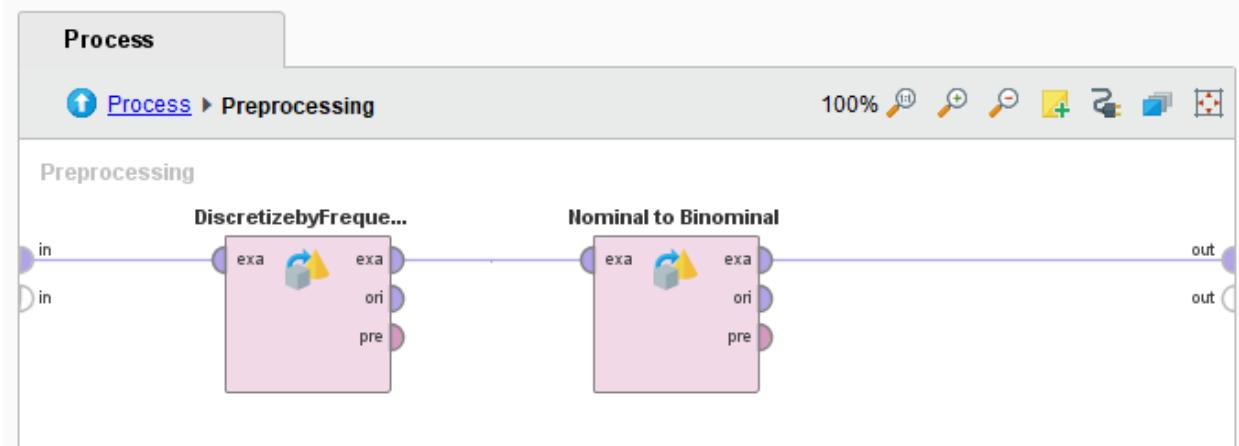
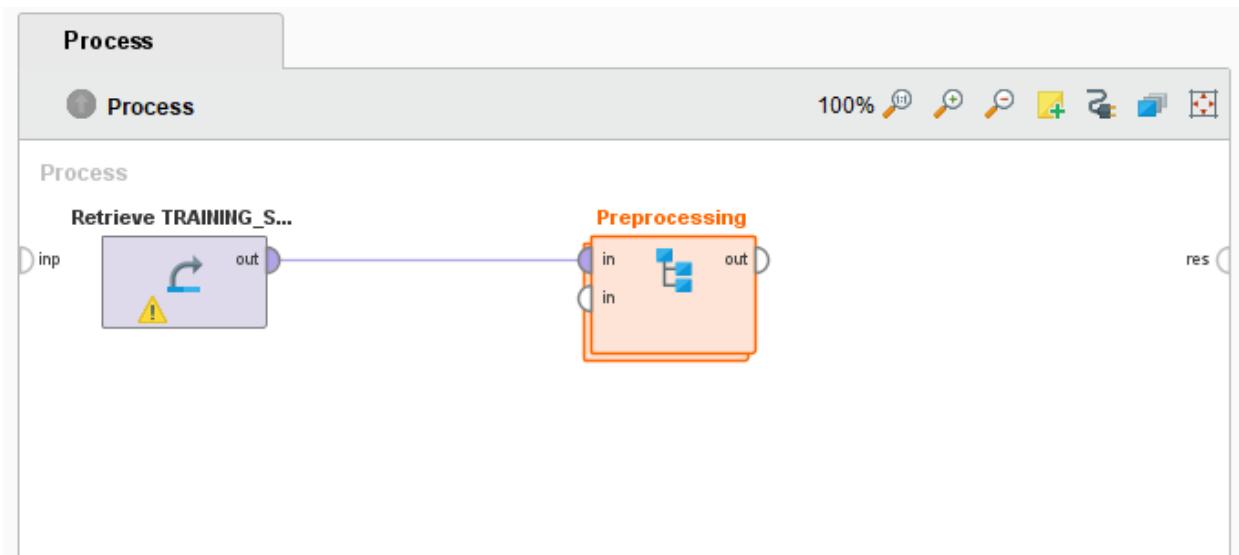
if Rerata_SKS > 18.500 then TEPAT  (2 / 10)
if Gender = PRIA then TERLAMBAT  (4 / 0)
if Jurusan_SMA = IPA then TEPAT  (0 / 2)
if Jurusan_SMA = IPS then TERLAMBAT  (1 / 0)
else TEPAT  (0 / 0)
  
```

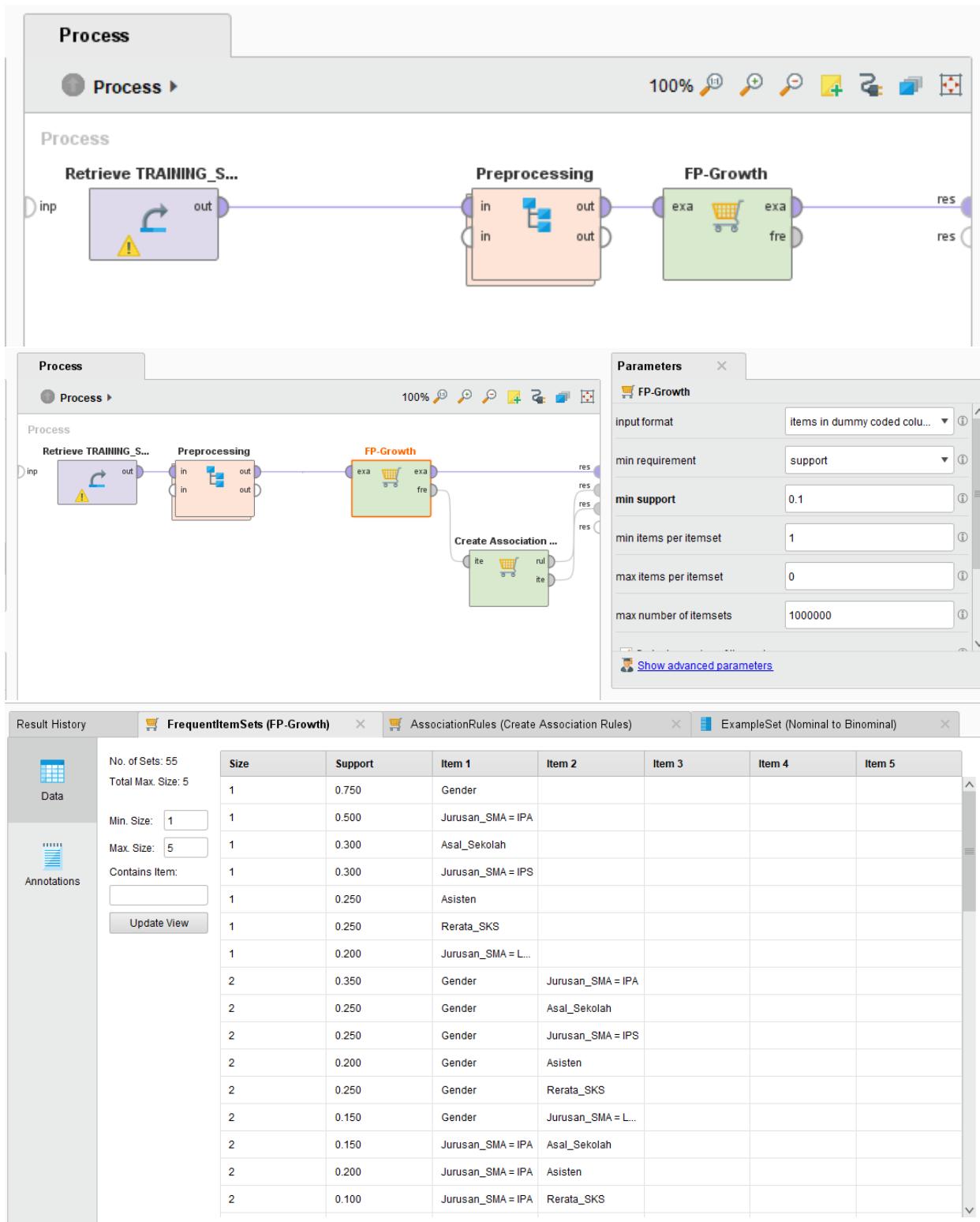
correct: 17 out of 19 training examples.

Table View Plot View

accuracy: 65.00% +/- 32.02% (micro average: 65.00%)

	true TERLAMBAT	true TEPAT	class precision
pred. TERLAMBAT	4	4	50.00%
pred. TEPAT	3	9	75.00%
class recall	57.14%	69.23%	





FrequentItemSets (FP-Growth)
AssociationRules (Create Association Rules)
ExampleSet (Nominal to Binomial)

No. of Sets: 55
Total Max. Size: 5

Min. Size:
Max. Size:
Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
2	0.100	Asal_Sekolah	Jurusan_SMA = IPS			
2	0.150	Asal_Sekolah	Asisten			
2	0.150	Asal_Sekolah	Rerata_SKS			
2	0.050	Asal_Sekolah	Jurusan_SMA = L...			
2	0.100	Jurusan_SMA = IPS	Rerata_SKS			
2	0.150	Asisten	Rerata_SKS			
2	0.050	Asisten	Jurusan_SMA = L...			
2	0.050	Rerata_SKS	Jurusan_SMA = L...			
3	0.100	Gender	Jurusan_SMA = IPA	Asal_Sekolah		
3	0.150	Gender	Jurusan_SMA = IPA	Asisten		
3	0.100	Gender	Jurusan_SMA = IPA	Rerata_SKS		
3	0.100	Gender	Asal_Sekolah	Jurusan_SMA = IPS		
3	0.100	Gender	Asal_Sekolah	Asisten		
3	0.150	Gender	Asal_Sekolah	Rerata_SKS		
3	0.050	Gender	Asal_Sekolah	Jurusan_SMA = L...		
3	0.100	Gender	Jurusan_SMA = IPS	Rerata_SKS		

No. of Sets: 55
Total Max. Size: 5

Min. Size:
Max. Size:
Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
3	0.150	Gender	Asisten	Rerata_SKS		
3	0.050	Gender	Asisten	Jurusan_SMA = L...		
3	0.050	Gender	Rerata_SKS	Jurusan_SMA = L...		
3	0.100	Jurusan_SMA = IPA	Asal_Sekolah	Asisten		
3	0.050	Jurusan_SMA = IPA	Asal_Sekolah	Rerata_SKS		
3	0.100	Jurusan_SMA = IPA	Asisten	Rerata_SKS		
3	0.050	Asal_Sekolah	Jurusan_SMA = IPS	Rerata_SKS		
3	0.100	Asal_Sekolah	Asisten	Rerata_SKS		
3	0.050	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = L...		
3	0.050	Asisten	Rerata_SKS	Jurusan_SMA = L...		
4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	
4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Rerata_SKS	
4	0.100	Gender	Jurusan_SMA = IPA	Asisten	Rerata_SKS	
4	0.050	Gender	Asal_Sekolah	Jurusan_SMA = IPS	Rerata_SKS	
4	0.100	Gender	Asal_Sekolah	Asisten	Rerata_SKS	

No. of Sets: 55
Total Max. Size: 5

Min. Size: 1
Max. Size: 5
Contains Item:

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
3	0.100	Asal_Sekolah	Asisten	Rerata_SKS		
3	0.050	Asal_Sekolah	Asisten	Jurusan_SMA = L...		
3	0.050	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = L...		
3	0.050	Asisten	Rerata_SKS	Jurusan_SMA = L...		
4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	
4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Rerata_SKS	
4	0.100	Gender	Jurusan_SMA = IPA	Asisten	Rerata_SKS	
4	0.050	Gender	Asal_Sekolah	Jurusan_SMA = IPS	Rerata_SKS	
4	0.100	Gender	Asal_Sekolah	Asisten	Rerata_SKS	
4	0.050	Gender	Asal_Sekolah	Asisten	Jurusan_SMA = L...	
4	0.050	Gender	Asisten	Rerata_SKS	Jurusan_SMA = L...	
4	0.050	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	Rerata_SKS	
4	0.050	Asal_Sekolah	Asisten	Rerata_SKS	Jurusan_SMA = L...	
5	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	Rerata_SKS
5	0.050	Gender	Asal_Sekolah	Asisten	Rerata_SKS	Jurusan_SMA = L...

Show rules matching

▾

Gender
Jurusan_SMA = IPA
Asal_Sekolah
Asisten
Rerata_SKS

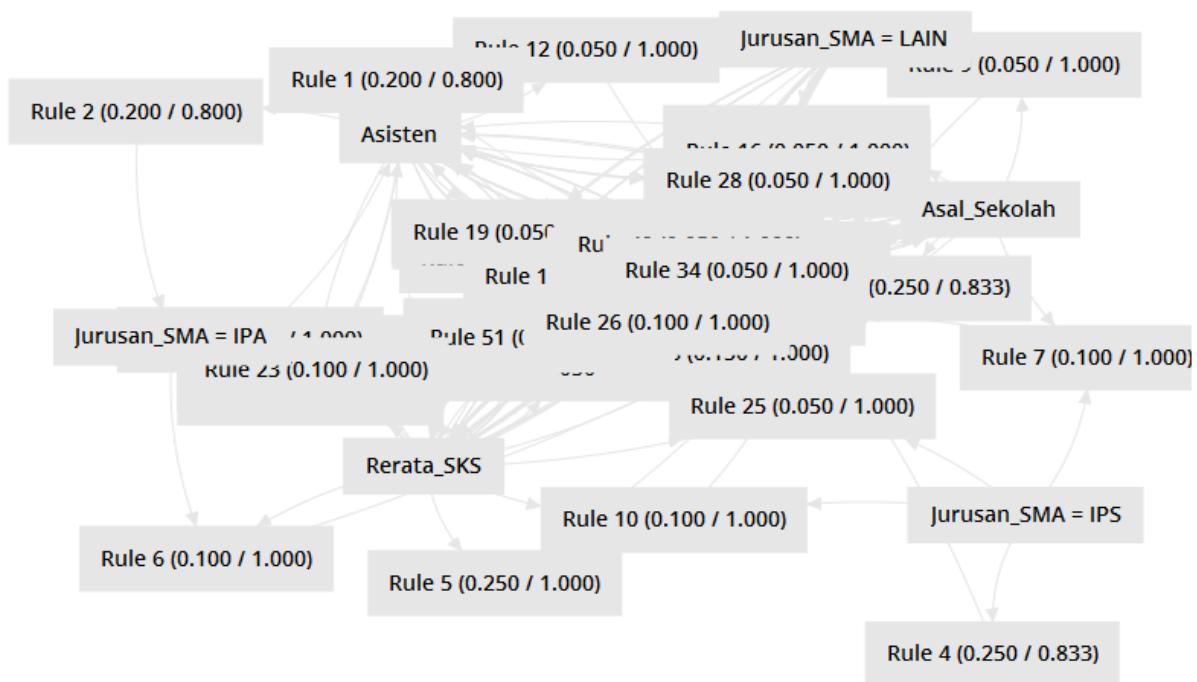
Min. Criterion:

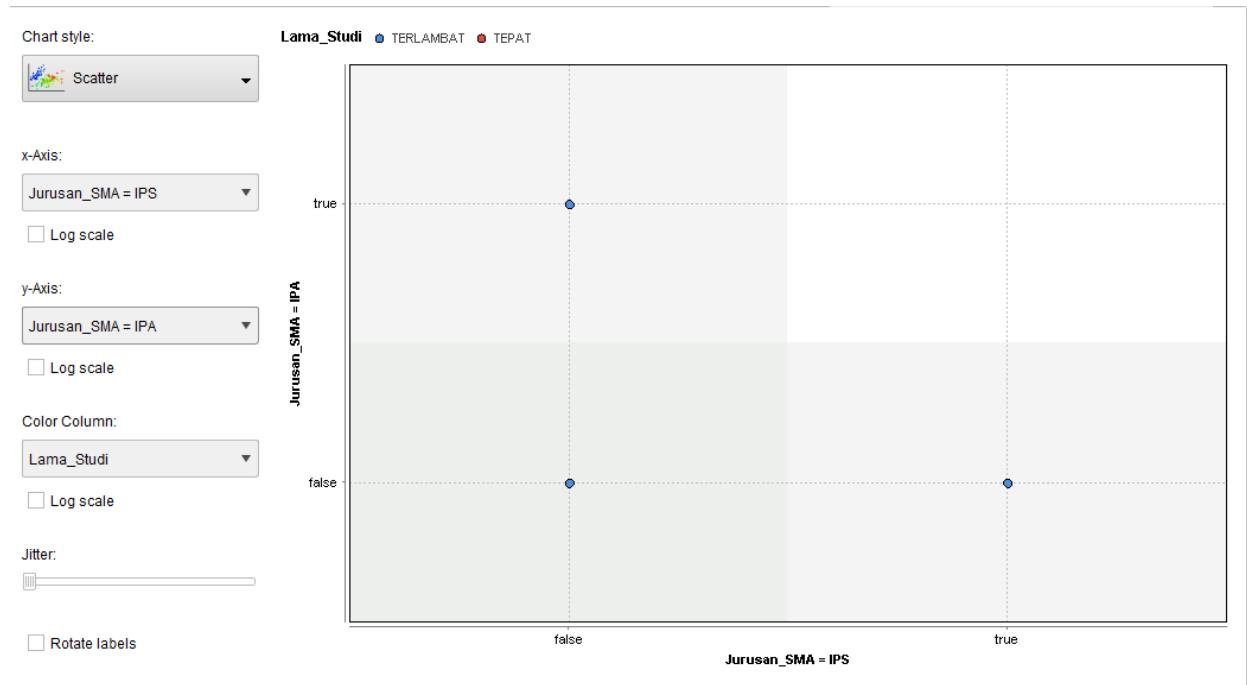
▾

Min. Criterion Value:

No.	Premises	Conclusion	Support	Confidence
3	Asal_Sekolah	Gender	0.250	0.8
4	Jurusan_SMA = IPS	Gender	0.250	0.8
5	Rerata_SKS	Gender	0.250	1
6	Jurusan_SMA = IPA, Rerata_SKS	Gender	0.100	1
7	Asal_Sekolah, Jurusan_SMA = IPS	Gender	0.100	1
8	Asal_Sekolah, Rerata_SKS	Gender	0.150	1
9	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.050	1
10	Jurusan_SMA = IPS, Rerata_SKS	Gender	0.100	1
11	Asisten, Rerata_SKS	Gender	0.150	1
12	Asisten, Jurusan_SMA = LAIN	Gender	0.050	1
13	Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1
14	Jurusan_SMA = IPA, Rerata_SKS	Asisten	0.100	1
15	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten	0.050	1
16	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1
17	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1
18	Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1

	Support	Confidence	LaPlace	Gain	p-s	Lift	Convicti...
	0.250	0.833	0.962	-0.350	0.025	1.111	1.500
	0.250	0.833	0.962	-0.350	0.025	1.111	1.500
	0.250	1	1	-0.250	0.062	1.333	∞
	0.100	1	1	-0.100	0.025	1.333	∞
	0.100	1	1	-0.100	0.025	1.333	∞
	0.150	1	1	-0.150	0.038	1.333	∞
	0.050	1	1	-0.050	0.012	1.333	∞
	0.100	1	1	-0.100	0.025	1.333	∞
	0.150	1	1	-0.150	0.038	1.333	∞
	0.050	1	1	-0.050	0.012	1.333	∞
	0.050	1	1	-0.050	0.012	1.333	∞
	0.100	1	1	-0.100	0.075	4	∞
	0.050	1	1	-0.050	0.038	4	∞
	0.050	1	1	-0.050	0.035	3.333	∞
	0.050	1	1	-0.050	0.038	4	∞
	0.050	1	1	-0.050	0.035	3.333	∞





MODUL 12

Kegiatan 1

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

NO_SISWA polynomial id	NAMA polynomial	LAMA BELAJAR (JAM) integer	NILAI integer
1 S-101	JOKO	15	783
2 S-102	AGUS	18	877
3 S-103	SUSI	7	505
4 S-104	DYAH	9	860
5 S-105	WATI	15	968
6 S-106	IKA	17	793
7 S-107	EKO	10	752
8 S-108	YANTO	5	571
9 S-109	WAWAN	8	667
10 S-110	MAHMUD	15	723

no problems.

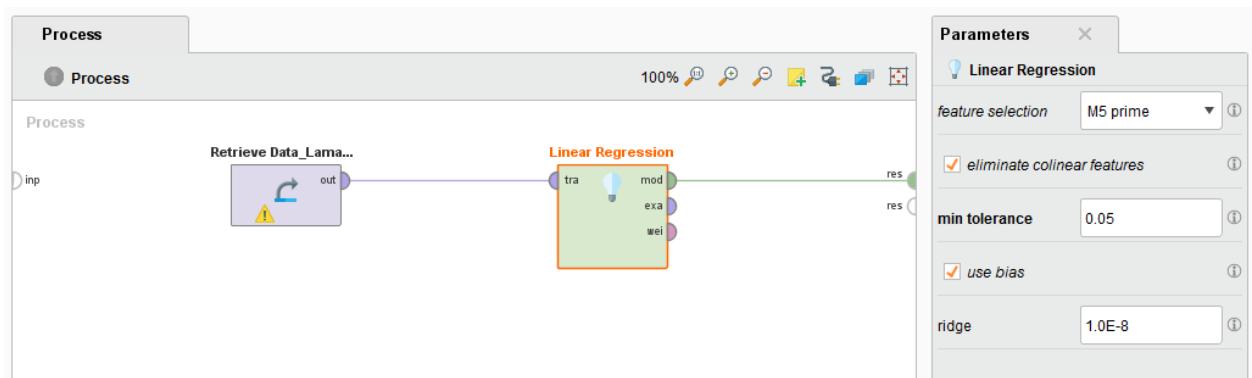
Previous Next Cancel

Open in

Turbo Prep

Auto Model

Row No.	NO_SISWA	NILAI	LAMA BELA...
1	S-101	783	15
2	S-102	877	18
3	S-103	505	7
4	S-104	860	9
5	S-105	968	15
6	S-106	793	17
7	S-107	752	10
8	S-108	571	5
9	S-109	667	8
10	S-110	723	15



Attribute	Coefficient	Std. Error	Std. Coeffici...	Tolerance	t-Stat	p-Value	Code
LAMA BELAJA...	21.608	7.645	0.707	1	2.827	0.022	**
(Intercept)	492.769	96.909	?	?	5.085	0.001	****

Linear Regression

$$21.608 * \text{LAMA BELAJAR (JAM)} + 492.769$$

NO_SISWA	NAMA	LAMA BELAJAR (JAM)	NILAI	Y
S-101	JOKO	15	783	816.889
S-102	AGUS	18	877	881.713
S-103	SUSI	7	505	644.025
S-104	DYAH	9	860	687.241
S-105	WATI	15	968	816.889
S-106	IKA	17	793	860.105
S-107	EKO	10	752	708.849
S-108	YANTO	5	571	600.809
S-109	WAWAN	8	667	665.633
S-110	MAHMUD	15	723	816.889

Kegiatan2

Import Data - Format your columns.

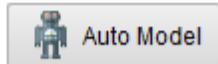
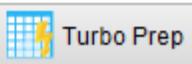
Replace errors with missing values ①

NO_SISWA <i>polynomial</i> <i>id</i>	NAMA <i>polynomial</i>	LAMA BELAJAR (JAM) <i>integer</i>
1 S-111	BUDI	12
2 S-112	SANTI	13
3 S-113	DIAN	14
4 S-114	DANI	11
5 S-115	AHMAD	5
6 S-116	BAYU	13
7 S-117	RISA	9
8 S-118	RANI	10
9 S-119	YANI	10
10 S-120	RATIH	9

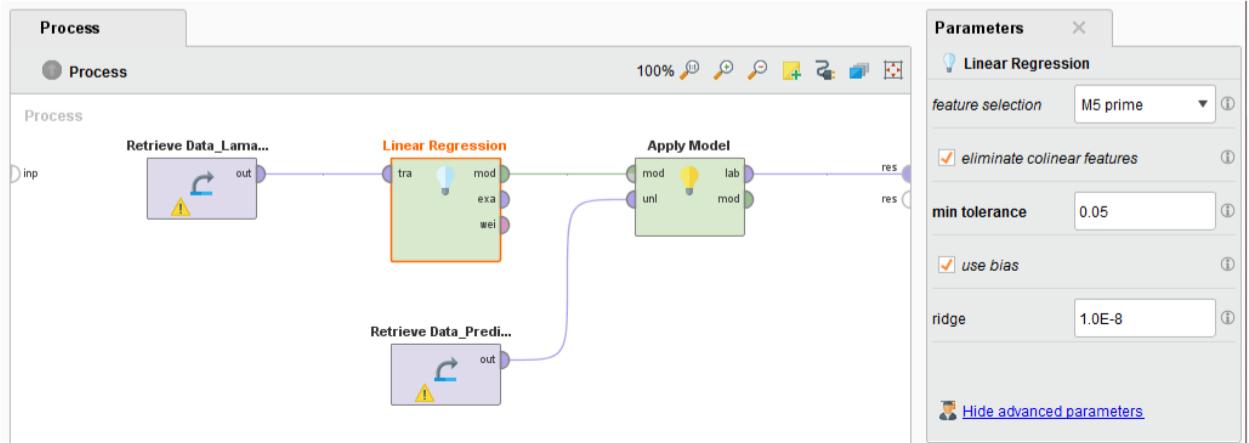
 no problems.

 [Previous](#)  [Next](#)  [Cancel](#)

Open in



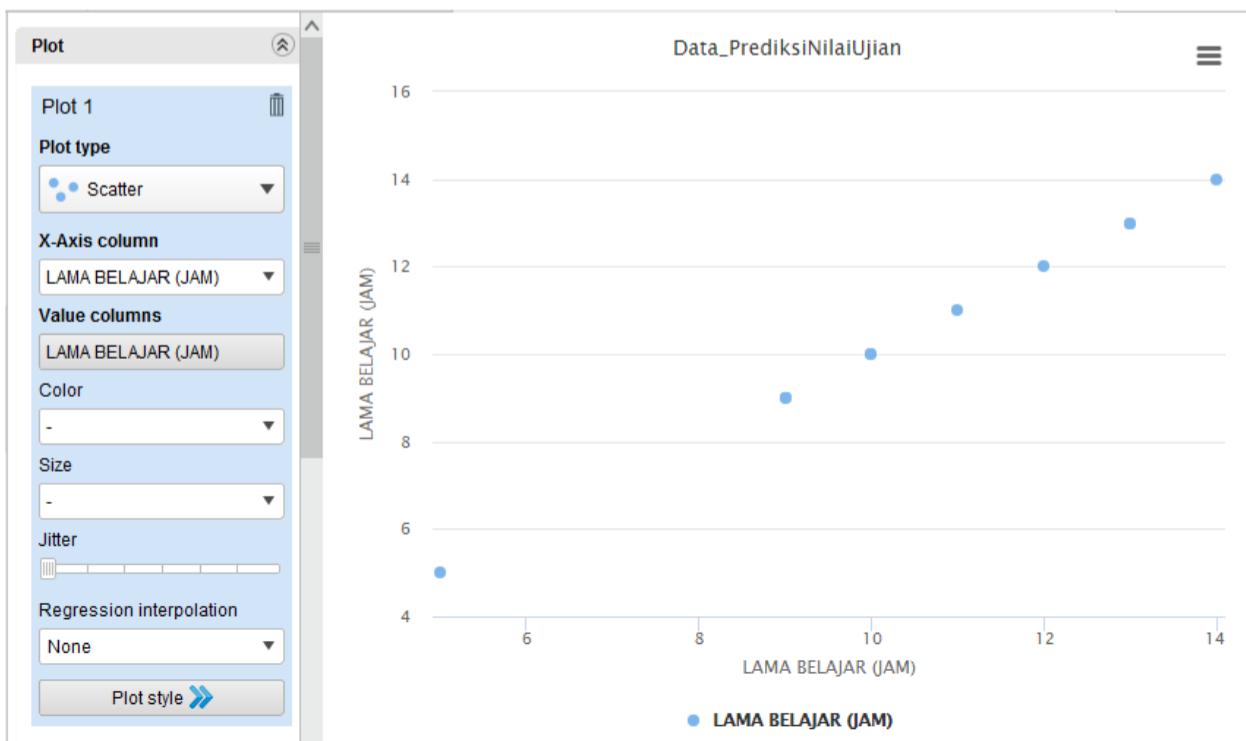
Row No.	NO_SISWA	LAMA BELA...
1	S-111	12
2	S-112	13
3	S-113	14
4	S-114	11
5	S-115	5
6	S-116	13
7	S-117	9
8	S-118	10
9	S-119	10
10	S-120	9



Open in [Turbo Prep](#)

[!\[\]\(4045b1beb079b18f7753b014534e8e7d_img.jpg\) Auto Model](#)

Row No.	NO_SISWA	prediction(No...)	LAMA BELA...
1	S-111	752.061	12
2	S-112	773.668	13
3	S-113	795.276	14
4	S-114	730.453	11
5	S-115	600.807	5
6	S-116	773.668	13
7	S-117	687.238	9
8	S-118	708.845	10
9	S-119	708.845	10
10	S-120	687.238	9



NO_SISWA	NAMA	LAMA BELAJAR (JAM)	Tabel	Model Regresi
S-111	BUDI	12	752.061	752.065
S-112	SANTI	13	773.668	773.673
S-113	DIAN	14	795.276	795.281
S-114	DANI	11	730.453	730.457
S-115	AHMAD	5	600.807	600.809
S-116	BAYU	13	773.668	773.673
S-117	RISA	9	687.238	687.241
S-118	RANI	10	708.845	708.849
S-119	YANI	10	708.845	708.849
S-120	RATIH	9	687.238	687.241

Tugas1

File Options Settings Extensions Help

Import Data - Format your columns.

Format your columns.

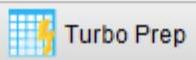
Replace errors with missing values ⓘ

NO. RESPONDEN integer id	PENDAPATAN (RUPIAH) integer	JUMLAH ANGGOTA K... integer	DAYA BELI (RUPIAH) integer label
1 1	1000000	6	834000
2 2	1400000	7	1200000
3 3	200000	3	134000
4 4	1400000	6	1167000
5 5	500000	3	334000
6 6	1700000	5	1360000
7 7	400000	3	267000
8 8	1900000	5	1520000
9 9	300000	3	200000
10 10	500000	4	375000
11 11	700000	7	600000
12 12	1900000	3	1267000
13 13	800000	4	600000

no problems.

◀ Previous ▶ Next ✖ Cancel

Open in



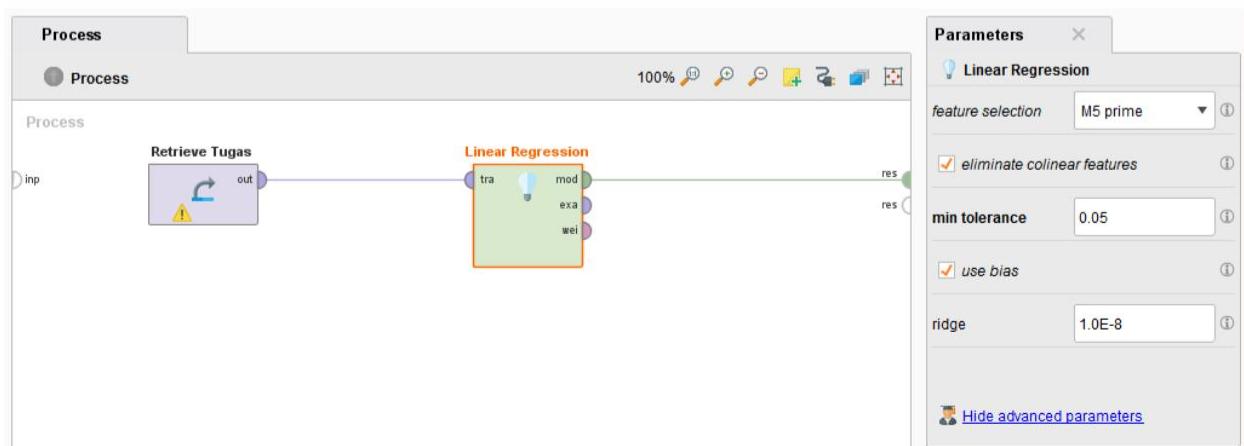
Turbo Prep



Auto Model

Row No.	NO. RESPON...	DAYA BELI (...)	PENDAPATA...	JUMLAH AN...
1	1	834000	1000000	6
2	2	1200000	1400000	7
3	3	134000	200000	3
4	4	1167000	1400000	6
5	5	334000	500000	3
6	6	1360000	1700000	5
7	7	267000	400000	3
8	8	1520000	1900000	5
9	9	200000	300000	3
10	10	375000	500000	4
11	11	600000	700000	7
12	12	1267000	1900000	3
13	13	600000	800000	4

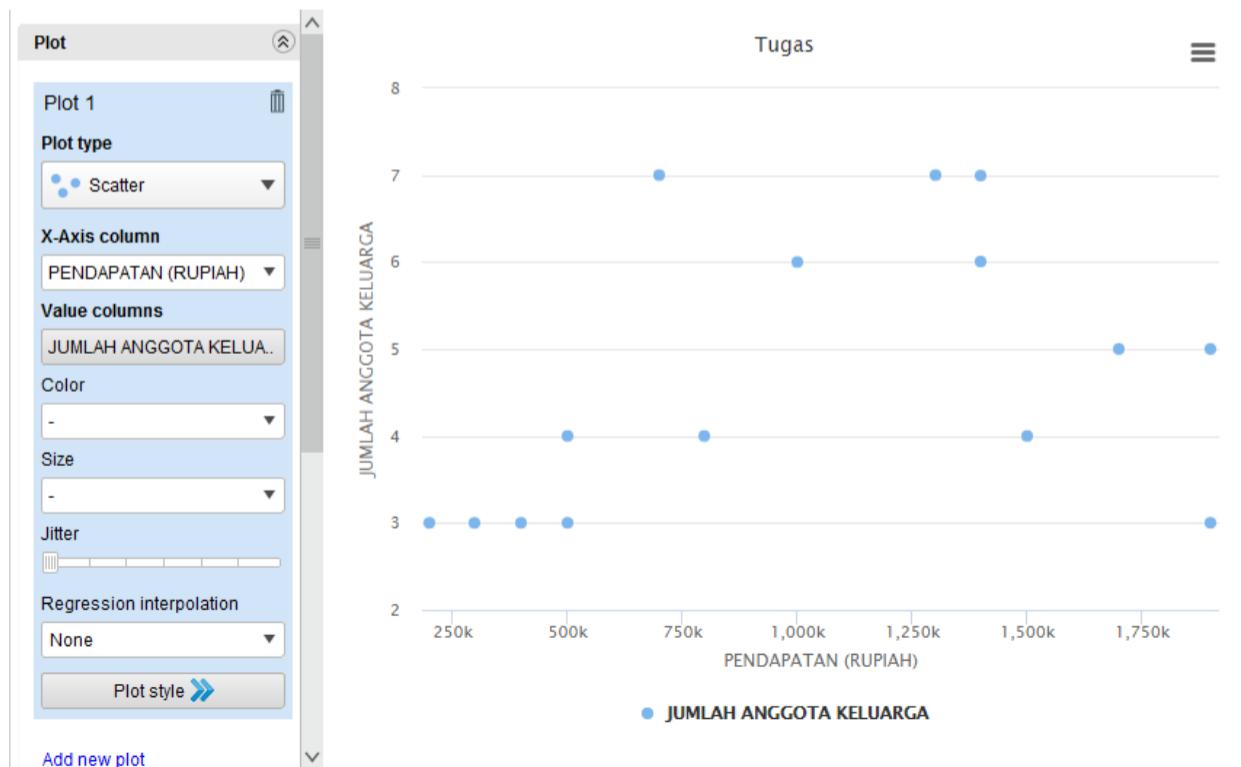
ExampleSet (15 examples, 2 special attributes, 2 regular attributes)



Attribute	Coefficient	Std. Error	Std. Coeffici...	Tolerance	t-Stat	p-Value	Code
PENDAPATAN...	0.739	0.021	0.924	0.857	35.037	0.000	****
JUMLAH ANG...	47807.624	7833.319	0.161	0.857	6.103	0.000	****
(Intercept)	-180222.487	36497.284	?	?	-4.938	0.000	****

LinearRegression

0.739 * PENDAPATAN (RUPIAH)
 + 47807.624 * JUMLAH ANGGOTA KELUARGA
 - 180222.487



Tugas2

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

NO. RESPONDEN	PENDAPATAN (RUPIAH)	JUMLAH ANGGOTA KELUARGA
1	900000	5
2	800000	3
3	500000	2
4	1900000	6
5	600000	2
6	800000	5
7	1000000	6
8	1100000	4
9	1000000	4
10	500000	3

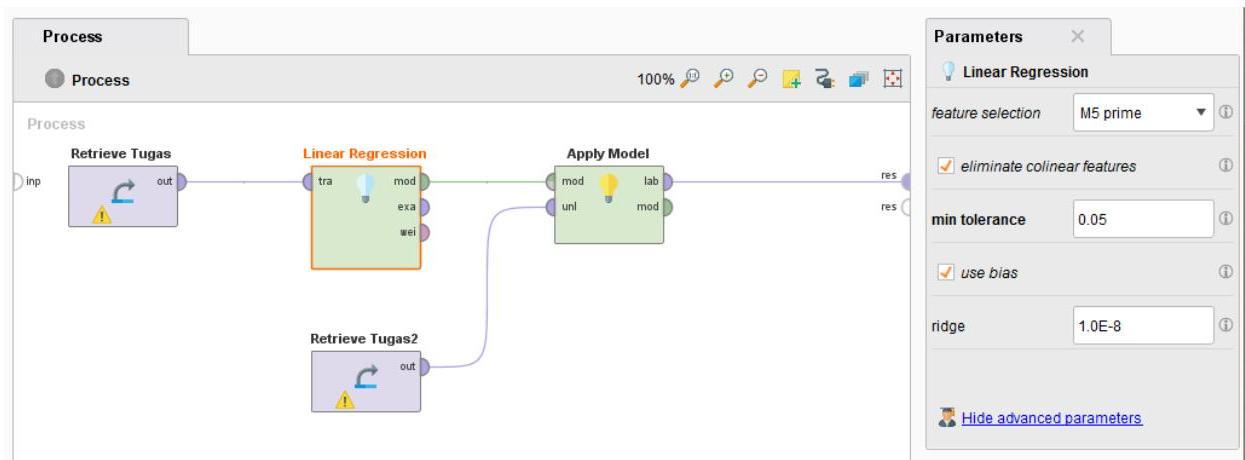
 no problems.

 Previous  Next  Cancel

[Open in](#)

Turbo Prep

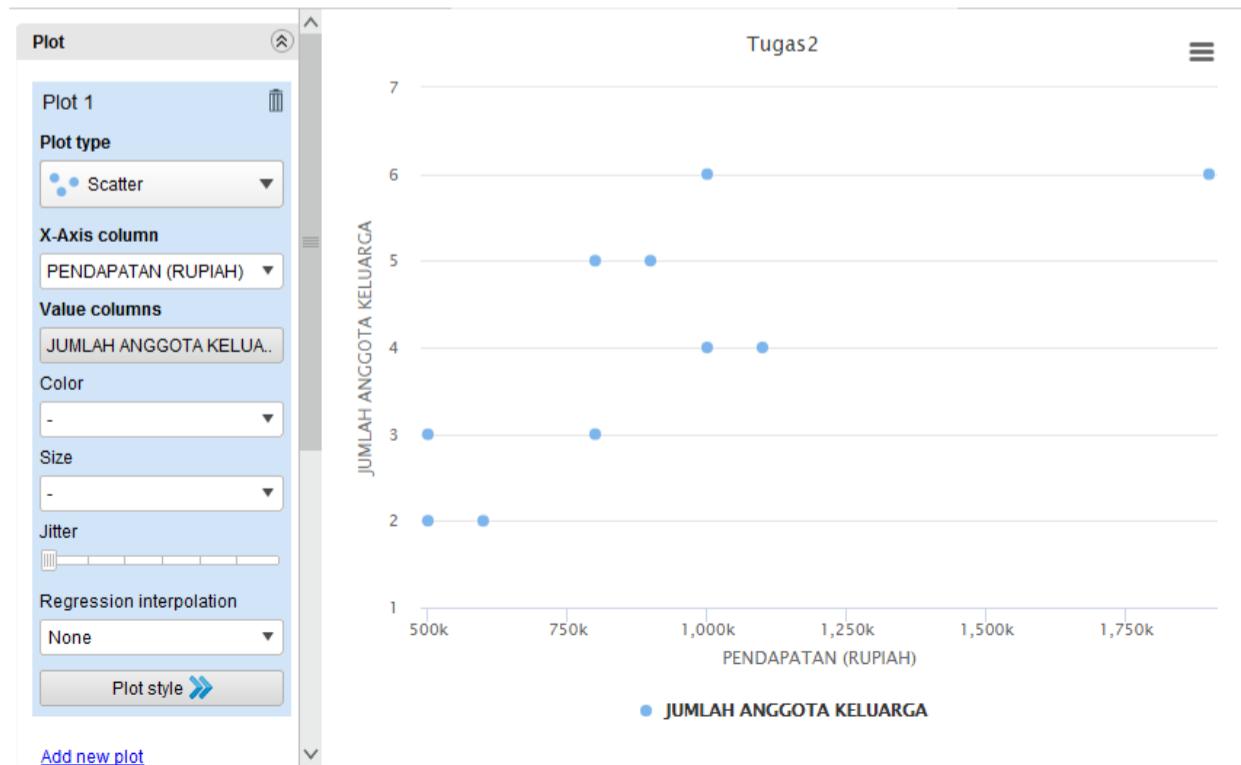
Row No.	NO. RESPON...	JUMLAH AN...	PENDAPATA...
1	1	5	900000
2	2	3	800000
3	3	2	500000
4	4	6	1900000
5	5	2	600000
6	6	5	800000
7	7	6	1000000
8	8	4	1100000
9	9	4	1000000
10	10	3	500000



Open in  Turbo Prep

 Auto Model

Row No.	NO. RESPON...	JUMLAH AN...	prediction(D...)	PENDAPATA...
1	1	5	723933.263	900000
2	2	3	554416.056	800000
3	3	2	284902.556	500000
4	4	6	1510760.476	1900000
5	5	2	358804.515	600000
6	6	5	650031.304	800000
7	7	6	845642.845	1000000
8	8	4	823929.557	1100000
9	9	4	750027.598	1000000
10	10	3	332710.179	500000



NO. RESPONDEN	PENDAPATAN (RUPIAH)	JUMLAH ANGGOTA KELUARGA	Y
1	900000	5	723915.633
2	800000	3	554400.385
3	500000	2	284892.761
4	1900000	6	1510723.257
5	600000	2	358792.761
6	800000	5	650015.633
7	1000000	6	845623.257
8	1100000	4	823908.009
9	1000000	4	750008.009
10	500000	3	332700.385