

PRAKTIKUM DWDM



disusun oleh :

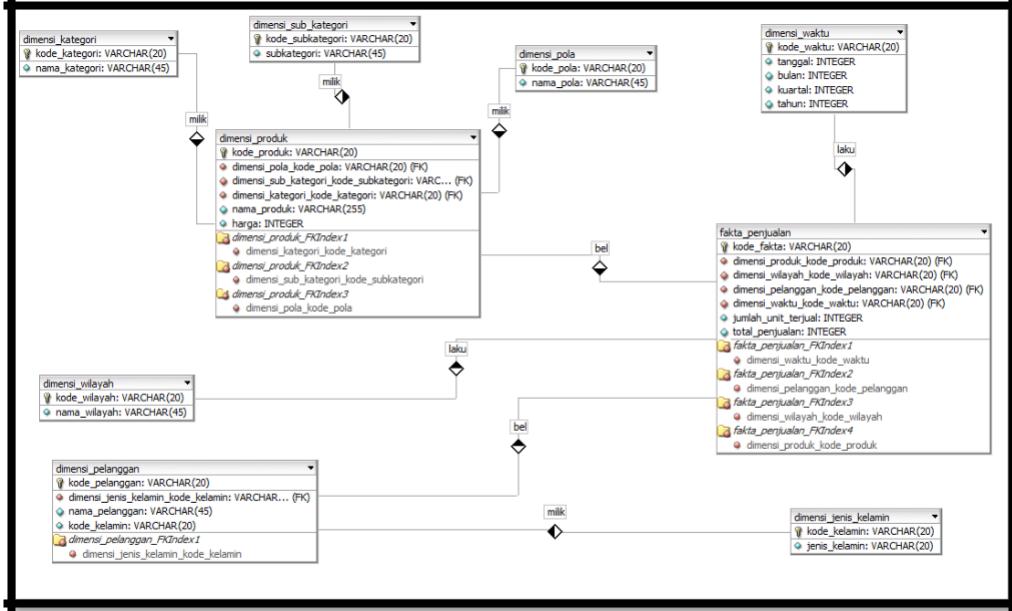
Dandung Rahmatdhan

L200170098

JURUSAN TEKNIK INFORMATIKA FAKULTAS
KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA

2019

MODUL 1



MODUL 5



Kegiatan

- Membuat tabel pada excel disimpan dengan nama “**Fakta_Penjualan.xls**”

The screenshot shows a Microsoft Excel spreadsheet titled "Sheet2". The data starts at row 1 and continues to row 21. The columns include "bulan", "kuartal", "tahun", "nama_produk", "nama_kategori", "nama_subkategori", "nama_pola", "nama_pelanggan", "jenis_kelamin", "nama_wilayah", "jumlah", and "harga". The "jumlah" column contains numerical values, while "harga" contains text values like "225000", "30000", etc.

- Pada Pivot Table Field List, menyusun layout field dengan urutan :

- Field **nama_subkategori** di kotak Row Labels
- Field **tahun** di kotak Column Labels
- Field **jumlah** di kotak Values

Dan akan menghasilkan suatu tabel dengan grouping field **nama_subkategori** pada bagian baris, field **tahun** pada kolom. Sedangkan nilai total **jumlah** ditempatkan pada cell-cell hasil perpotongan item grouping baris dan kolom tersebut.

The screenshot shows a Microsoft Excel spreadsheet with a PivotTable Fields dialog box open. The dialog box lists fields: nama_produk, nama_kategori, nama_subkategori, nama_pola, nama_pelanggan, jenis_kelamin, nama_wilayah, jumlah, and harga. The "jumlah" field is checked under "Choose fields to add to report". The PivotTable itself is located in the main worksheet area, showing a summary of "jumlah" by "tahun" and "nama_subkategori". The PivotTable has columns for "tahun" (2010, 2011, 2012, Grand Total) and "nama_subkategori" (Bahan, Balero, Batik, Celana, Hem, Jam, Jarik, Kaos, Rok, sarimbit). The "jumlah" field is used as the value for the cells in the PivotTable.

- Kemudian menambahkan field jumlah pada kotak values dan mensetting jumlah2 di values field setting dengan mengubah nilai sum menjadi count dan akan menghasilkan tabel seperti yang di bawah ini :

SEBELUM DIUBAH

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Column Labels													
	2010		2011		2012		Total Sum of jumlah		Total Sum of jumlah2					
	Sum of jumlah	Sum of jumlah2	Sum of jumlah	Sum of jumlah2	Sum of jumlah	Sum of jumlah2	Sum of jumlah	Sum of jumlah2	Sum of jumlah	Sum of jumlah2				
6 Bahan	1	1	8	8	8	8	17	17	17	17				
7 Balero			1	1			1	1	1	1				
8 Batik					1	1	1	1	1	1				
9 Celana	17	17			17	17	34	34						
10 Hem	5	5	8	8	4	4	17	17	17	17				
11 Jam					44	44	44	44	44	44				
12 Jarik		2	2	4	4	4	6	6	6	6				
13 Kaos		1	1	14	14	14	15	15	15	15				
14 Rok					1	1	1	1	1	1				
15 sarimbit		1	1				1	1	1	1				
16 Grand Total	23	23	21	21	93	93	137	137	137	137				
17														
18														
19														
20														
21														

SESUDAH DIUBAH

	A	B	C	D	E	F	G	H	I	J	K	L	M	N		
	2010						2011						2012			
	Sum of jumlah	Count of jumlah2	Total Sum of jumlah	Total Count of jumlah2												
6 Bahan	1	1	8	1	8	2	17	17	17	17	4					
7 Balero			1	1			1	1	1	1	1					
8 Batik					1	1	1	1	1	1	1					
9 Celana	17	1			17	1	3	3	3	3	2					
10 Hem	5	1	8	2	4	2	17	17	17	17	5					
11 Jam		2	1	4	1	1	44	44	44	44	1					
12 Jarik		1	1	14	14	1	1	1	1	1	2					
13 Kaos					1	1	1	1	1	1	2					
14 Rok							1	1	1	1	1					
15 sarimbit		1	1								1					
16 Grand Total	23	3	21	7	93	10	13	13	13	13	20					
17																
18																
19																
20																
21																

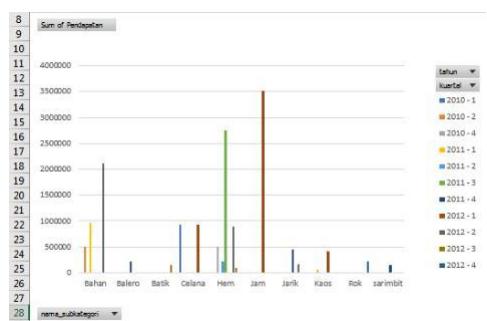
- Calculated Field, jika kita ingin mencari jumlah pendapatan yang diperoleh berdasarkan jumlah produk yang terjual dikalikan dengan harga produk menggunakan Pivot Table dengan menggunakan **Calculated Field**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	2010						2011						2012		
	Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of jumlah	Count of jumlah2	Sum of Pendapatan	Sum of jumlah	Count of jumlah2	Total Sum of jumlah	Total Count of jumlah2	Total Sum of Pendapatan	
6 Bahan	1	1	500000	8	1	960000	8	2	2120000	17	4	15045000			
7 Balero		0	0	1	1	225000		0	0	1	1	225000			
8 Batik		0	0			0	1	1	150000		1	150000			
9 Celana	17	1	935000			0	0	17	935000		34	935000			
10 Hem	5	1	500000	8	2	4960000	4	0	1596000	17	4	19023000			
11 Jam		0				0	44	0	3520000	44	4	3520000			
12 Jarik		0	2	1	450000	4	160000	6			6	1590000			
13 Kaos		0	1	1	60000	14	420000	15			15	1350000			
14 Rok		0			0	1	225000	1			1	225000			
15 sarimbit		0	1	1	150000		0	1	0	0	1	150000			
16 Grand Total	23	3	15065000	21	7	29400000	93	3	115692000	137	20	451963000			
17															
18															
19															
20															
21															
22															
23															

- Operasi Roll Up dan Drill Down, digunakan untuk melihat data secara lebih rinci dan secara lebih umum berdasarkan kategori tertentu pada sebuah data, seperti gambar dibawah ini

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3	Sum of Pendapatan	Column Labels																								
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										
22																										
23																										
24																										

- Gambar dibawah menggunakan PivotChart yang merupakan sebuah cara untuk menampilkan cube dalam bentuk grafik.



➤ Tugas NO 1

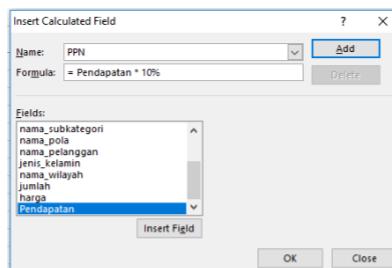
- Membuat PivotTable dan PivotChart baru

The screenshot shows the setup of a new PivotTable and PivotChart. The PivotTable Fields pane on the right lists various fields such as 'bulan', 'tahun', 'nama_produk', etc. The main area shows the initial structure of the PivotTable with columns A-P. A message 'To build a report, choose fields from the PivotTable Field List.' is displayed above the table. Below the table, another message 'To build a PivotChart, choose fields from the PivotChart Field List.' is shown, along with icons for a bar chart and a pie chart.

- Menambahkan field **nama_subkategori** ke kotak Row Labels dan field **tahun** ke kotak Column Labels dan tahun yang di gunakan hanya tahun 2012

- Menambahkan field Pendapatan pada kotak values

- Kemudian tambahkan field baru dengan cara “Insert Calculated Field” dengan nama PPN dan formulanya = Pendapatan * 10%. Dan klik OK



- Kemudian tambahkan field baru dengan cara “Insert Calculated Field” dengan nama **Total Penghasilan** dan formulanya = Pendapatan – PPN. Dan klik OK

Insert Calculated Field

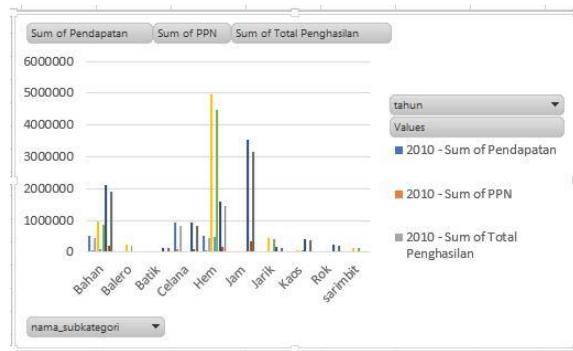
Name: Total Penghasilan
Formula: = Pendapatan - PPN

Fields:
nama_pola
nama_pelanggan
jenis_kelamin
nama_wilayah
jumlah
harga
Pendapatan
PPN

OK Close

NO 2

- PivotChart dari tahun 2010-2012



- PivotTable dari tahun 2010-2012

MODUL 6

MODUL 7



Kegiatan

1. Cuaca.arff

The screenshot shows the Visual Studio Code interface with a dark theme. The left sidebar has an 'EXPLORER' section with 'OPEN EDIT...' and 'NO FOLDER OPENED'. The main area shows the content of 'Cuaca.arff' with the following data:

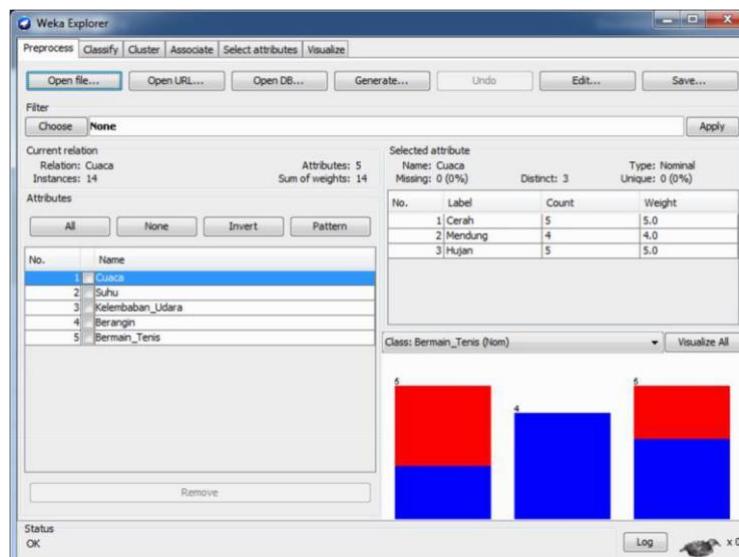
```
C > Users > LABSI-22 > Documents > Cuaca.arff
@relation Cuaca
@attribute Cuaca{Cerah, Mendung, Hujan}
@attribute Suhu real
@attribute Kelembaban_Udara real
@attribute Berangin{YA, TIDAK}
@attribute Bermain_Tenis{YA, TIDAK}

@data
Cerah,85.,85,TIDAK,TIDAK
Cerah,88.,90,YA,TIDAK
Mendung,83.,86,TIDAK,YA
Hujan,78.,96,TIDAK,YA
Hujan,68.,88,TIDAK,YA
Hujan,65.,78,YA,TIDAK
Mendung,64.,65,YA,YA
Cerah,72.,95,TIDAK,TIDAK
Cerah,69.,78,TIDAK,YA
Hujan,75.,88,TIDAK,YA
Cerah,75.,78,YA,YA
Mendung,72.,90,YA,YA
Mendung,81.,75,TIDAK,YA
Hujan,71.,91,YA,TIDAK
```

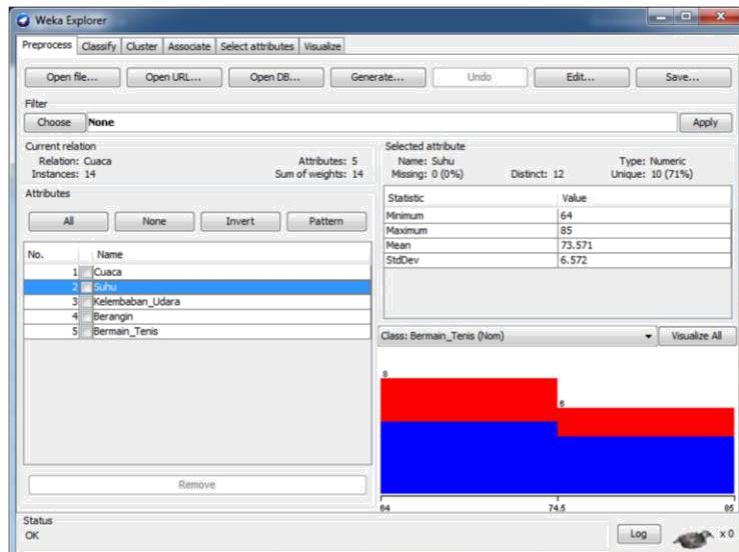
At the bottom right, there is a message: 'Restart Visual Studio Code to apply the latest update.' with buttons 'Update Now', 'Later', and 'Release Notes'. The status bar at the bottom shows 'Ln 23, Col 22' and other file details.

2. Gambar grafik dari WEKA

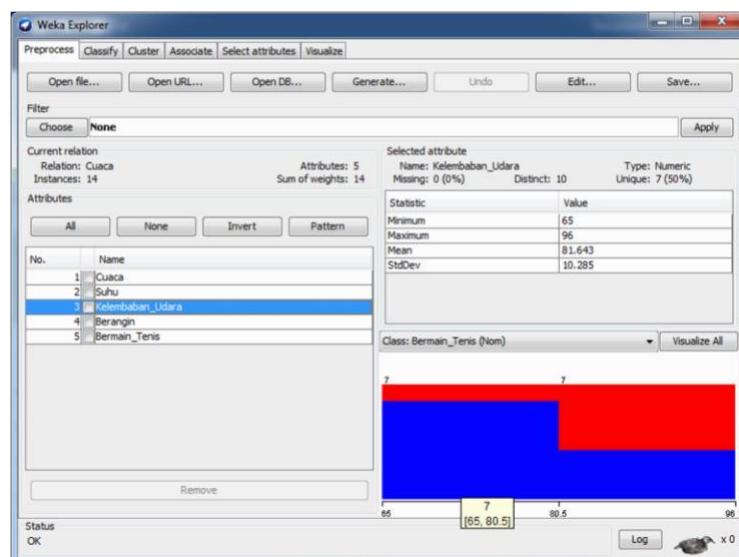
• Cuaca



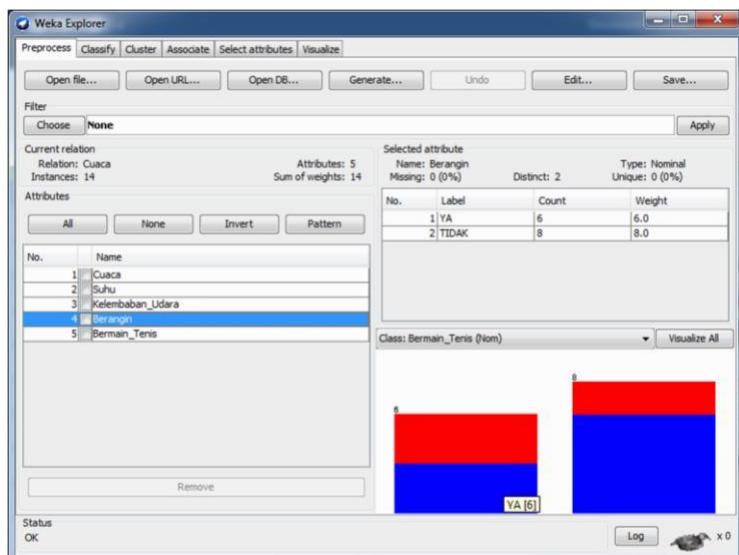
• Suhu



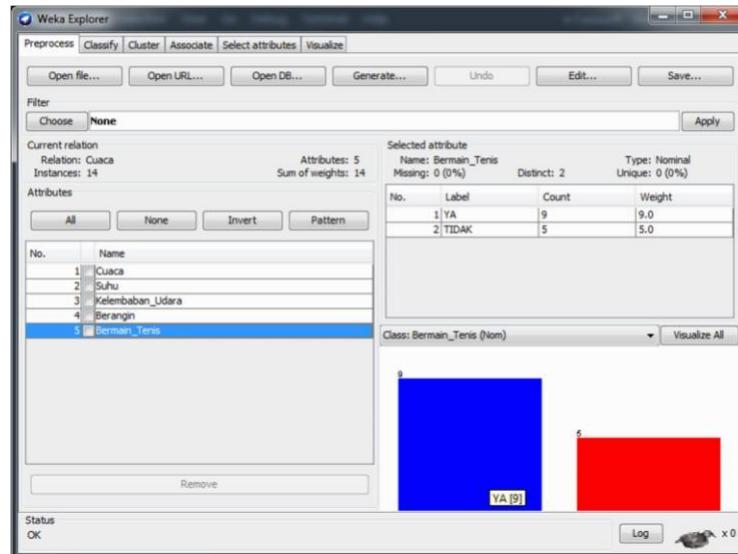
- Kelembaban_Udara



- Berangin



- Bermain_Tenis



Tugas

1. Tugas.arff

```

File Edit Selection View Go Debug Terminal Help Tugas.arff - Visual Studio Code

EXPLORER C:\Users\LABSI-22\Documents\tugas.arff
OPEN EDIT... 1 UNSAVED
  Welcome
  Cuaca.arff C:\Users...
  Tugas.arff C:\Users...
NO FOLDER OPENED
You have not yet opened a folder.
Open Folder

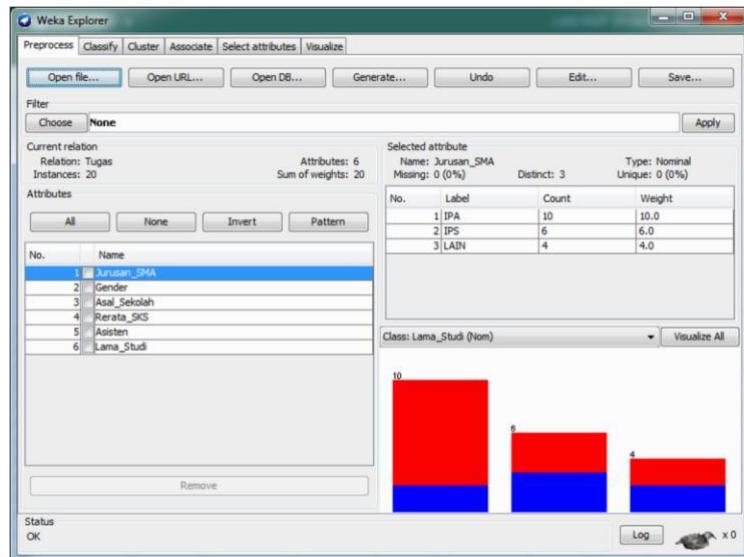
C:\Users\LABSI-22\Documents> Tugas.arff
1  @relation Tugas
2
3  @attribute Jurusan_SMA(IPA, IPS, LAIN)
4  @attribute Gender(WANITA, PRIA)
5  @attribute Asal_Sekolah(SURAKARTA, LUAR)
6  @attribute Rerata_SKS real
7  @attribute Asisten(YA, TIDAK)
8  @attribute Lama_Studi(TERLAMBAT, TEPAT)
9
10 @data
11 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

```

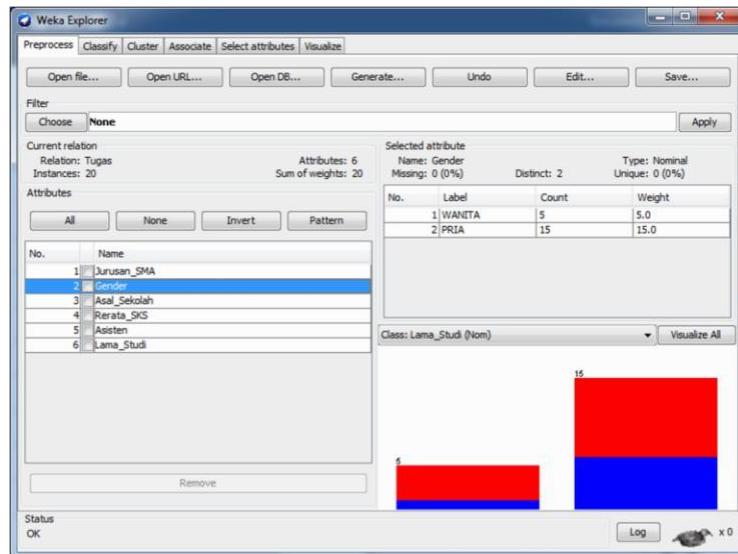
Ln 31, Col 1 Spaces: 4 UTF-8 CRLF Plain Text

2. Hasil dari WEKA

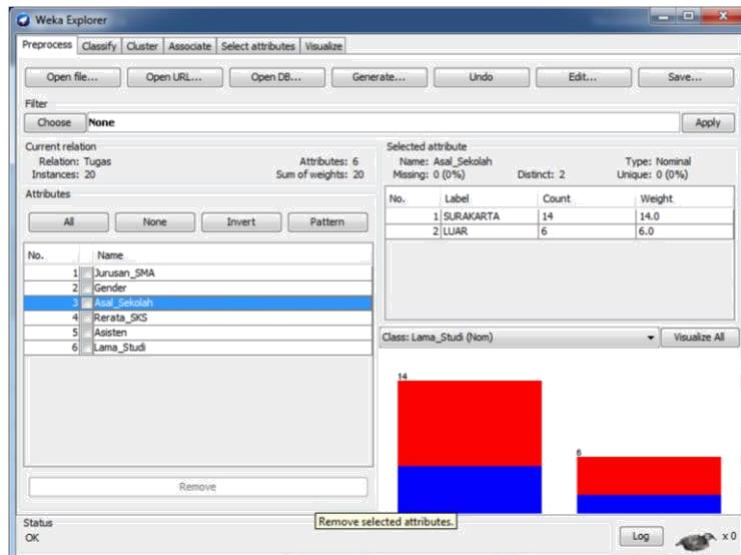
- Jurusan_SMA



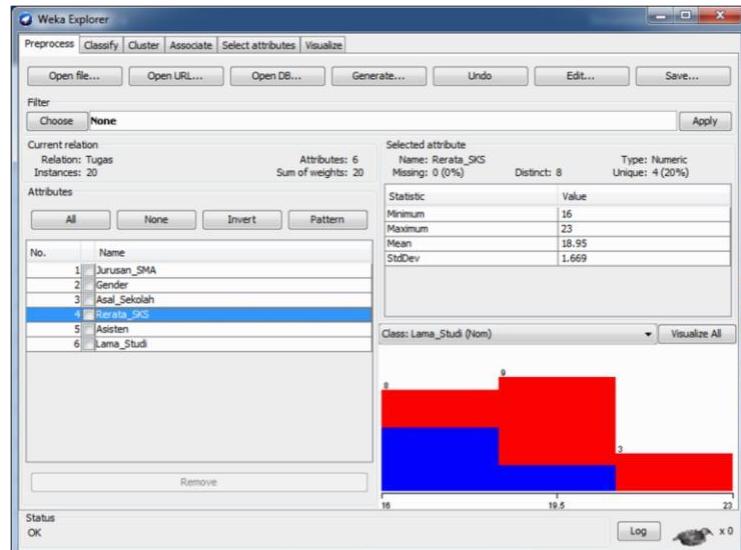
- Gender



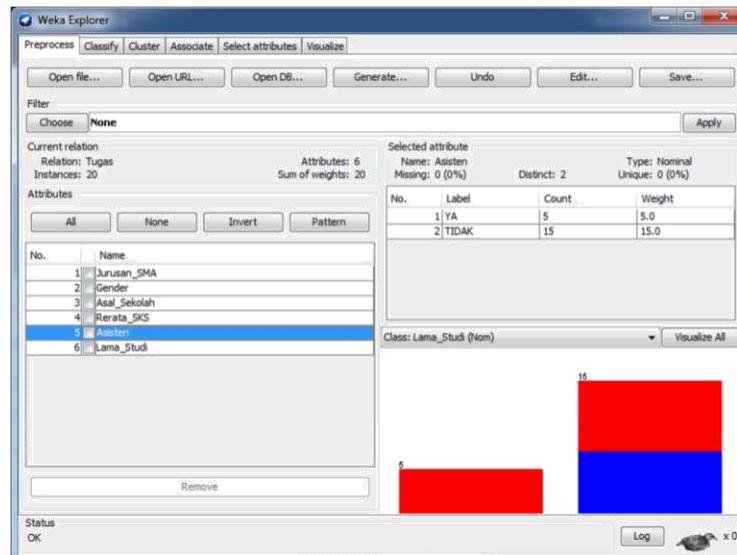
- Asal_Sekolah



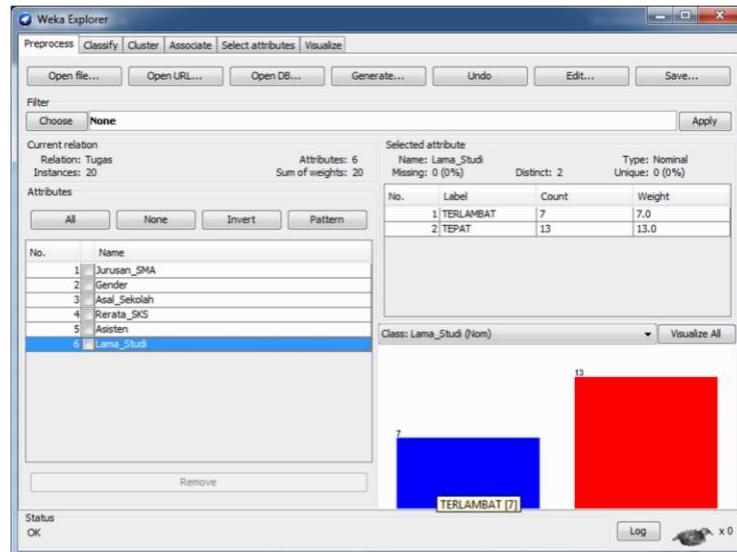
- Rerata_SKS



- Asisten



- Lama_Studi



3. Jumlah atribut

- Bertipe binomial : 4
- Bertipe polynomial : 1
- Bertipe real : 1

4. Pada atribut Rerata_SKS, nilai

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

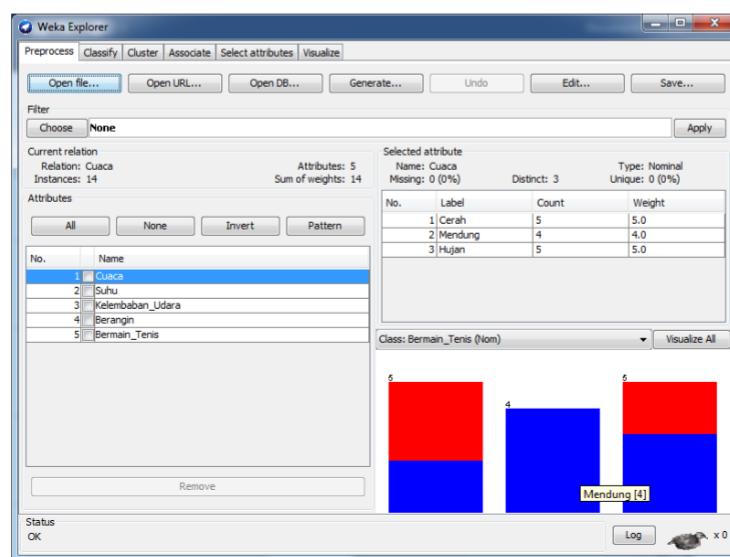
MODUL 8

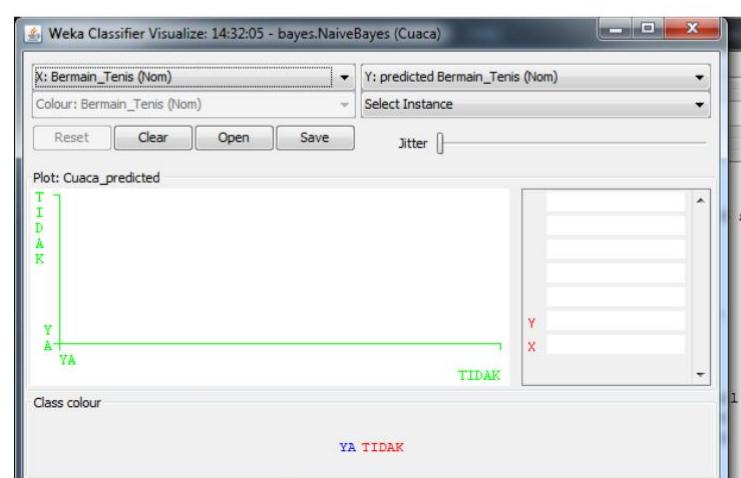
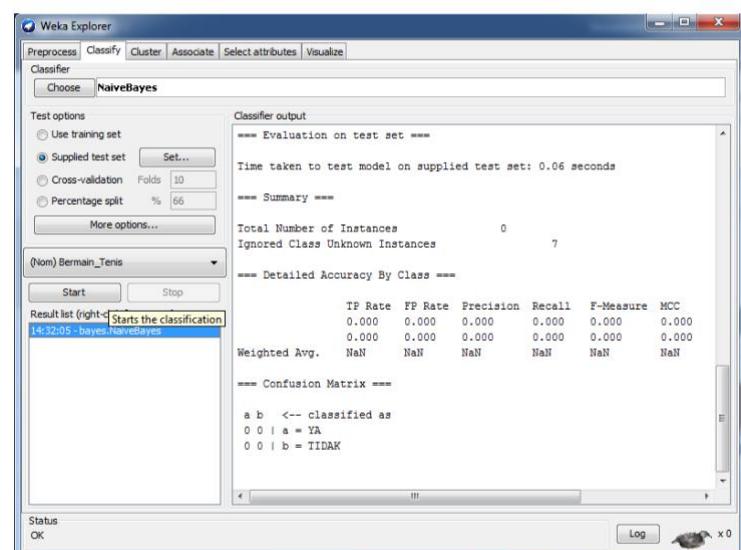
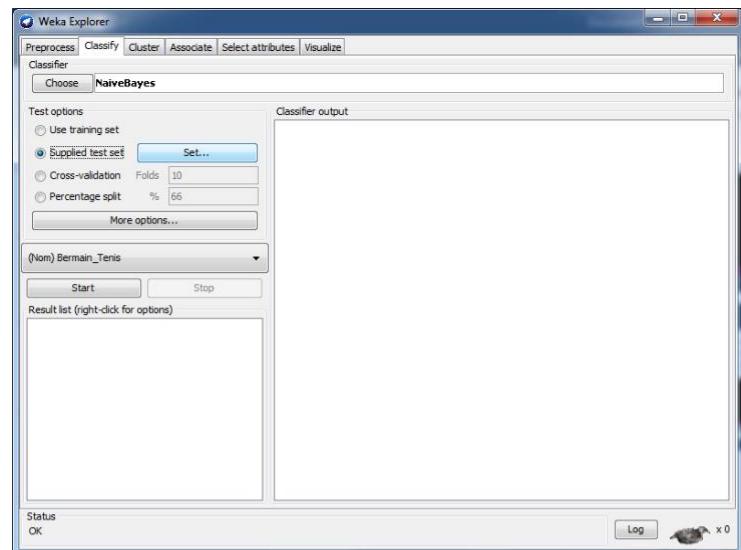


Kegiatan

Implementasi Naive Bayes dengan WEKA

```
File Edit Selection View Go Debug Terminal Help
EXPLORER CuacaTesting.arff Cuaca.arff
C:\Users\LABSI-21\Documents\aini> 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,?
```





ARFF-Viewer - C:\Users\LABSI-21\Documents\aini\HasilPrediksi.arff

File Edit View

HasilPrediksi.arff

Relation: Cuaca_predicted

No.	1: Cuaca Nominal	2: Suhu Numeric	3: Kelembaban_Udara Numeric	4: Berangin Nominal	5: prediction margin Numeric	6: predicted Bermain_Tenis Nominal	7: Bermain_Tenis 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	Mendung	70.0	96.0	TIDAK	0.628523	YA	
5	Mendung	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	

Implementasi Naive Bayes dengan RapidMiner

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Sign in Share

Clipboard Font Alignment Number Styles Cells Editing

F20

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1 Cuaca	Suhu	Kelembaban_udara	Berangin	Bermain_Tenis											
2 Cerah	85.00	85.00	TIDAK	TIDAK											
3 Cerah	80.00	90.00	YA	TIDAK											
4 Mendung	83.00	86.00	TIDAK	YA											
5 Hujan	70.00	96.00	TIDAK	YA											
6 Hujan	68.00	80.00	TIDAK	YA											
7 Hujan	65.00	70.00	YA	TIDAK											
8 Mendung	64.00	65.00	YA	YA											
9 Cerah	72.00	95.00	TIDAK	TIDAK											
10 Cerah	69.00	70.00	TIDAK	YA											
11 Hujan	75.00	80.00	TIDAK	YA											
12 Cerah	75.00	70.00	YA	YA											
13 Mendung	72.00	90.00	YA	YA											
14 Mendung	81.00	75.00	TIDAK	YA											
15 Hujan	71.00	91.00	YA	TIDAK											
16															
17															
18															
19															
20															
21															
22															
23															

Training Testing

2:50 PM 10/10/2019

Screenshot of Microsoft Excel showing a table titled "Tabel_Cuaca - Excel".

The table has columns A through S. Columns A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, and S are visible in the header. Column D is currently selected.

The data in the table is:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Cuaca	Suhu	Kelembaban_udara	Berangin	Bermain_Tenis														
2	Cerah	75		65	TIDAK														
3	Cerah	80		68	YA														
4	Cerah	83		87	YA														
5	Mendung	70		96	TIDAK														
6	Mendung	68		81	TIDAK														
7	Hujan	65		75	YA														
8	Hujan	64		85	YA														
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			

The status bar at the bottom shows "Training Testing" and the date/time "10/10/2019 2:56 PM".

Import Data - Select the cells to import.

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

Buttons: Previous, Next, Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	Cuaca polynominal	Suhu integer	Kelembaban_u... integer	Berangin polynominal	Bermain_Tenis binominal
1	Cerah	85	85	TIDAK	TIDAK
2	Cerah	80	90	YA	TIDAK
3	Mendung	83	86	TIDAK	YA
4	Hujan	70	96	TIDAK	YA
5	Hujan	68	80	TIDAK	YA
6	Hujan	65	70	YA	TIDAK
7	Mendung	64	65	YA	YA
8	Cerah	72	95	TIDAK	TIDAK
9	Cerah	69	70	TIDAK	YA
10	Hujan	75	80	TIDAK	YA
11	Cerah	75	70	YA	YA
12	Mendung	72	90	YA	YA
13	Mendung	81	75	TIDAK	YA

no problems.

← Previous → Next Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	Cuaca polynominal	Suhu integer	Kelembaban_u... integer	Berangin polynominal	Bermain_Tenis binominal label
1	Cerah	85	85	TIDAK	TIDAK
2	Cerah	80	90	YA	TIDAK
3	Mendung	83	86	TIDAK	YA
4	Hujan	70	96	TIDAK	YA
5	Hujan	68	80	TIDAK	YA
6	Hujan	65	70	YA	TIDAK
7	Mendung	64	65	YA	YA
8	Cerah	72	95	TIDAK	TIDAK
9	Cerah	69	70	TIDAK	YA
10	Hujan	75	80	TIDAK	YA
11	Cerah	75	70	YA	YA
12	Mendung	72	90	YA	YA
13	Mendung	81	75	TIDAK	YA

no problems.

← Previous → Next Cancel

Import Data - Where to store the data?

Where to store the data?

- Local Repository (LABSI-21)
 - Connections (LABSI-21)
 - data (LABSI-21)
 - processes (LABSI-21)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 1:42 PM - 357 bytes)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 1:42 PM - 529 bytes)

Name

Location //Local Repository/processes/DataCuaca_Training

← Previous Finish Cancel

RapidMiner Studio Trial 9.3.001 @ LABSI-21-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/processes/DataCuaca_Training)

Data Statistics Visualizations Annotations

Open in Turbo Prep Auto Model

Filter (14 / 14 examples): all

Row No.	Bermain_Tenis	Cuaca	Suhu	Kelembaban_udara	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

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

Repository

- Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-21)
 - Connections (LABSI-21)
 - data (LABSI-21)
 - processes (LABSI-21)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 12:25:42)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 1:42)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 1:42)

2:55 PM 10/10/2019

Import Data - Select the cells to import.

Select the cells to import.

Sheet: Testing 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	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 Cancel

Import Data - Format your columns.

Format your columns.

Replace errors with missing values ⓘ

	Cuaca polynomial	Suhu integer	Kelambaban_ud... integer	Berangin polynomial	Bermain_Tenis binomial label
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

Import Data - Where to store the data?

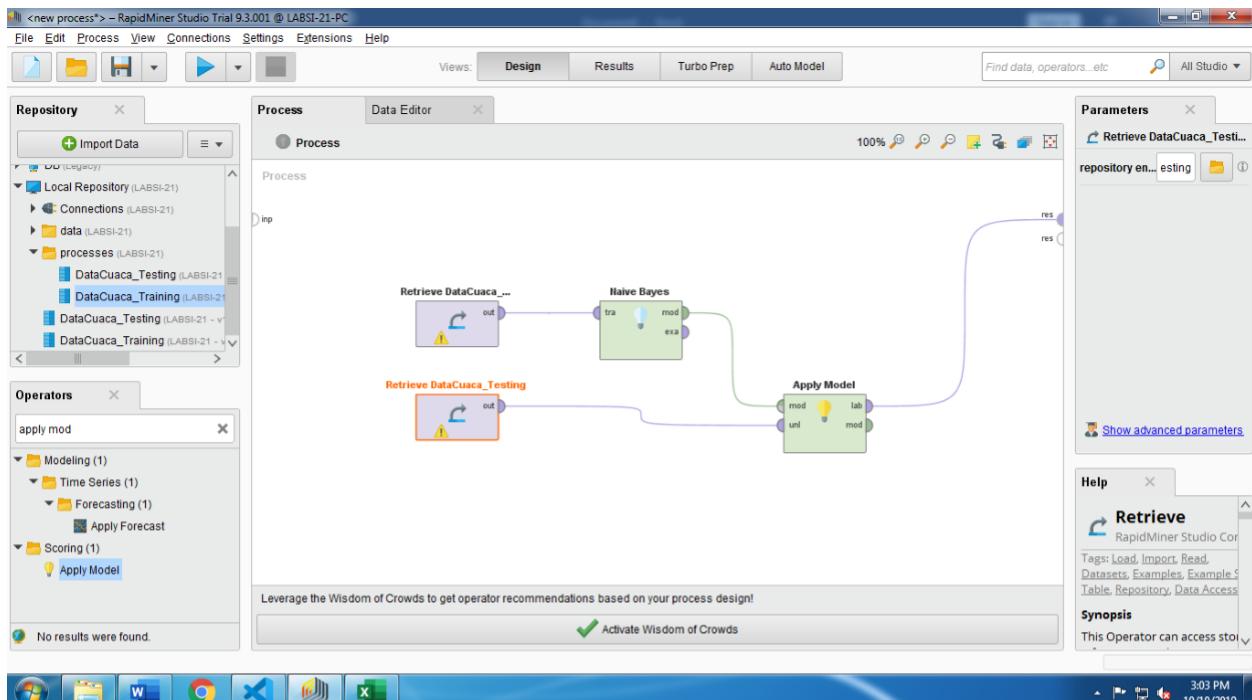
Where to store the data?

- ▼ Local Repository (LABSI-21)
 - ▶ Connections (LABSI-21)
 - ▶ data (LABSI-21)
 - ▶ processes (LABSI-21)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 2:55 PM - 529 bytes)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 1:42 PM - 357 bytes)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 1:42 PM - 529 bytes)

Name:

Location: /Local Repository/processes/DataCuaca_Testing

← Previous 🏁 Finish ✖ Cancel



RapidMiner Studio Trial 9.3.001 @ LABSI-21-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/processes/DataCuaca_Training)

Row No.	Bermain_Te...	prediction(Ber...	confidence(TIDAK)	confidence(YA)	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, 4 special attributes, 4 regular attributes)

Repository

- + Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-21)
 - Connections (LABSI-21)
 - data (LABSI-21)
 - processes (LABSI-21)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 2:12 PM)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 2:12 PM)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 2:12 PM)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 2:12 PM)

Find data, operators...etc All Studio

3:03 PM 10/10/2019

RapidMiner Studio Trial 9.3.001 @ LABSI-21-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Repository

- Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-21)
 - Connections (LABSI-21)
 - data (LABSI-21)
 - processes (LABSI-21)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 2:42 PM)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 2:42 PM)
 - DataCuaca_Testing (LABSI-21 - v1, 10/10/19 1:42 PM)
 - DataCuaca_Training (LABSI-21 - v1, 10/10/19 1:42 PM)

Result History

ExampleSet (/Local Repository/processes/DataCuaca_Training)

ExampleSet (Apply Model)

ExampleSet (/Local Repository/processes/DataCuaca_Testing)

Name	Type	Missing	Statistics	Filter (8 / 8 attributes):	Search for Attributes
Bermain_Tenis	Binominal	7	Least	Most	Values
Prediction	Binominal	0	Least TIDAK (2)	Most YA (5)	YA (5)
Confidence_TIDAK	Real	0	0.007	0.856	Average 0.353
confidence(TIDAK)	Real	0	0.144	0.993	Average 0.647
Cuaca	Polynomial	0	Least Mendung (2)	Most Cerah (3)	Values Cerah (3)
Suhu	Integer	0	Min 64	Max 83	Average 72.143
Kelembaban_udara	Integer	0	Min 65	Max 96	Average 79.571

Showing attributes 1 - 8 Examples: 7 Special Attributes: 4 Regular Attributes: 4



Tugas

tugas - Excel

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

F23

Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten	Lama_Studi
IPS	WANITA	SURAKARTA	18	TIDAK	TERLAMBAT
IPA	PRIA	SURAKARTA	19	YA	TEPAT
LAIN	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT
IPA	PRIA	LUAR	17	TIDAK	TERLAMBAT
IPA	WANITA	SURAKARTA	17	TIDAK	TEPAT
IPA	WANITA	LUAR	18	YA	TEPAT
IPA	PRIA	SURAKARTA	18	TIDAK	TERLAMBAT
IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPS	PRIA	LUAR	18	TIDAK	TERLAMBAT
LAIN	WANITA	SURAKARTA	18	TIDAK	TEPAT
IPA	WANITA	SURAKARTA	19	TIDAK	TEPAT
IPS	PRIA	SURAKARTA	20	TIDAK	TEPAT
IPS	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPA	PRIA	LUAR	22	YA	TEPAT
LAIN	PRIA	SURAKARTA	16	TIDAK	TERLAMBAT
IPS	PRIA	LUAR	20	TIDAK	TEPAT
LAIN	PRIA	LUAR	23	YA	TEPAT
IPA	PRIA	SURAKARTA	21	YA	TEPAT
IPS	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT

Training Testing +

File Edit Selection View Go Debug Terminal Help tugasTraining.arff - Visual Studio Code

EXPLORER tugasTraining.arff x

C:\Users\LABSI-21\Documents\aini>Tugas'> tugasTraining.arff

```
1 @relation tugasTraining
2
3 @attribute Jurusan_SMA {LAIN, IPA, IPS}
4 @attribute Gender {WANITA, PRIA}
5 @attribute Asal_Sekolah {SURAKARTA, LUAR}
6 @attribute Rerata_SKS real
7 @attribute Asisten {YA, TIDAK}
8 @attribute Lama_Studi {TEPAT, TERLAMBAT}
9
10 @data
11 IPA,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
```

OPEN EDITORS tugasTraining.arff x

> NO FOLDER OPENED

> OUTLINE

QR CODE

Ln 31. Col 1 Spaces: 4 UFT-8 CRLF Plain Text

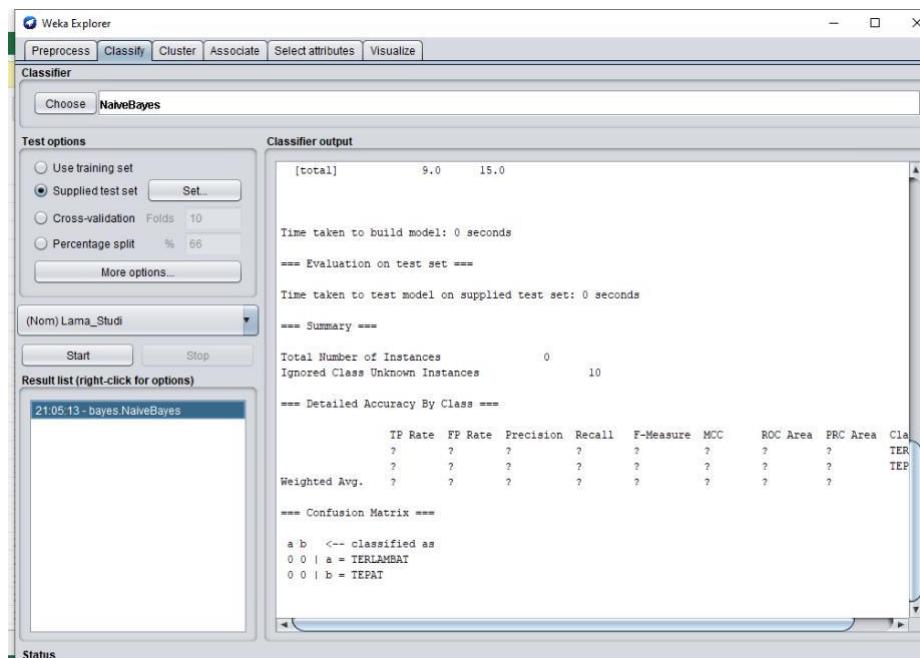
```

File Edit Selection View Go Debug Terminal Help
tugasTesting.arff - Visual Studio Code
OPEN EDITORS
  tugasTraining.arff  tugasTesting.arff
C: > Users > LABSI-21 > Documents > aini > Tugas' > tugasTesting.arff
1 @relation tugasTraining
2
3 @attribute Jurusan_SMA {LAIN, IPA, IPS}
4 @attribute Gender {WANITA, PRIA}
5 @attribute Asal_Sekolah {SURAKARTA, LUAR}
6 @attribute Rerata_SKS real
7 @attribute Asisten {YA, TIDAK}
8 @attribute Lama_Studi {TEPAT, TERLAMBAT}
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

```

Ln 21, Col 1 Spaces: 4 UTF-8 CRLF Plain Text

Implementasi Naive Bayes dengan WEKA



ARFF-Viewer - D:\Praktikum Semester 5\Praktikum DWDM\Modul 8\tugas\HasilPrediksi.arff

File Edit View
HasilPrediksi.arff

Relation: tugasTesting_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

No.	Nominal	Nominal	Nominal	Numerik	Nominal	Numerik	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	

Implementasi Naive Bayes dengan RapidMiner

File Edit Process Tools View Help

ExampleSet (/Local Repository/data/CuacaTesting) ExampleSet (/Local Repository/data/CuacaTraining) ExampleSet (/Local Repository/processes/tugasTraining) ExampleSet (Retrieve CuacaTesting) ExampleSet (/Local Repository/processes/SMATraining) ExampleSet (/Local Repository/processes/SMATesting)

Data View Meta Data View Plot View Advanced Charts Annotations

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

Row No.	Lama_Studi	Jurusan_S...	Gender	Asal_Sekol...	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
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

Repositories Examples (none)

- ai Repository (user)
 - data (user)
 - CuacaTraining (user - v1, 10/16/19 8:20 PM - 527 examples)
 - CuacaTesting (user - vt, 10/16/19 8:22 PM - 427 examples)
 - processes (user)
 - tugasTraining (user - vt, 10/16/19 9:08 PM - 659 examples)
 - SMATesting (user - v1, 10/16/19 9:17 PM - 549 examples)
 - SMATraining (user - vt, 10/16/19 9:17 PM - 549 examples)

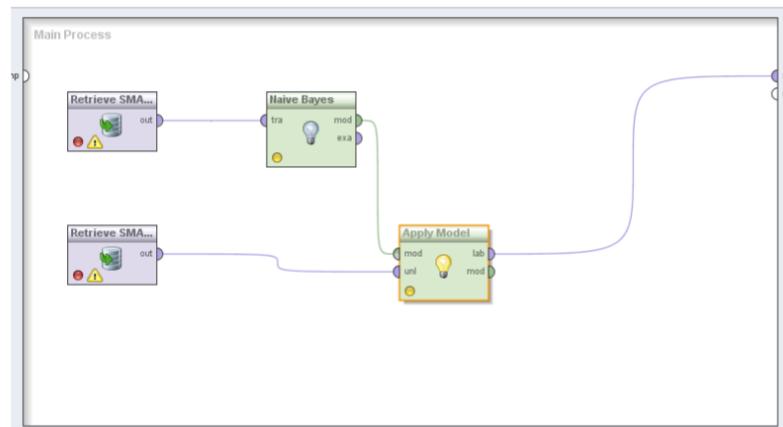
Log System Monitor Go to Settings to activate Windows.

Screenshot of the KNIME interface showing the Data View tab. The table displays 10 examples with attributes: Row No., Lama_Studi, Jurusan_S..., Gender, Asal_Sekolah, Rerata_SKS, and Asisten.

Row No.	Lama_Studi	Jurusan_S...	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

Log window output:

```
Oct 16, 2019 9:08:55 PM INFO: Reading example set...
Oct 16, 2019 9:16:18 PM INFO: Reading example set...
Oct 16, 2019 9:17:01 PM INFO: Reading example set...
```



Screenshot of the KNIME interface showing the Data View tab. The table displays 10 examples with additional columns: confidence_TERLAMBAT, confidence_TEPAT, and prediction.

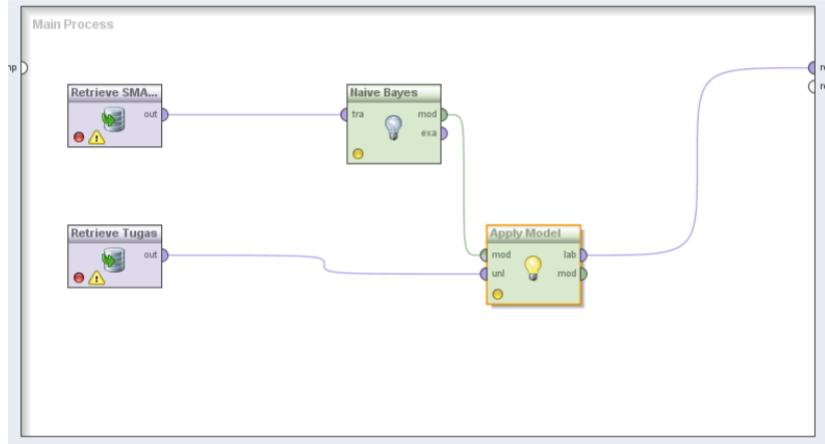
Row No.	Lama_Studi	confidence(...)	confidence(...)	prediction(Lam...)	Jurusan_S...	Gender	Asal_Sekolah	Rerata_SKS	Asisten
1	?	0.648	0.352	TERLAMBAT	LAIN	WANITA	SURAKARTA	18	TIDAK
2	?	0.005	0.995	TEPAT	IPA	PRIA	SURAKARTA	19	YA
3	?	0.650	0.350	TERLAMBAT	LAIN	PRIA	SURAKARTA	19	TIDAK
4	?	0.868	0.132	TERLAMBAT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

confidence_TERLAMBAT	confidence(TERLAMBAT)	real	avg = 0.524 +/- 0.312	[0.005 ; 0.868]	0
confidence_TEPAT	confidence(TEPAT)	real	avg = 0.476 +/- 0.312	[0.132 ; 0.995]	0
prediction	prediction(Lama_Studi)	binomial	mode = TERLAMBAT (7), least = TEPAT (3)	TERLAMBAT (7), TEPAT	0

- Nilai rerata confidence TEPAT = 0.476
- Nilai rerata confidence TERLAMBAT = 0.524
- Orang yang lulus TEPAT = 3

- Orang yang lulus TERLAMBAT = 7
- Prediksi dari Dewi dan Jono

ExampleSet (2 examples, 1 special attribute, 5 regular attributes)						
Row No.	Lama_Studi	Jurusan_S...	Gender	Asal_Sekol...	Rerata_SKS	Asisten
1	?	IPA	WANITA	LUAR	18	TIDAK
2	?	LAIN	PRIA	SURAKARTA	17	YA



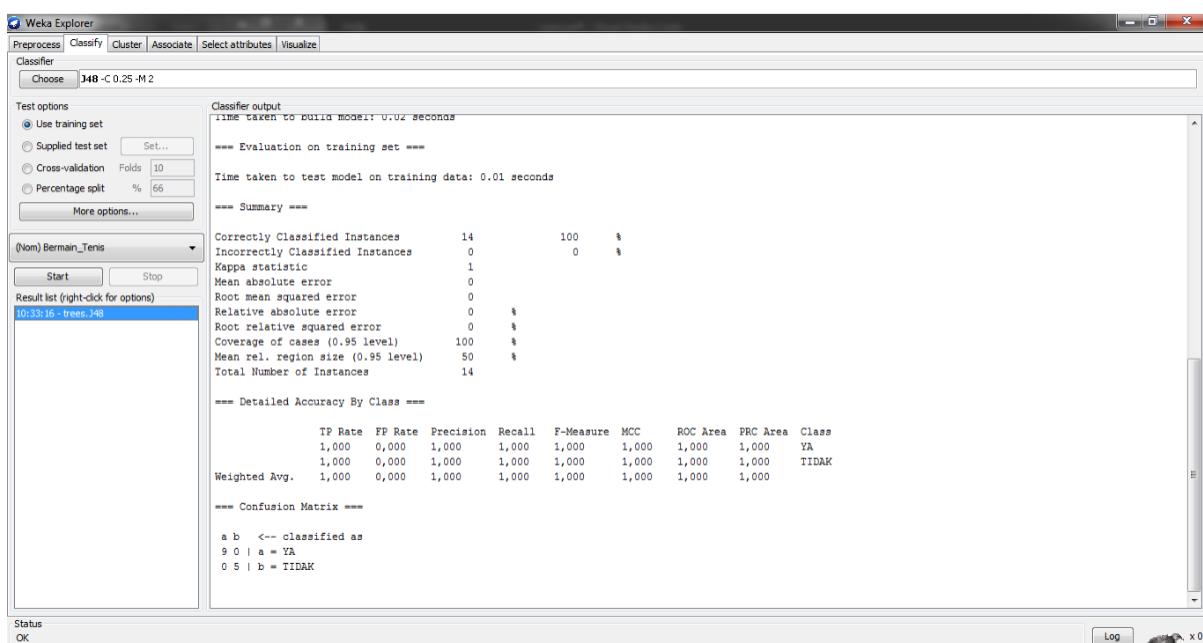
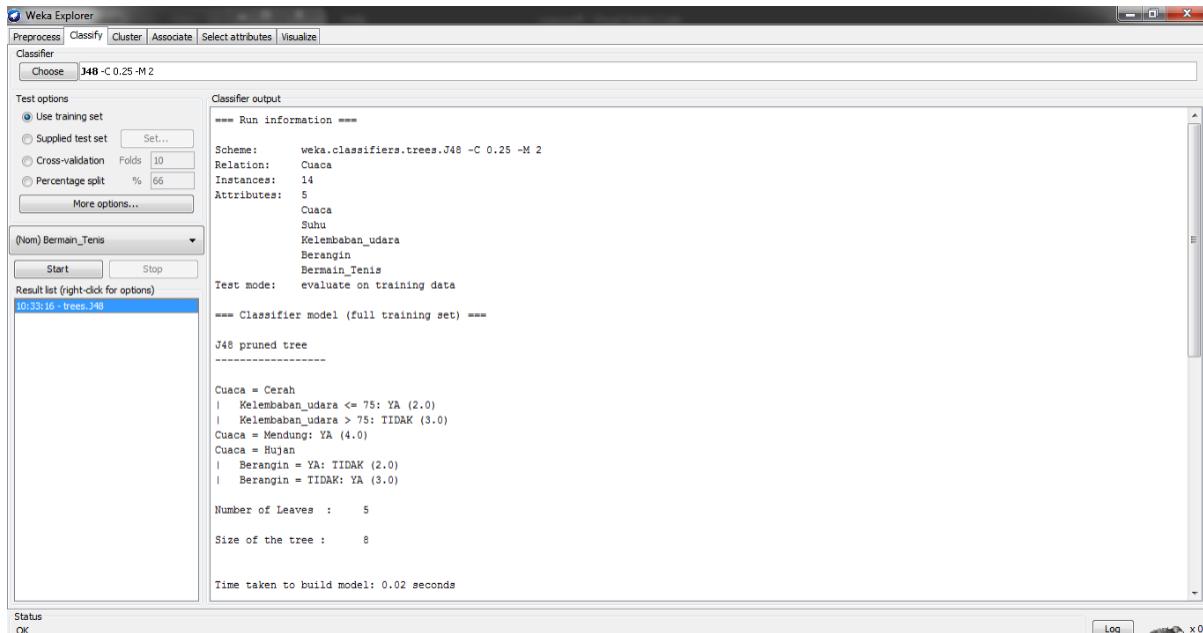
ExampleSet (2 examples, 4 special attributes, 5 regular attributes)									
Row No.	Lama_Studi	confidence(..., confidence(..., prediction(L...	confidence(..., prediction(L...	Jurusan_S...	Gender	Asal_Sekol...	Rerata_SKS	Asisten	
1	?	0.298	0.702	EPAT	IPA	WANITA	LUAR	18	TIDAK
2	?	0.076	0.924	EPAT	LAIN	PRIA	SURAKARTA	17	YA

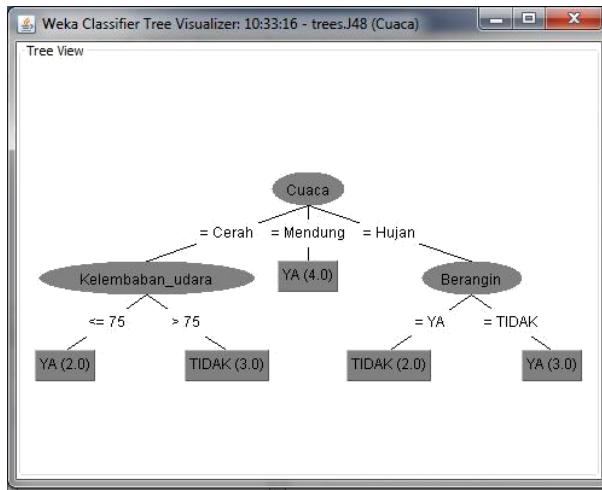
Hasil prediksi menyatakan bahwa Dewi dan Jono akan lulus dengan TEPAT

MODUL 9

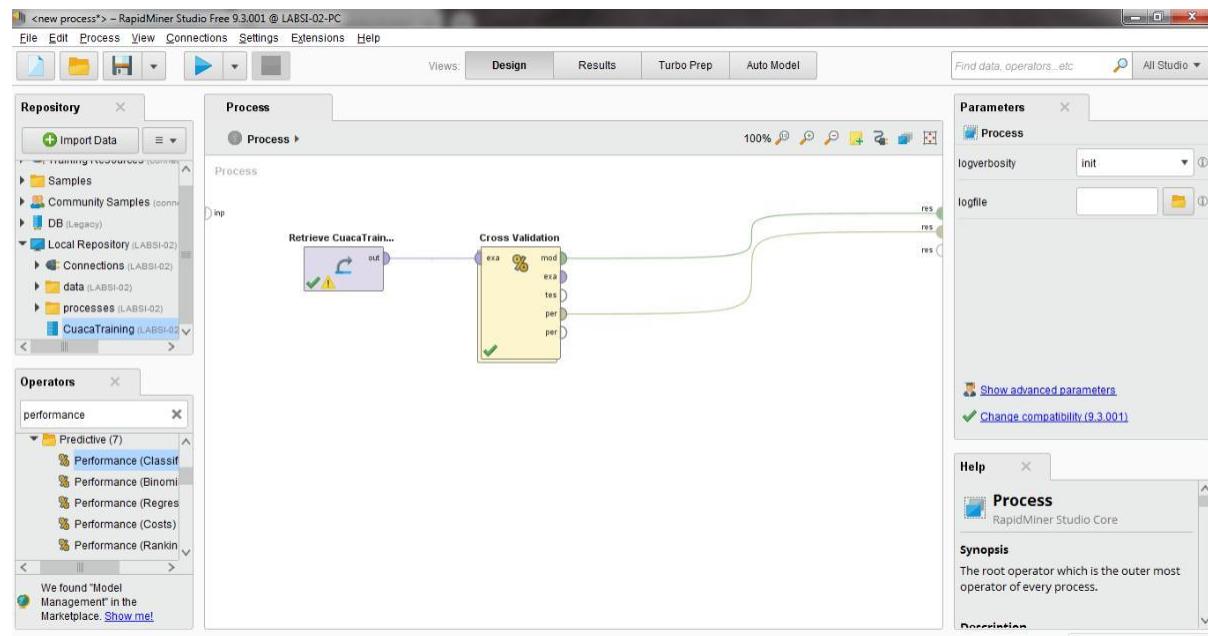


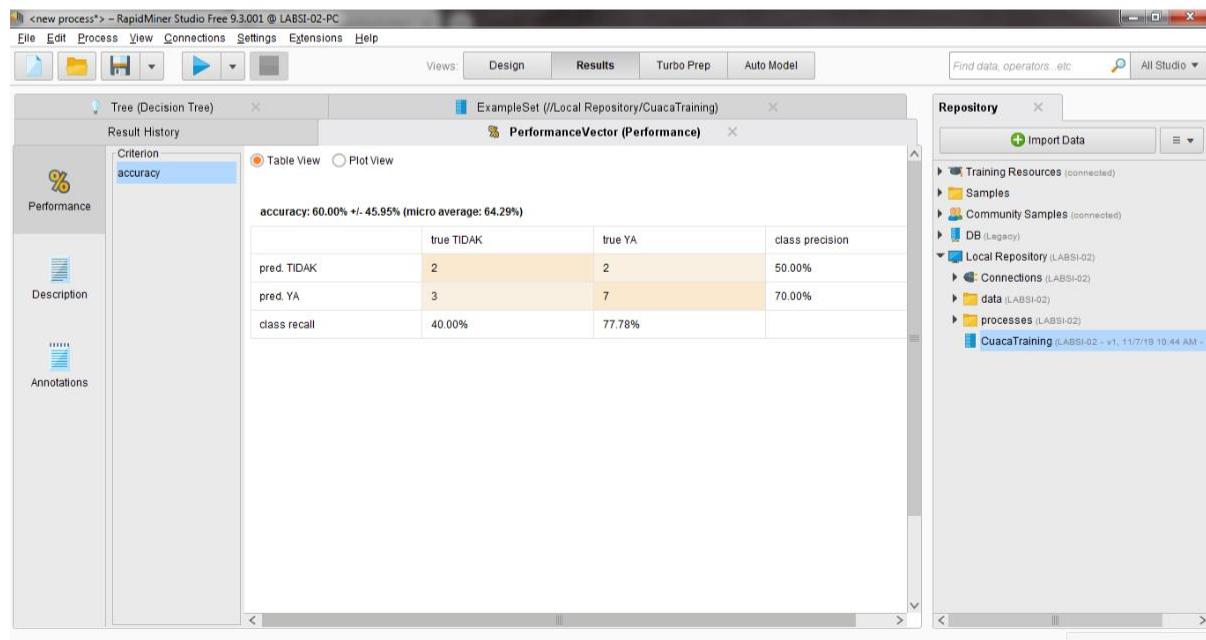
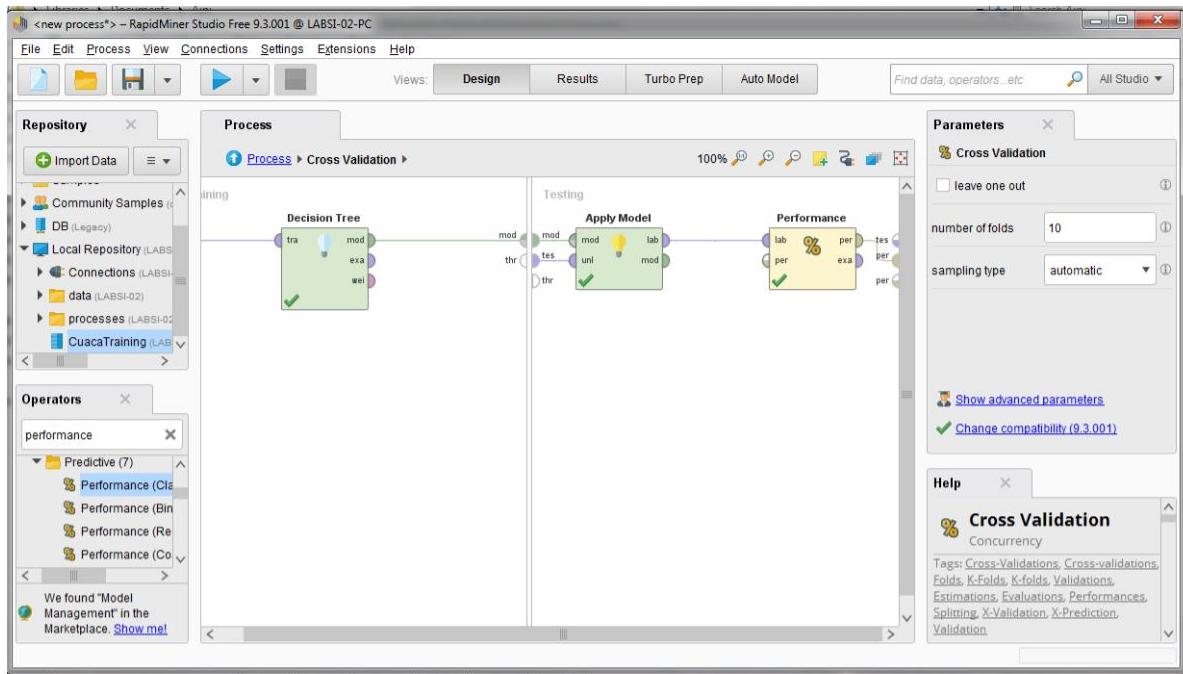
Kegiatan Menggunakan WEKA

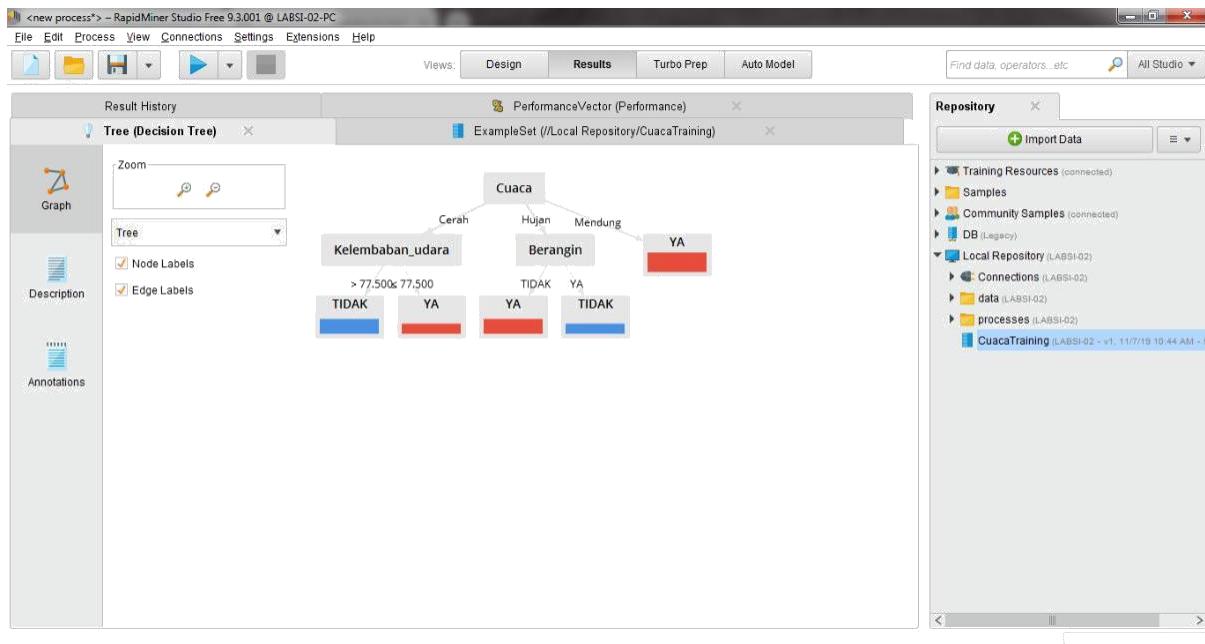




Menggunakan RapidMiner







Tugas

1. Table

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. Weka

a. Tree

```

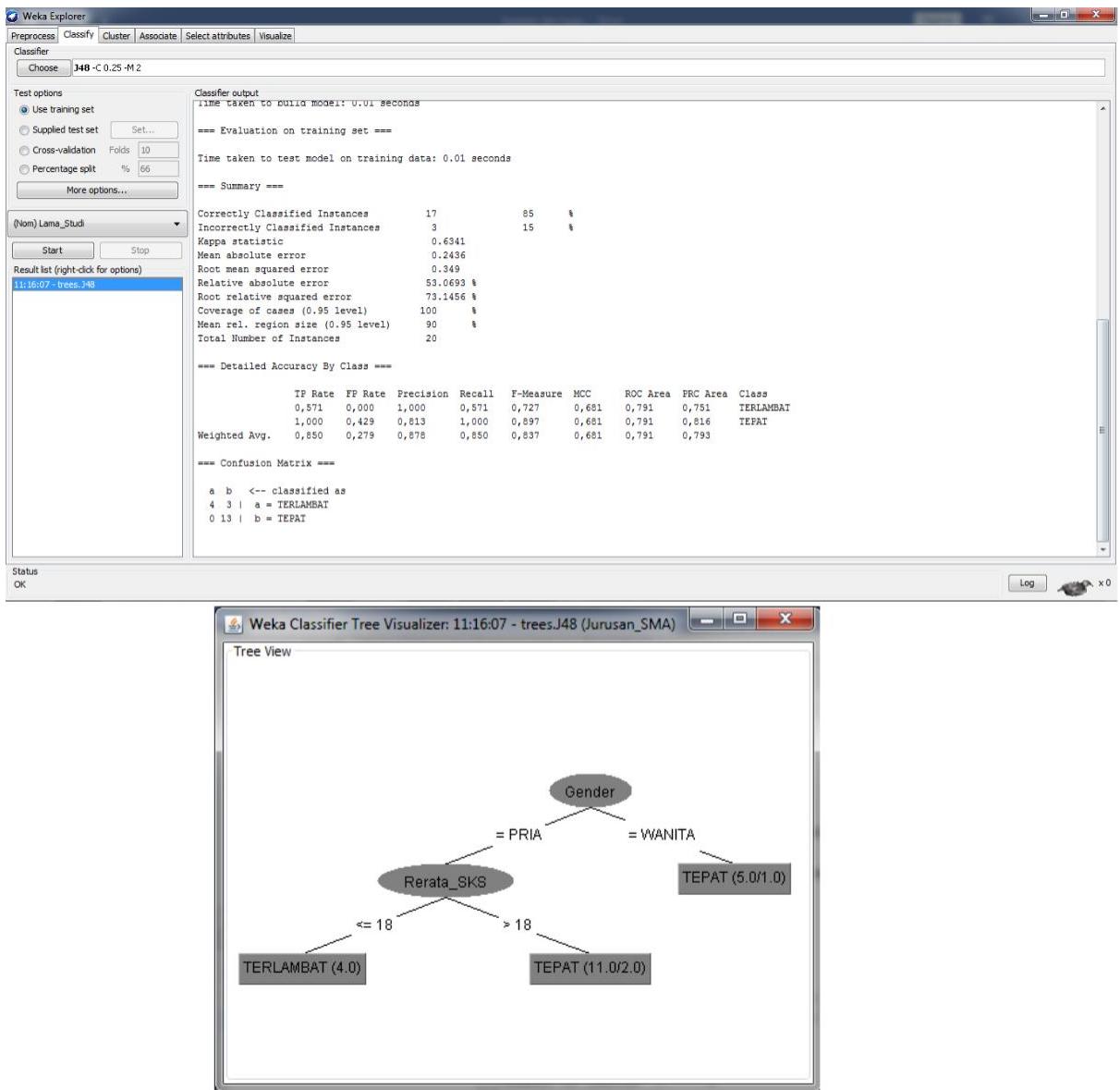
    === Run information ===
    Scheme: weka.classifiers.trees.J48 -C 0.25 -M 2
    Relation: Jurusan_SMA
    Instances: 20
    Attributes: 6
    Jurusan_SMA
    Gender
    Asal_Sekolah
    Berata_SKS
    Asisten
    Lama_Studi
    Test mode: evaluate on training data

    === Classifier model (full training set) ===
    J48 pruned tree
    -----
    Gender = PRIA
    |_ Rerata_SKS <= 18: TERLAMBAT (4.0)
    |_ Rerata_SKS > 18: TEPAT (11.0/2.0)
    Gender = WANITA: TEPAT (5.0/1.0)

    Number of Leaves : 3
    Size of the tree : 5

    Time taken to build model: 0.01 seconds
    === Evaluation on training set ===
  
```

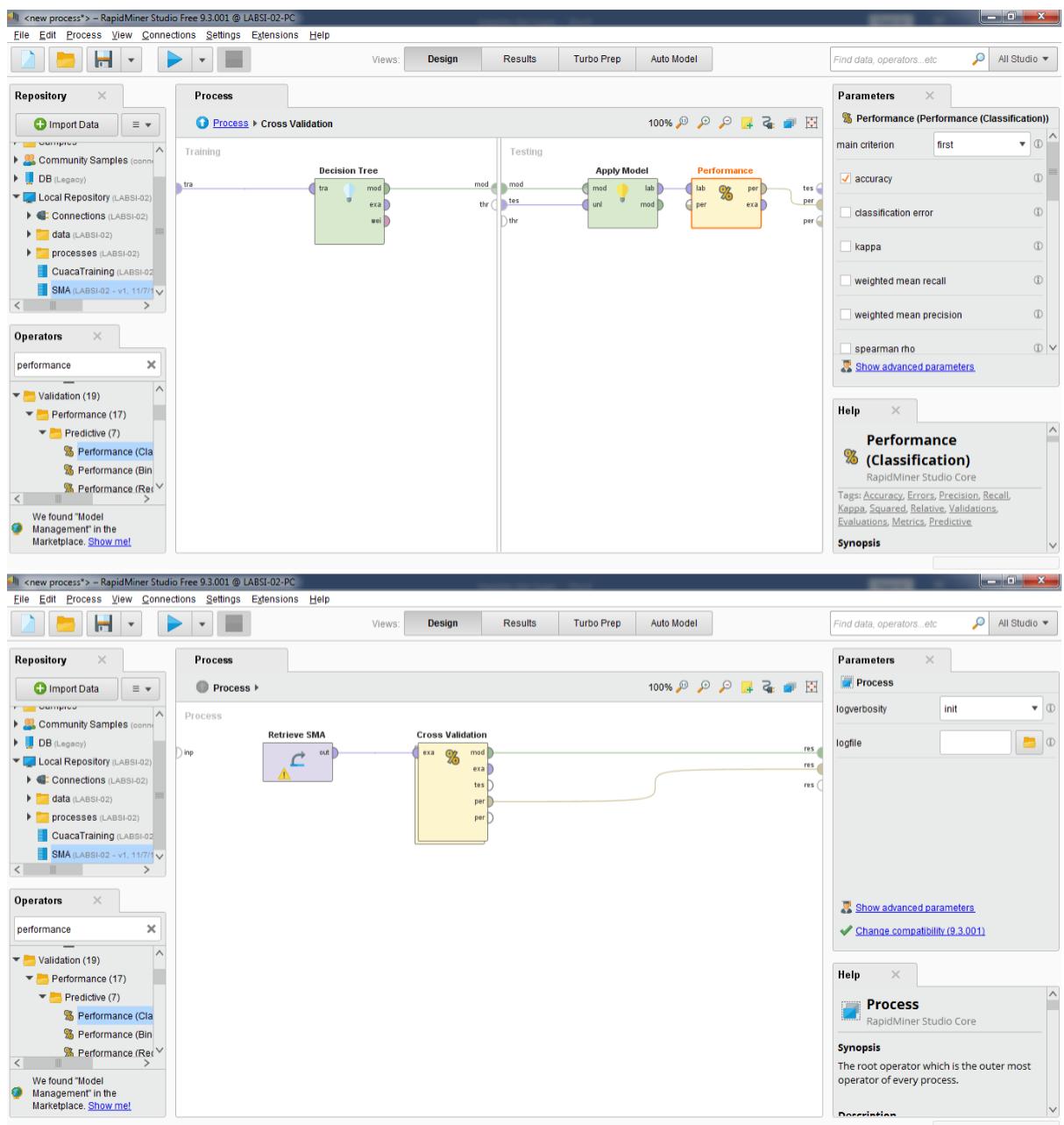
Status: OK

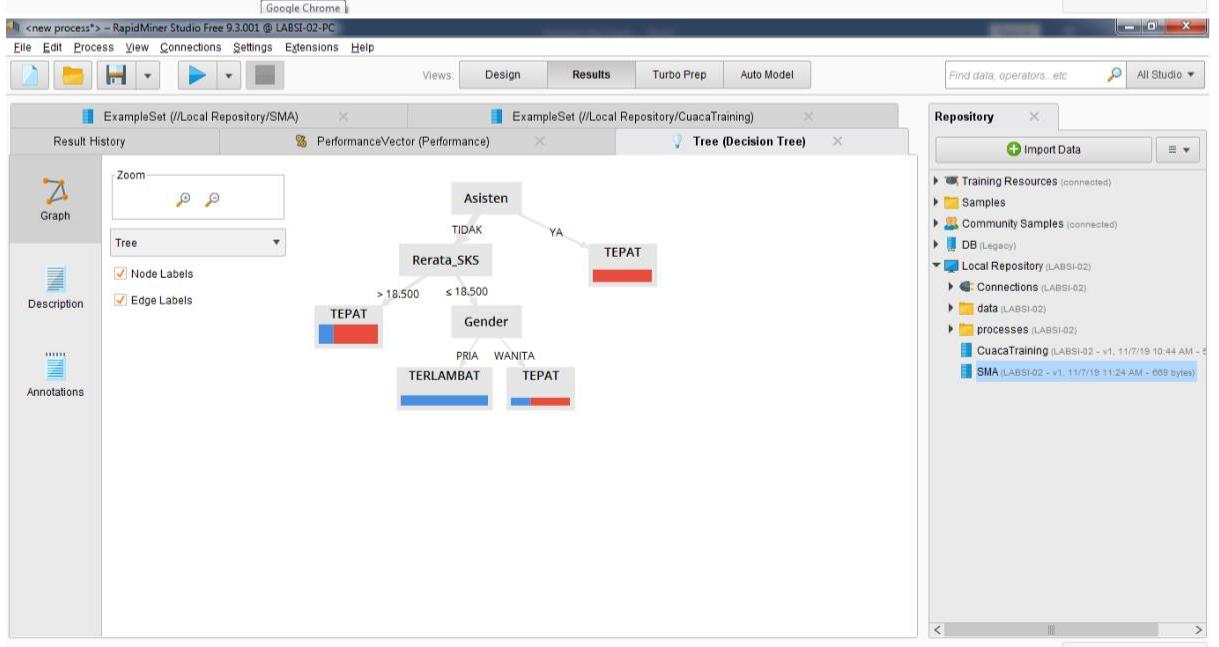
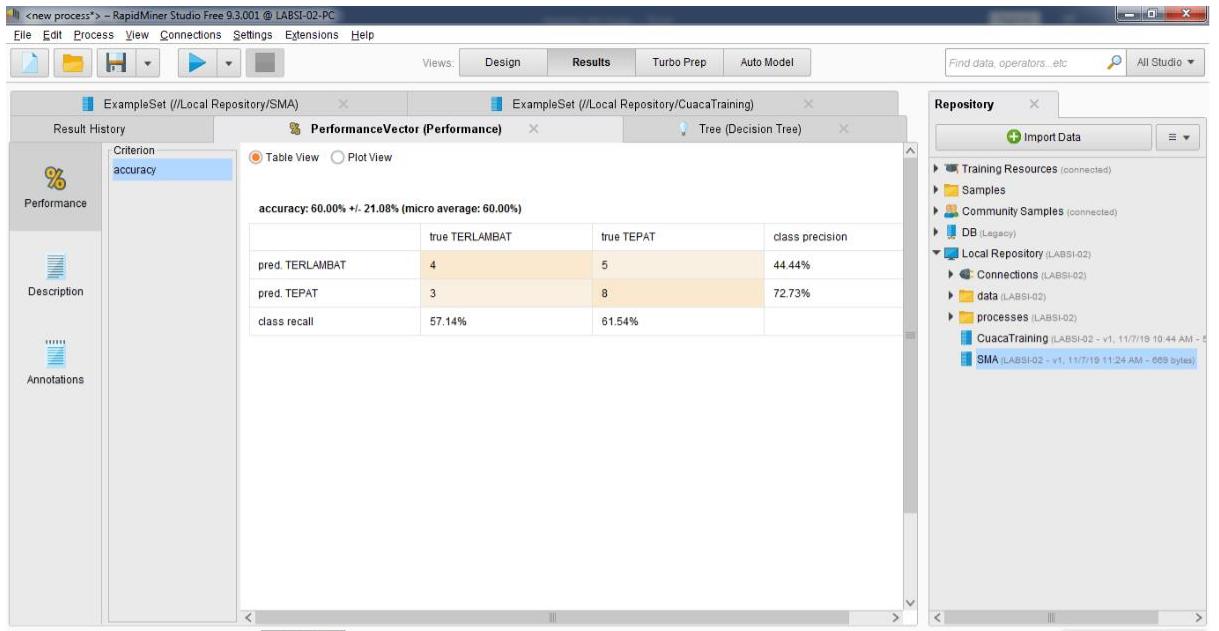


- b. Carilah nilai-nilai parameter berikut:
- Jumlah simpul daun pada pohon keputusan = **3**
 - Jumlah simpul keseluruhan pada pohon kerputusan = **5**
 - Waktu yang dibutuhkan untuk proses pelatihan = **0.01** detik
 - Tingkat ketepatan klasifikasi = **85 %**
 - Tingkat ketidaktepatan klasifikasi = **15 %**

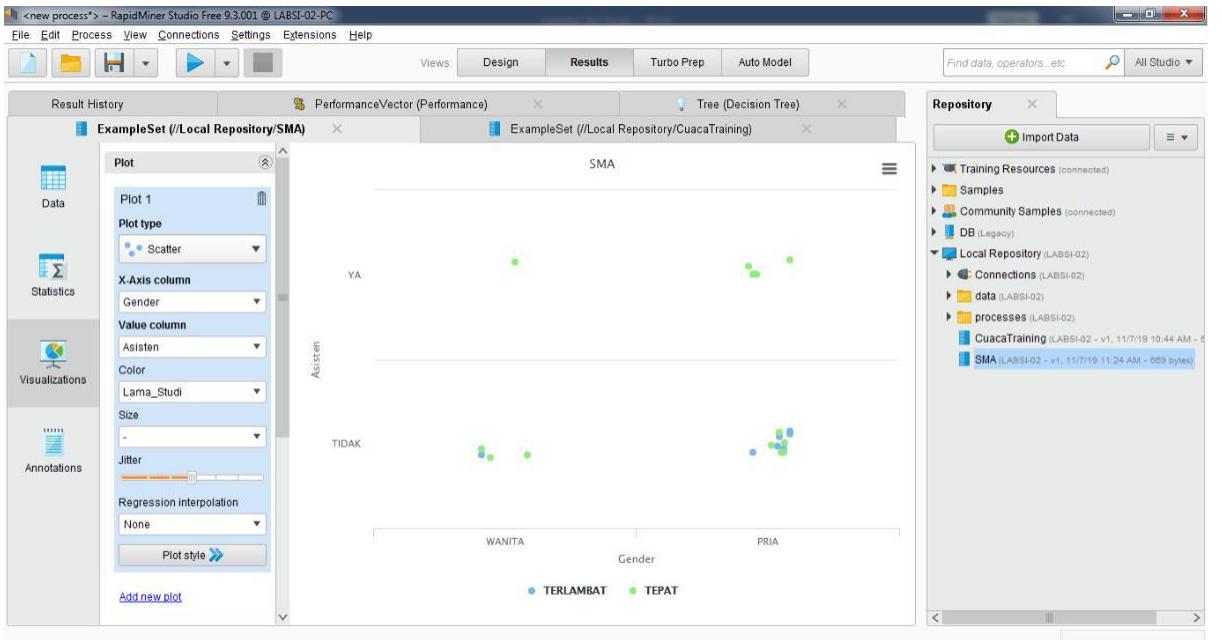
3. RapidMiner

a. Pohon





b. Plot View



4. Klasifikasi yang terbentuk yaitu :

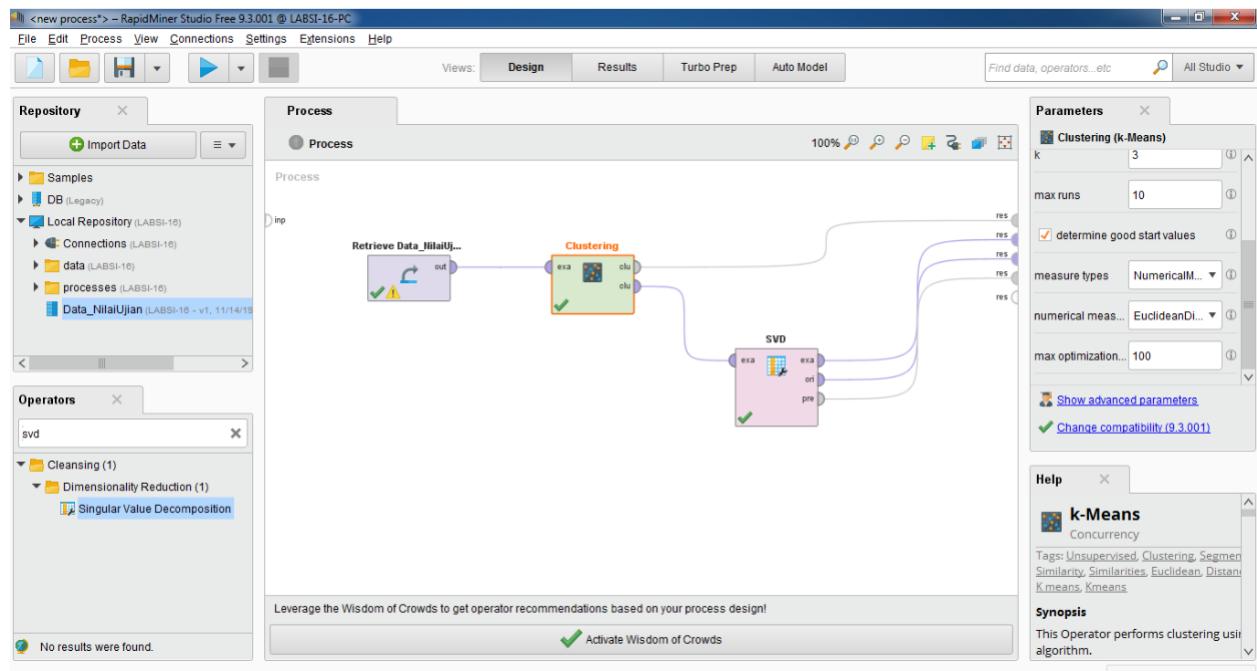
- i. Seseorang akan lama_studi (TERLAMBAT) jika kondisi sebagai berikut:
 - Gender = PRIA, Rerata_SKS ≤ 18 (nilai atribut lain diabaikan)
- ii. Seseorang akan lama_studi (TERLAMBAT) jika kondisi sebagai berikut:
 - Gender = WANITA (nilai atribut lain diabaikan)
 - Gender = PRIA, Rerata_SKS > 18 (nilai atribut lain diabaikan)

MODUL 10



Kegiatan

	A	B	C	D	E	F	G
1	NO_SISWA	NAMA	B.IND	B.ING			
2	S_101	JOKO	8,54	8,4			
3	S_102	AGUS	9,98	6,81			
4	S_103	SUSI	6,2	9,15			
5	S_104	DYAH	5,24	7,26			
6	S_105	WATI	5,7	5,71			
7	S_106	IKA	8,57	5,87			
8	S_107	EKO	7,7	7,71			
9	S_108	YANTO	6,6	5,7			
10	S_109	WAWAN	9	8,12			
11	S_110	MAHMUD	9,81	9,58			
12							
13							
14							
15							



RapidMiner Studio Free 9.3.001 @ LABSI-16-PC

File Edit Process View Connections Settings Extensions Help

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

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

Eigenvalues Svd vectors Cumulative Variance Annotations

Eigenvalues

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

Repository

Import Data

- Samples
- DB (Legacy)
- Local Repository (LABSI-16)
 - Connections (LABSI-16)
 - data (LABSI-16)
 - processes (LABSI-16)
 - Data_NilaiUjian (LABSI-16 - v1, 11/14/19)

RapidMiner Studio Free 9.3.001 @ LABSI-16-PC

File Edit Process View Connections Settings Extensions Help

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

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

Eigenvalues Svd vectors Cumulative Variance Annotations

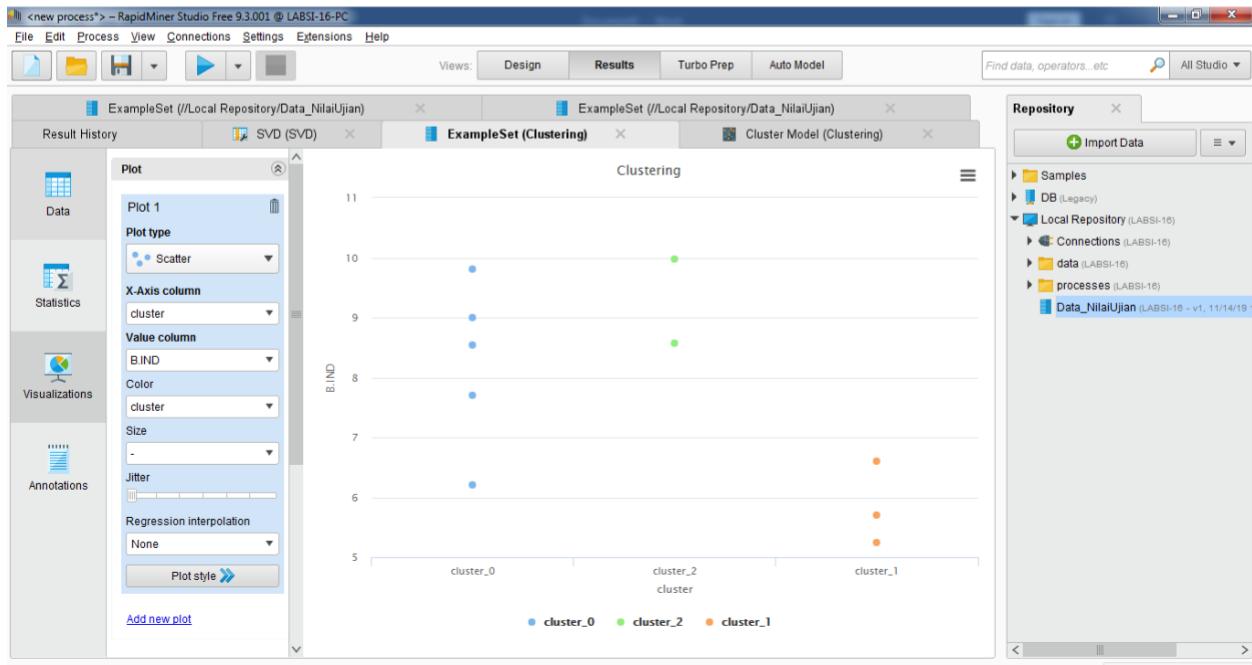
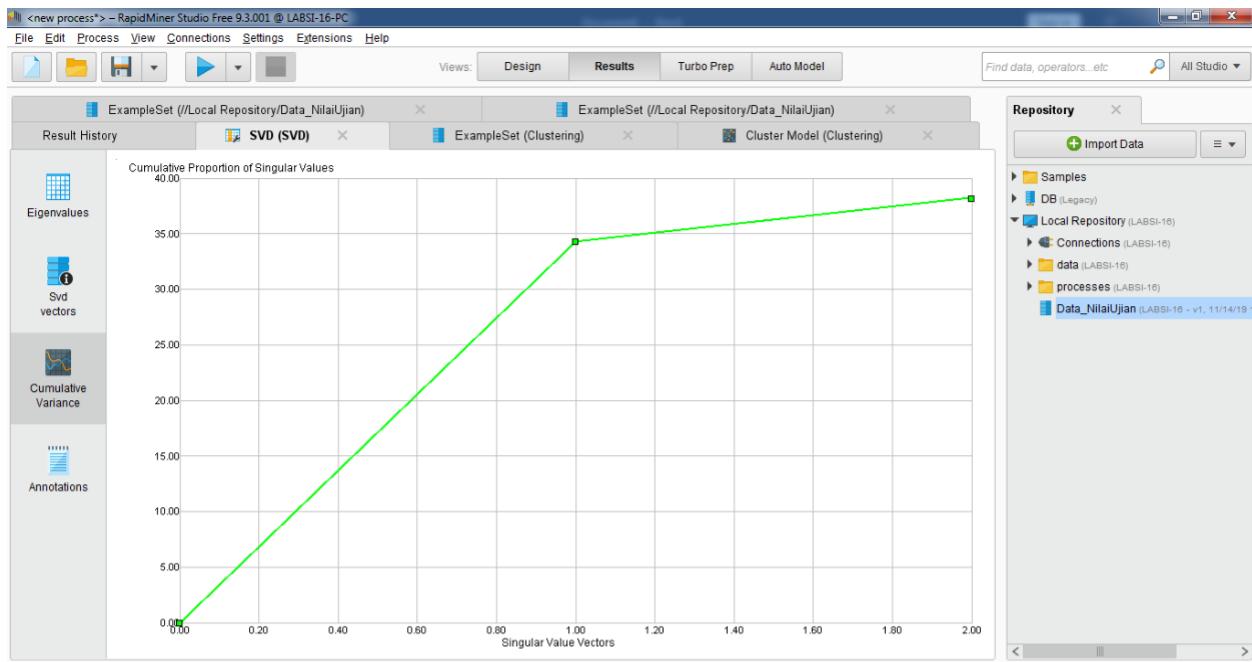
Eigenvalues

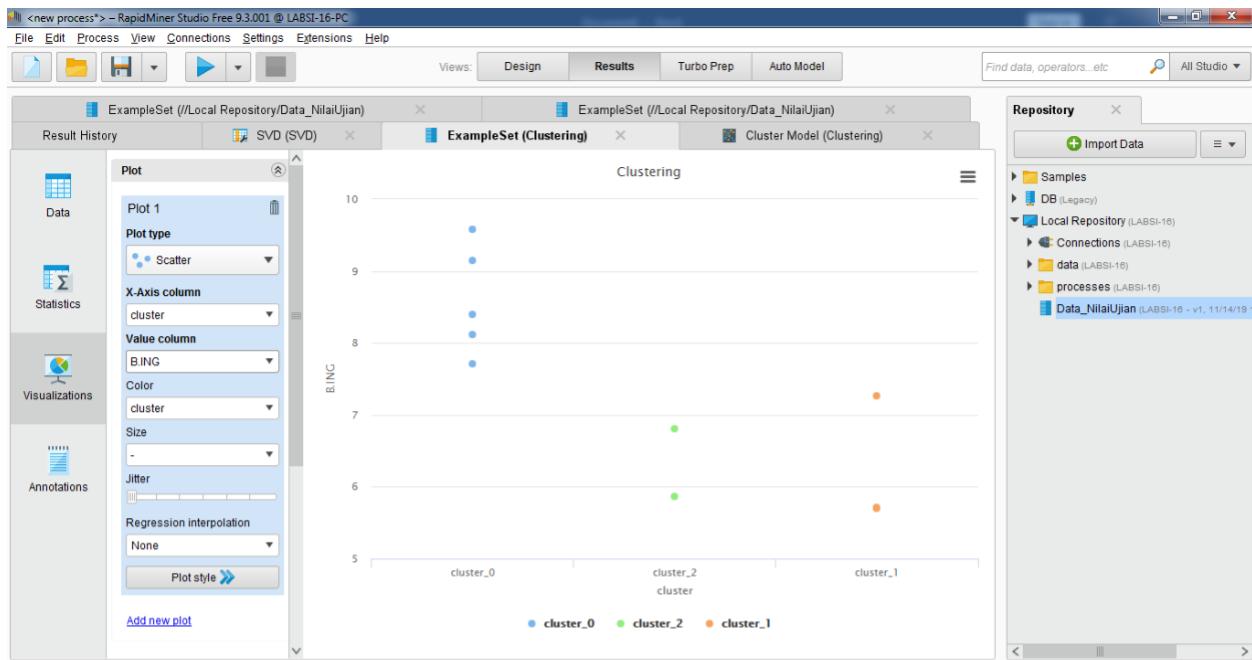
Attribute	SVD Vector 1
B.IND	0.723
B.ING	0.690

Repository

Import Data

- Samples
- DB (Legacy)
- Local Repository (LABSI-16)
 - Connections (LABSI-16)
 - data (LABSI-16)
 - processes (LABSI-16)
 - Data_NilaiUjian (LABSI-16 - v1, 11/14/19)





RapidMiner Studio Free 9.3.001 @ LABSI-16-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) ExampleSet (//Local Repository/Data_NilaiUjian) ExampleSet (Clustering) Cluster Model (Clustering)

Data

Open in: Turbo Prep Auto Model

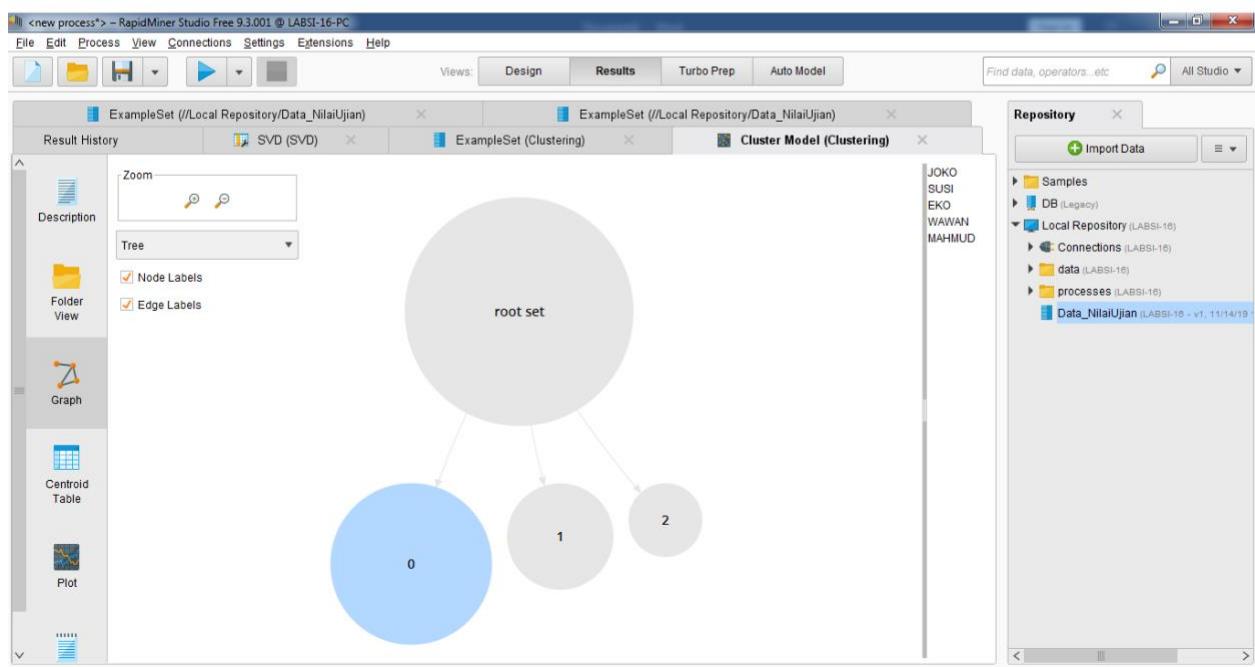
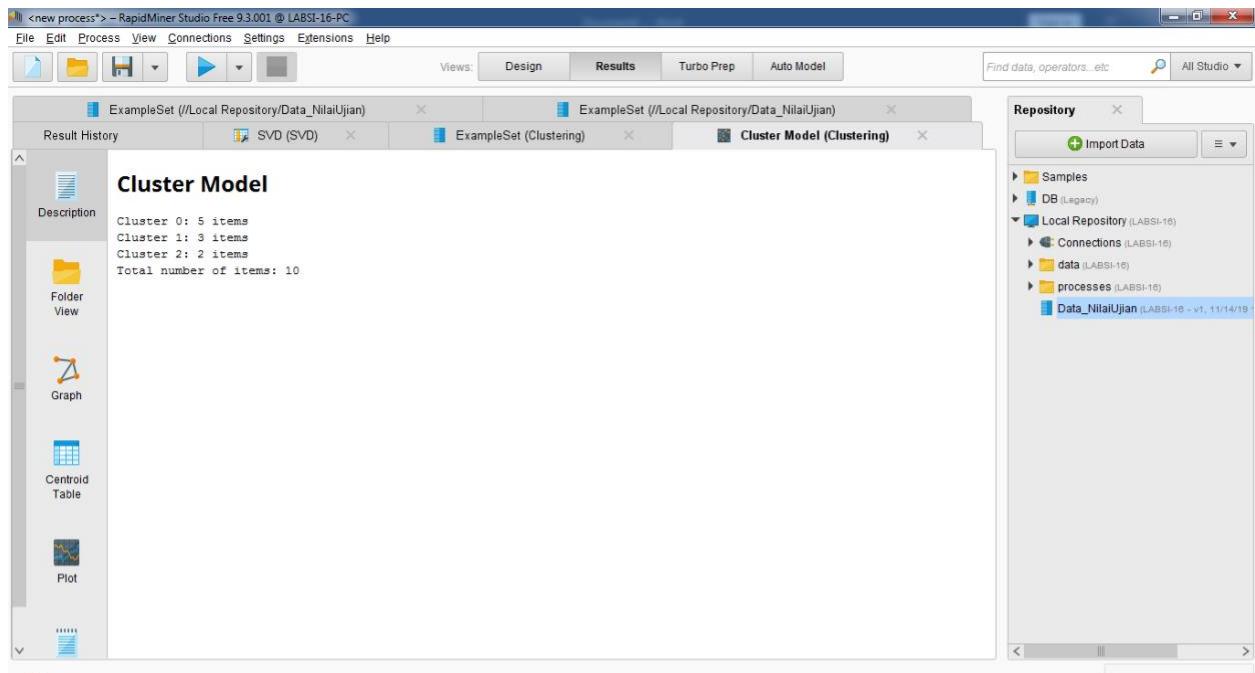
Filter (10 / 10 examples): all

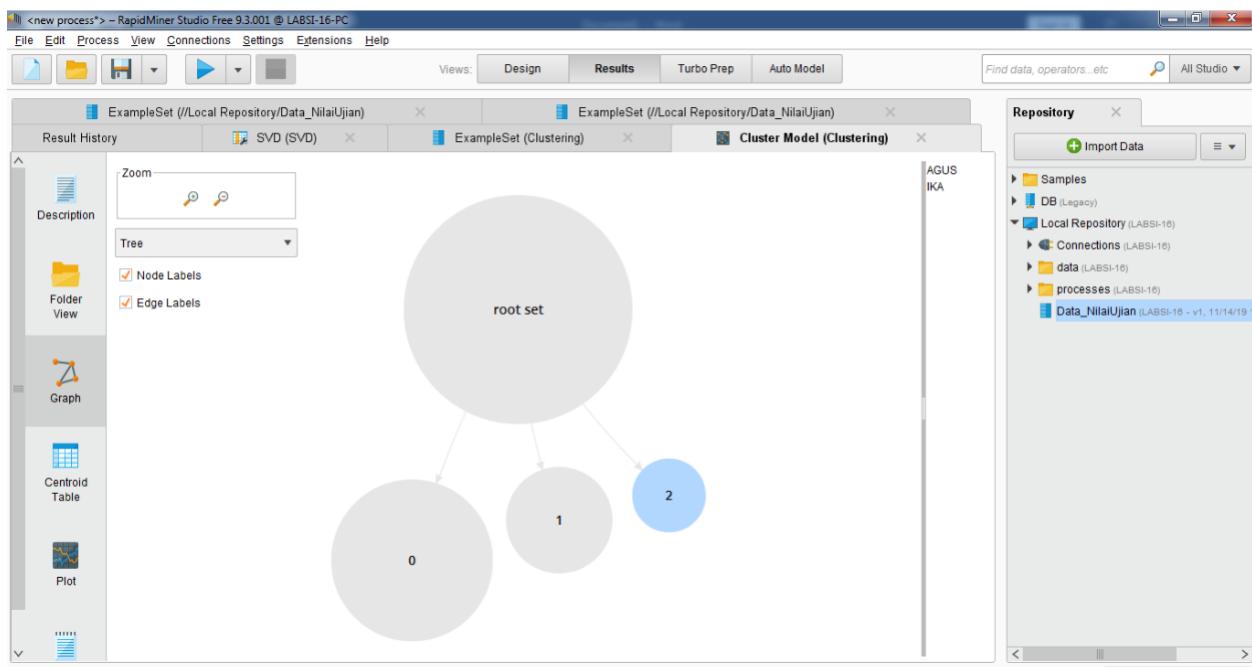
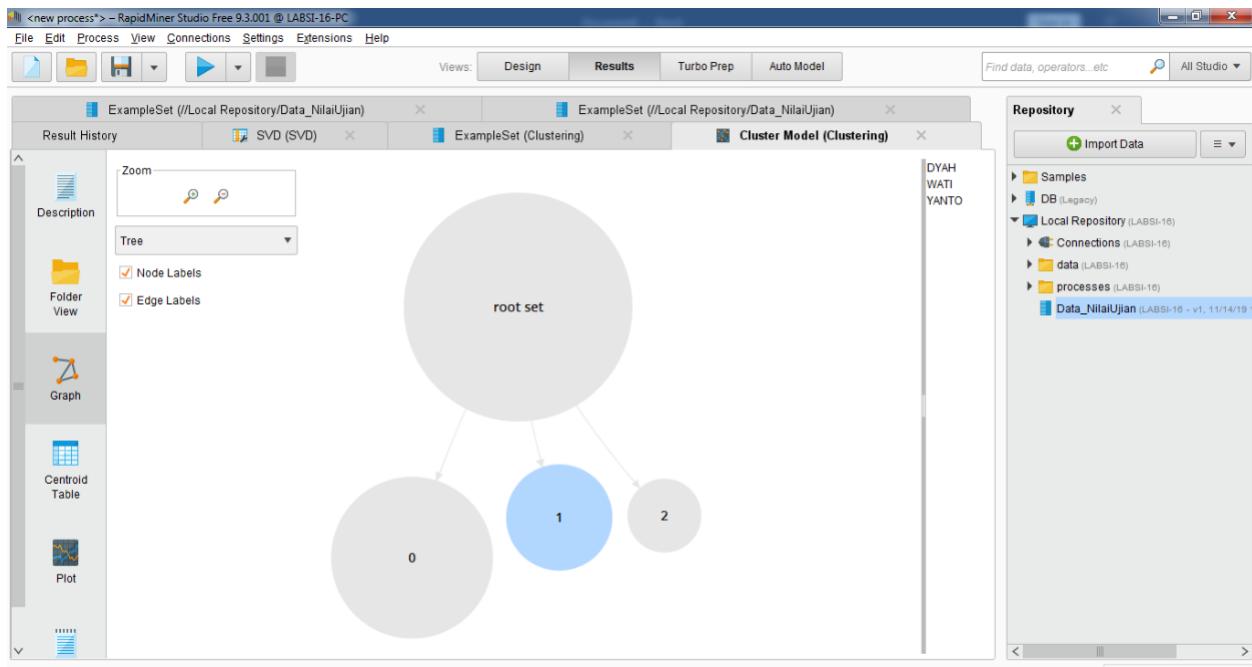
Row No.	NAMA	cluster ↑	BJIND	BJING
1	JOKO	cluster_0	8.540	8.400
3	SUSI	cluster_0	6.200	9.150
7	EKO	cluster_0	7.700	7.710
9	WAWAN	cluster_0	9	8.120
10	MAHMUD	cluster_0	9.810	9.580
4	DYAH	cluster_1	5.240	7.260
5	WATI	cluster_1	5.700	5.710
8	YANTO	cluster_1	6.600	5.700
2	AGUS	cluster_2	9.980	6.810
6	IKA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

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

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-16)
 - Connections (LABSI-16)
 - data (LABSI-16)
 - processes (LABSI-16)
 - Data_NilaiUjian (LABSI-16 - v1, 11/14/19)







Tugas

1. Tabel nilai ujian 3 siswa secara random

	A	B	C	D	E	F	G
1	NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA	
2	S_101	JOKO	9,95	5,40	7,41	8,32	
3	S_102	AGUS	9,37	5,91	8,56	6,43	
4	S_103	SUSI	8,77	5,14	5,38	5,94	
5	S_104	DYAH	7,62	6,02	5,38	9,02	
6	S_105	WATI	9,61	6,45	7,94	8,39	
7	S_106	IKA	7,72	7,22	6,24	8,89	
8	S_107	EKO	5,07	8,25	5,73	7,81	
9	S_108	YANTO	7,42	9,97	8,87	9,70	
10	S_109	WAWAN	5,50	7,04	8,91	8,33	
11	S_110	MAHMUD	8,82	9,13	8,51	9,64	
12	S_111	BUDI	9,17	8,05	5,74	5,55	
13	S_112	SANTI	6,77	5,11	5,52	6,80	
14	S_113	DIAN	7,85	9,90	9,37	5,10	
15	S_114	DANI	8,60	6,21	7,38	7,83	
16	S_115	AHMAD	6,31	8,64	9,23	6,14	
17	S_116	BAYU	8,86	6,67	8,81	5,35	
18	S_117	RISA	6,18	6,86	6,42	7,78	
19	S_118	RANI	9,04	8,00	9,82	7,16	
20	S_119	YANI	5,20	5,24	5,59	8,50	
21	S_120	RATIH	7,96	5,64	8,72	6,15	
22	S_121	INDAH	7,45	6,29	8,15	9,06	
23	S_122	JONO	6,76	8,89	6,39	8,09	
24	S_123	SARAH	8,51	7,64	6,95	6,06	
25	S_124	RAMA	6,42	6,07	7,63	5,89	
26	S_125	BAMBANG	9,06	7,71	8,52	7,41	
27	S_126	HADI	5,41	5,65	6,66	5,48	
28	S_127	NANA	5,81	8,43	7,01	6,43	
29	S_128	FEBRI	7,56	7,84	8,25	7,67	
30	S_129	DENI	9,51	9,82	7,64	6,70	

2. RapidMiner

Process View:

Results View:

Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Sing.
SVD 1	82.312	0.792	82.312	0.792
SVD 2	8.172	0.079	90.484	0.871
SVD 3	7.462	0.072	97.947	0.943
SVD 4	5.968	0.057	103.914	1.000

 The 'Repository' pane on the right lists various datasets and processes in the local repository."/>

Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Sing.
SVD 1	82.312	0.792	82.312	0.792
SVD 2	8.172	0.079	90.484	0.871
SVD 3	7.462	0.072	97.947	0.943
SVD 4	5.968	0.057	103.914	1.000

RapidMiner Studio Free 9.3.001 @ LABSI-16-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Repository Import Data

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

Cluster Model (Clustering) ExampleSet (/Local Repository/Tugas_NilaiUjian)

Result History SVD (SVD) ExampleSet (Clustering) ExampleSet (SVD)

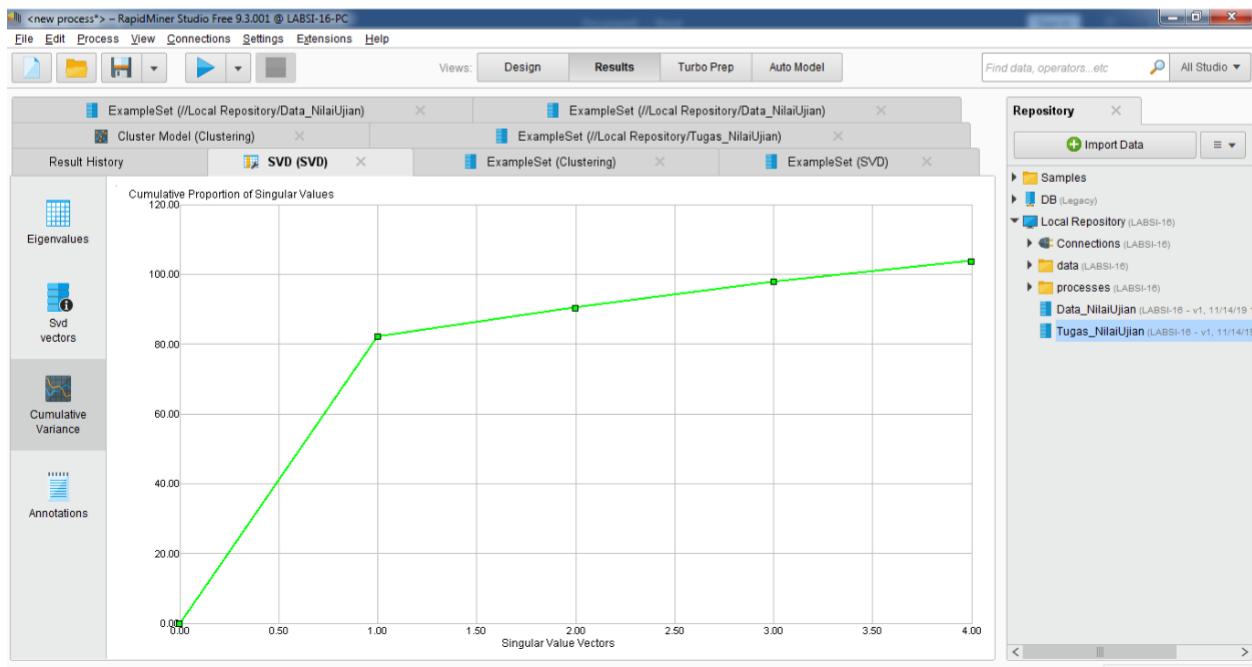
Eigenvalues

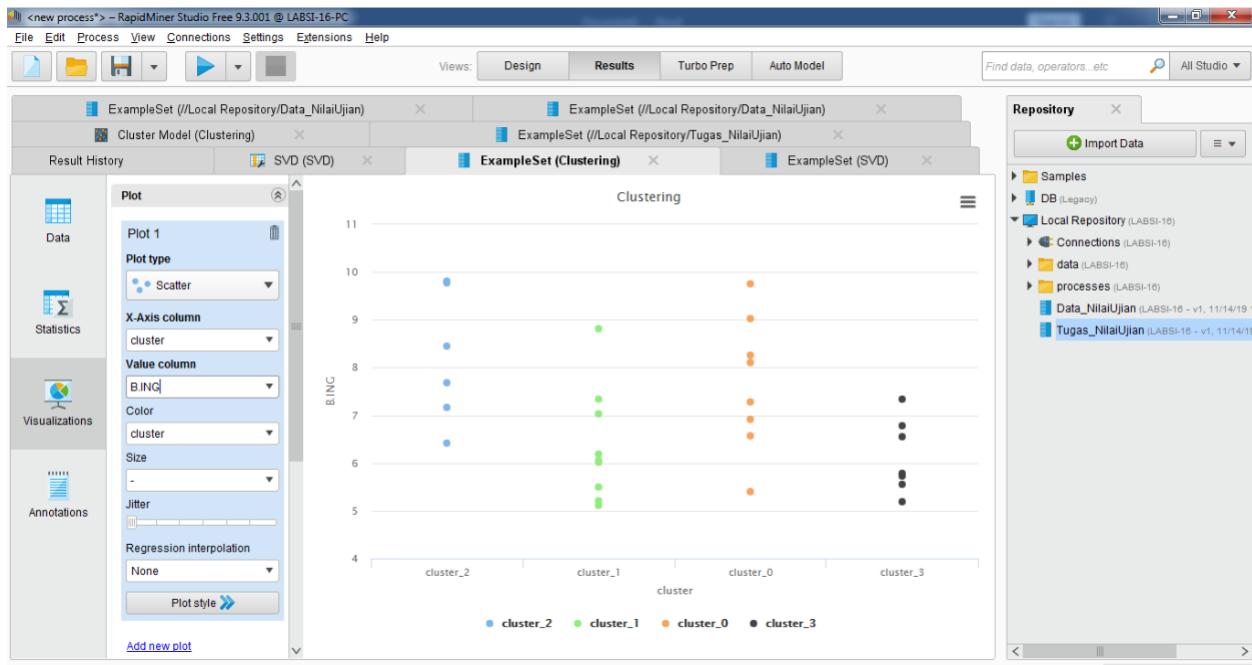
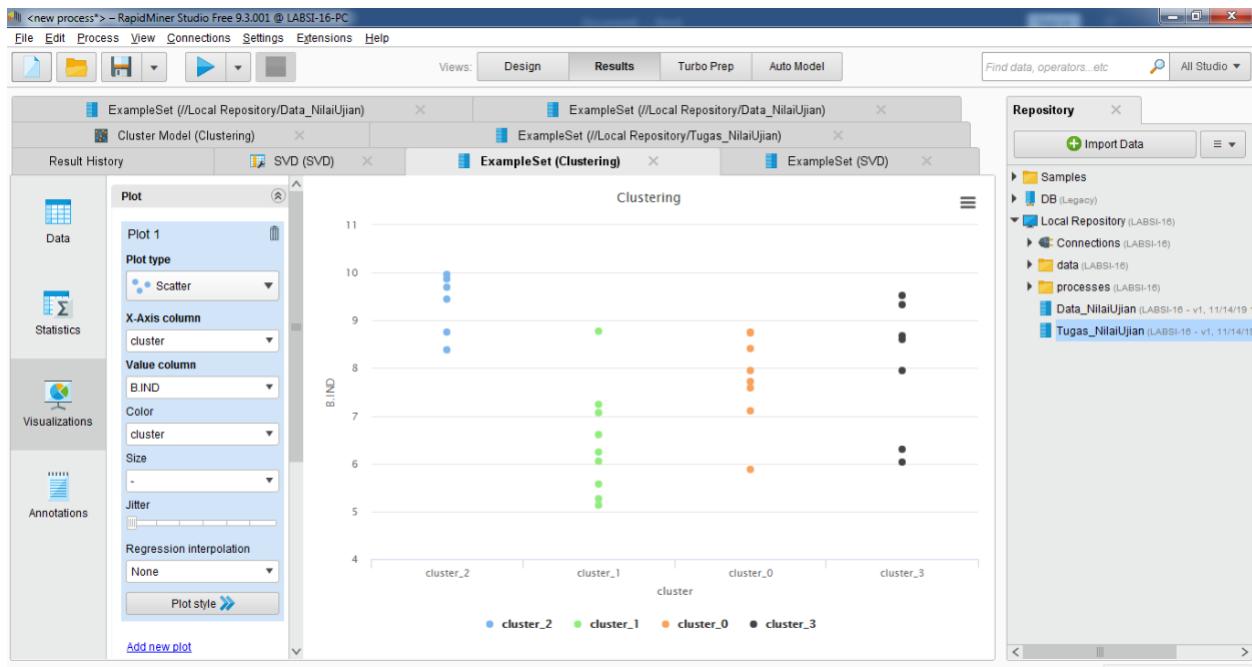
Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
B.IND	0.520	-0.111	0.489
B.ING	0.470	-0.770	-0.075
MTK	0.524	0.581	0.325
IPA	0.483	0.238	-0.806

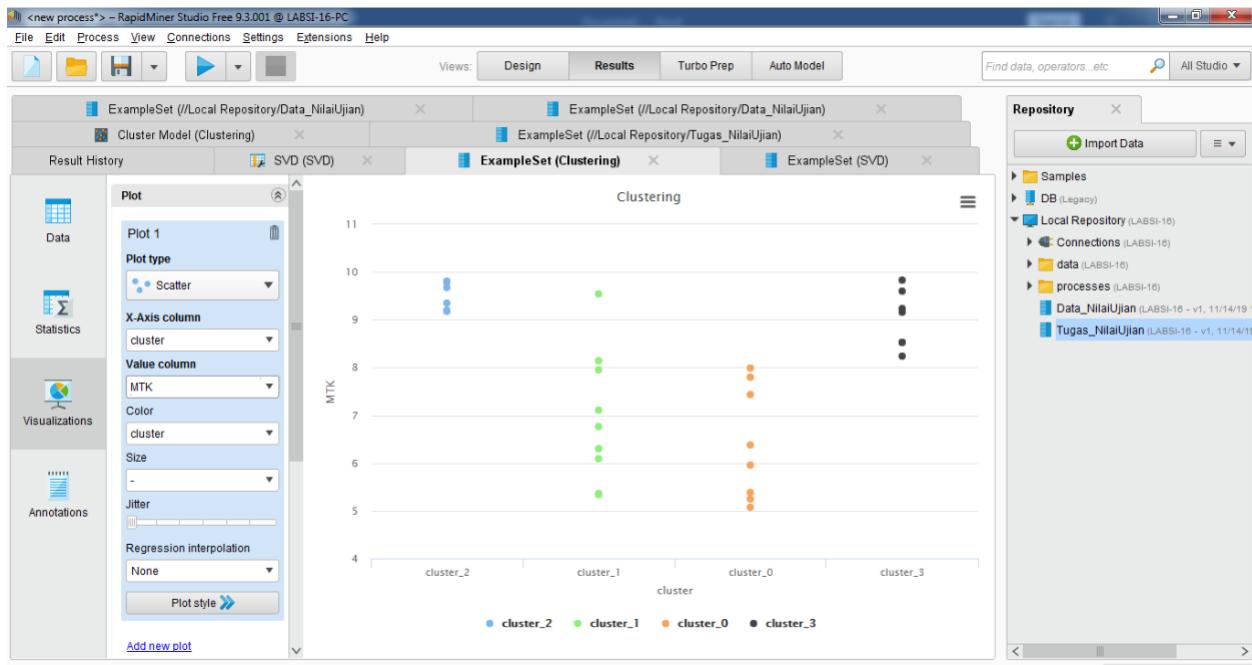
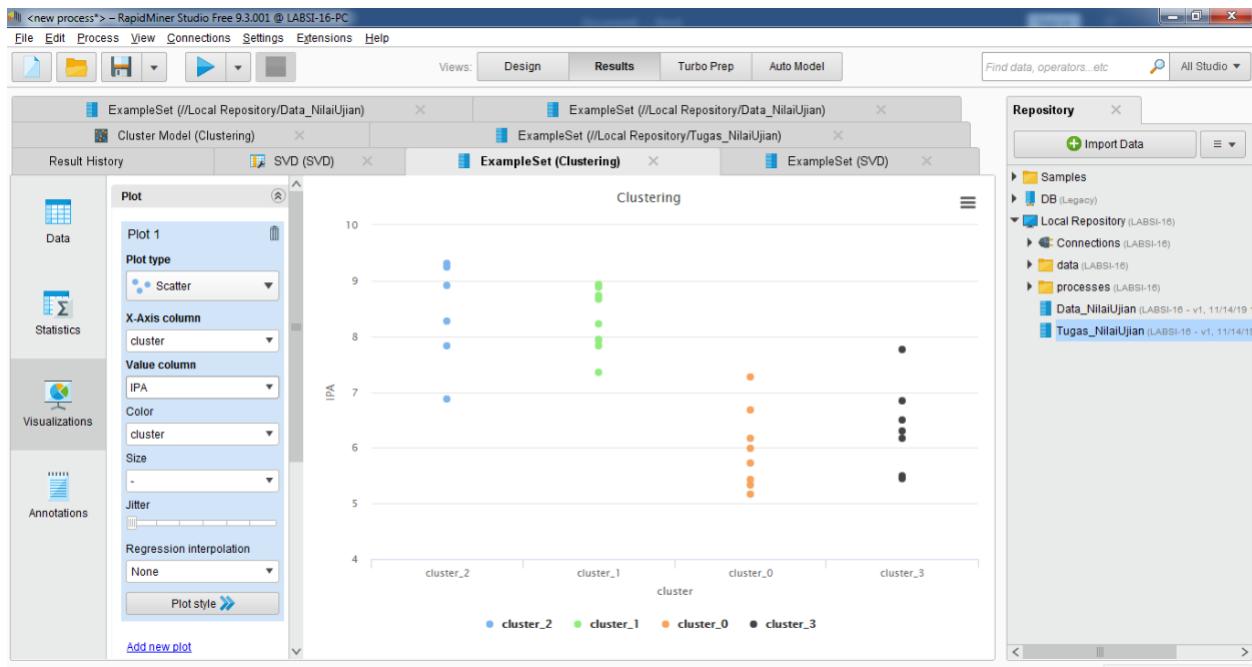
Svd vectors

Cumulative Variance

Annotations







RapidMiner Studio Free 9.3.001 @ LABSI-16-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-16)
 - Connections (LABSI-16)
 - data (LABSI-16)
 - processes (LABSI-16)
 - Data_NilaiUjian (LABSI-16 - v1, 11/14/19)
 - Tugas_NilaiUjian (LABSI-16 - v1, 11/14/19)

Result History SVD (SVD) ExampleSet (Clustering) ExampleSet (SVD)

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

Row No.	NAMA	cluster ↑	B.IND	B.JNG	MTK	IPA
3	SUSI	cluster_0	8.761	9.029	5.078	5.329
5	WATI	cluster_0	7.729	6.909	6.373	7.272
6	IKA	cluster_0	7.108	8.261	5.954	5.434
7	EKO	cluster_0	5.887	7.280	7.988	5.985
9	WAWAN	cluster_0	8.412	5.404	5.243	5.728
18	RANI	cluster_0	8.742	8.111	7.799	6.174
20	RATIH	cluster_0	7.584	9.748	5.375	6.686
23	SARAH	cluster_0	7.948	6.575	7.434	5.172
2	AGUS	cluster_1	8.766	6.193	6.296	8.662
8	YANTO	cluster_1	5.266	7.035	6.096	8.886
10	MAHMUD	cluster_1	5.568	5.494	6.760	7.929
12	SANTI	cluster_1	7.247	6.046	7.104	7.838
13	DIAN	cluster_1	6.235	8.819	7.954	8.229

ExampleSet (30 examples, 2 special attributes, 4 regular attributes)

RapidMiner Studio Free 9.3.001 @ LABSI-16-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-16)
 - Connections (LABSI-16)
 - data (LABSI-16)
 - processes (LABSI-16)
 - Data_NilaiUjian (LABSI-16 - v1, 11/14/19)
 - Tugas_NilaiUjian (LABSI-16 - v1, 11/14/19)

Result History SVD (SVD) ExampleSet (Clustering) ExampleSet (SVD)

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

Row No.	NAMA	cluster ↑	B.IND	B.JNG	MTK	IPA
13	DIAN	cluster_1	6.235	8.819	7.954	8.229
16	BAYU	cluster_1	7.061	6.022	8.134	8.938
22	JONO	cluster_1	6.607	7.338	5.336	7.949
24	RAMA	cluster_1	5.135	5.214	5.364	7.357
26	HADI	cluster_1	6.056	5.108	9.539	8.736
1	JOKO	cluster_2	8.384	9.815	9.782	6.875
11	BUDI	cluster_2	9.862	7.676	9.172	7.827
14	DANI	cluster_2	9.699	7.158	9.680	8.909
15	AHMAD	cluster_2	8.748	8.450	9.205	8.268
28	FEBRI	cluster_2	9.453	9.779	9.820	9.317
30	TONI	cluster_2	9.960	6.408	9.359	9.251
4	DYAH	cluster_3	9.338	6.785	9.153	5.438
17	RISA	cluster_3	8.679	5.779	8.231	7.768

ExampleSet (30 examples, 2 special attributes, 4 regular attributes)

Data View:

Row No.	NAMA	cluster ↑	B.IND	B.JNG	MTK	IPA
1	JOKO	cluster_2	8.384	9.815	9.782	6.875
11	BUDI	cluster_2	9.862	7.676	9.172	7.827
14	DANI	cluster_2	9.699	7.158	9.680	8.909
15	AHMAD	cluster_2	8.748	8.450	9.205	8.268
28	FEBRI	cluster_2	9.453	9.779	9.820	9.317
30	TONI	cluster_2	9.960	6.408	9.359	9.251
4	DYAH	cluster_3	9.338	6.785	9.153	5.438
17	RISA	cluster_3	8.679	5.779	8.231	7.768
19	YANI	cluster_3	9.516	6.542	9.608	6.306
21	INDAH	cluster_3	7.959	5.186	8.518	6.843
25	BAMBANG	cluster_3	6.303	5.548	8.530	5.503
27	NANA	cluster_3	8.606	5.720	9.228	6.506
29	DENI	cluster_3	6.038	7.337	9.835	6.172

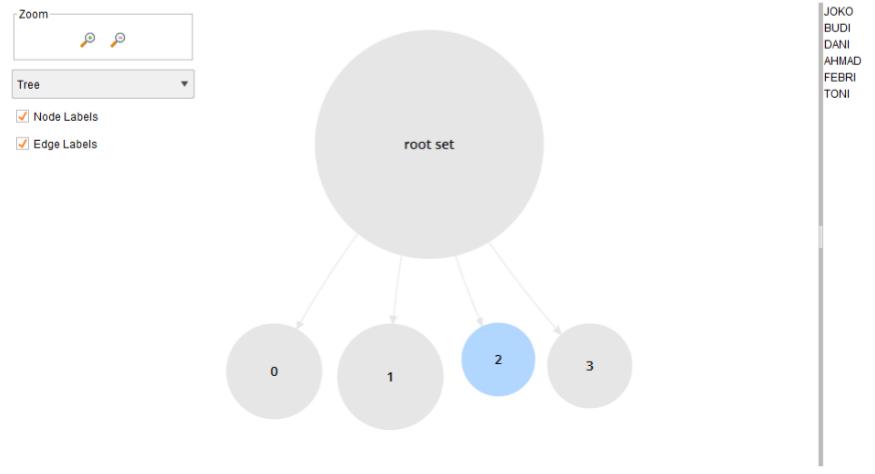
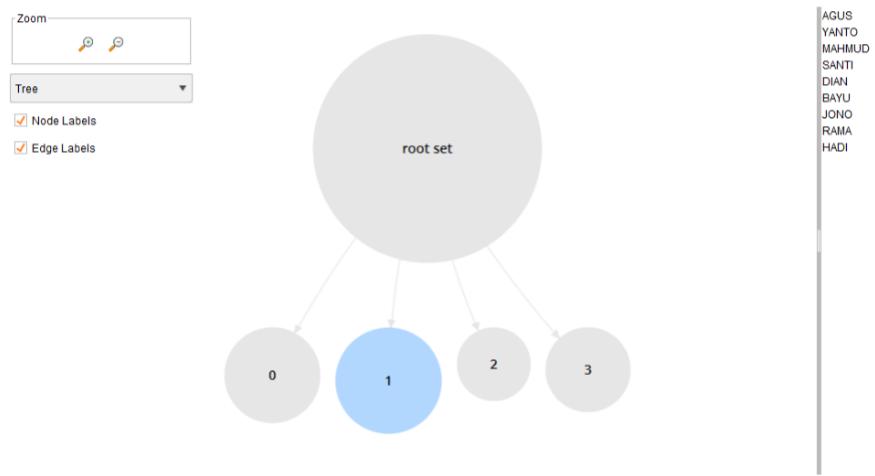
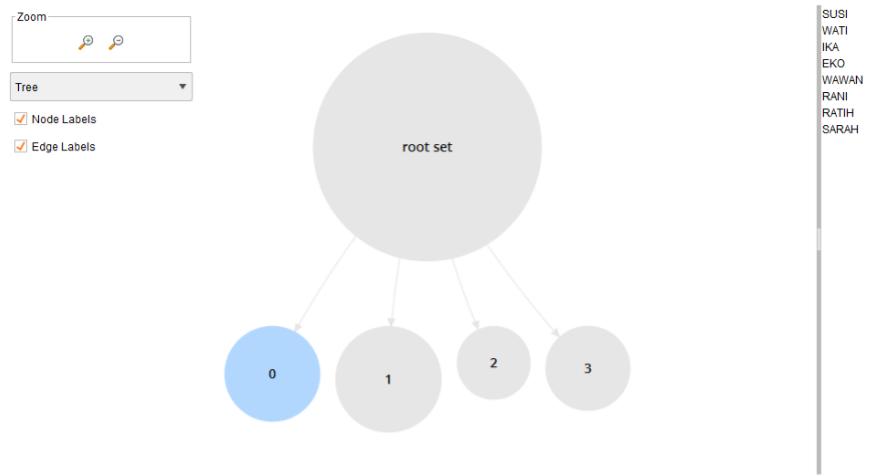
ExampleSet (30 examples, 2 special attributes, 4 regular attributes)

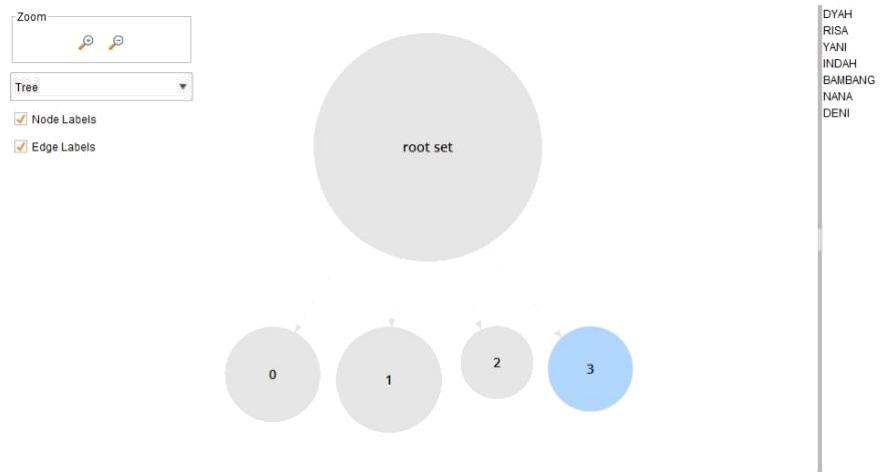
Cluster Model

Cluster 0: 8 items
Cluster 1: 9 items
Cluster 2: 6 items
Cluster 3: 7 items
Total number of items: 30

3. Nama siswa yang terdapat dalam cluster :

- Cluster 0 : Susi, Wati, Ika, Eko, Wawan, Rani, Ratih, Sarah
- Cluster 1 : Agus, Yanto, Mahmud, Santi, Dian, Bayu, Jono, Rama, Hadi
- Cluster 2 : Joko, Budi, Dani, Ahmad, Febri, Toni
- Cluster 3 : Dyah, Risa, Yani, Indah, Bambang, Nana, Deni



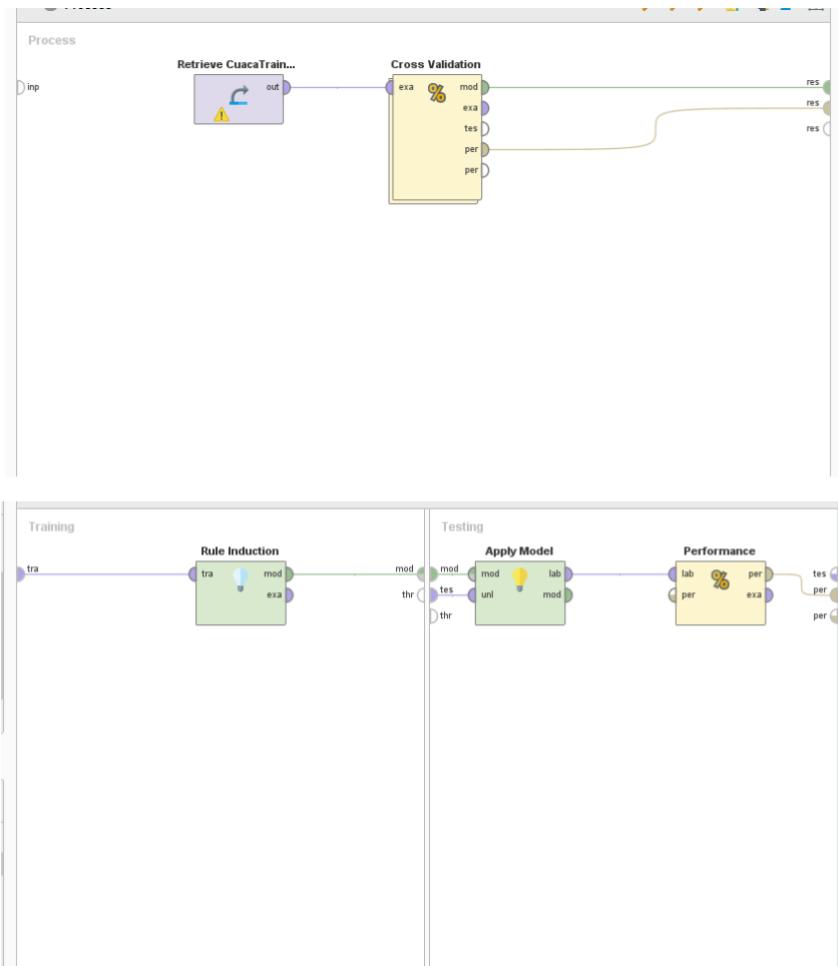


MODUL 11



Kegiatan

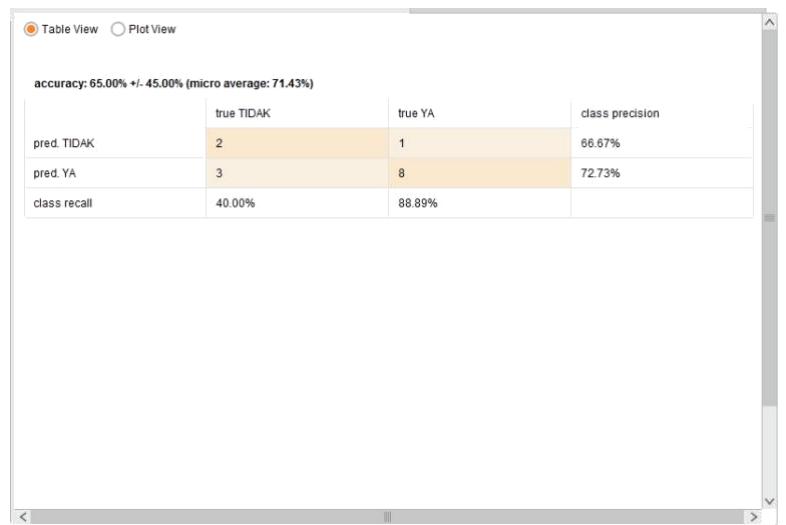
1. Induksi Aturan Cuaca



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.
```



2. Aturan Asosiasi Data Cuaca



a) Frequent Item Set

The screenshot shows the RapidMiner interface with the 'FrequentItemSets (FP-Growth)' operator selected. The results table displays frequent item sets of size 1 to 4. The columns are Size, Support, Item 1, Item 2, Item 3, and Item 4. The data includes:

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		

The screenshot shows the RapidMiner interface with the 'FrequentItemSets (FP-Growth)' operator selected. The results table displays frequent item sets of size 2 to 4. The columns are Size, Support, Item 1, Item 2, Item 3, and Item 4. The data includes:

Size	Support	Item 1	Item 2	Item 3	Item 4
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		
2	0.143	Suhu	Cuaca = Mendung		
3	0.071	Kelembaban_udara	Berangin	Suhu	
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

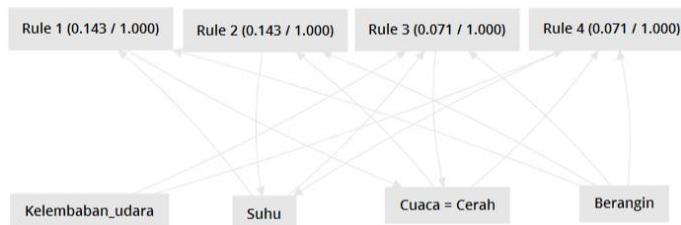
b) Association Rules

i. Table View

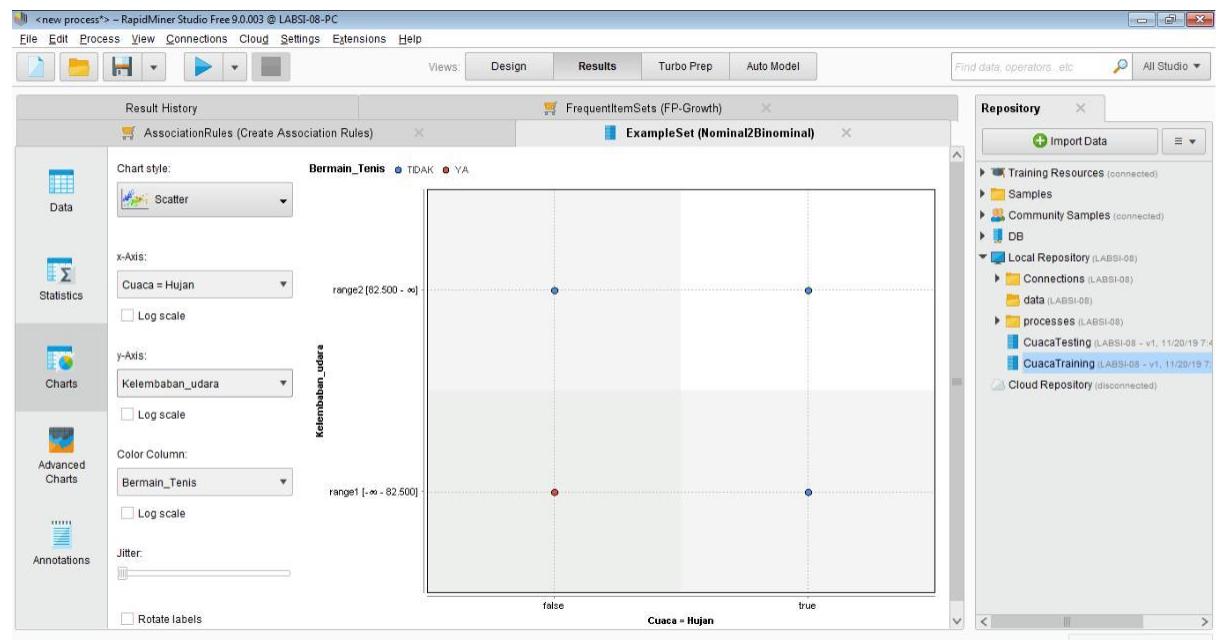
No.	Premises	Conclusion	Support
1	Berangin, Suhu	Cuaca = Cerah	0.143
2	Berangin, Cuaca = Cerah	Suhu	0.143
3	Kelembaban_udara, Berangin, Suhu	Cuaca = Cerah	0.071
4	Kelembaban_udara, Berangin, Cuaca = Cerah	Suhu	0.071

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

ii. Graph View



c) Example set





Tugas

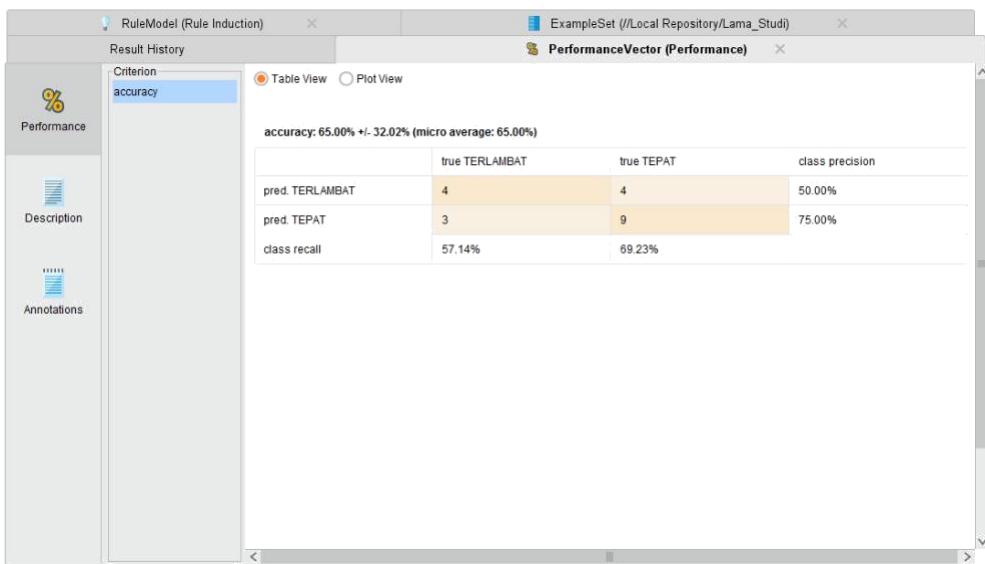
1. Rule Model dan Nilai Performance Vector



RuleModel

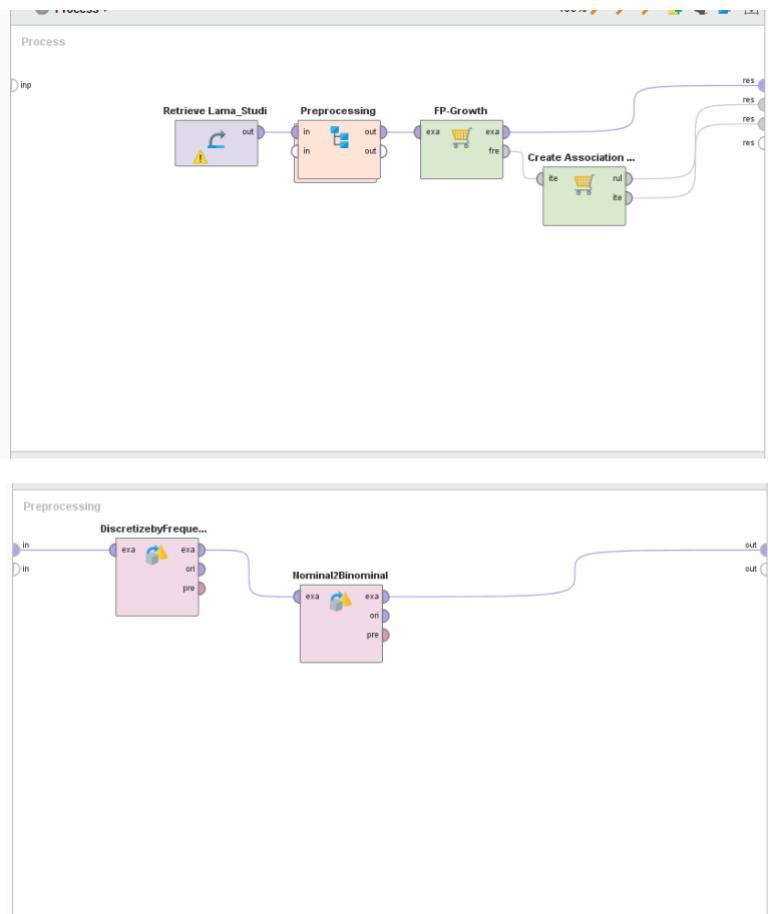
```
if Rerata_SKS > 18.500 then TEPAT  (2 / 10)
if Gender = PRIA then TERLAMBAT  (4 / 0)
if Jurusan_SMA = IPA then TEPAT  (0 / 2)
if Jurusan_SMA = IPS then TERLAMBAT  (1 / 0)
else TEPAT  (0 / 0)
```

correct: 17 out of 19 training examples.



2. Nilai :

a) $\text{number of bins} = 2$



Views: Design Results Turbo Prep Auto Model

ExampleSet (Nominal2Binomial) ExampleSet (/Local Repository/Lama_Studi)

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

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

Size Support Item 1 Item 2 Item 3 Item 4 Item 5

Min. Size: 1 Max. Size: 5

Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
1	0.750	Gender				
1	0.500	Jurusan_SMA = ...				
1	0.300	Asal_Sekolah				
1	0.300	Jurusan_SMA = ...				
1	0.250	Asisten				
1	0.250	Rerata_SKS				
1	0.200	Jurusan_SMA = ...				
2	0.350	Gender	Jurusan_SMA = ...			
2	0.250	Gender	Asal_Sekolah			
2	0.250	Gender	Jurusan_SMA = ...			
2	0.200	Gender	Asisten			
2	0.250	Gender	Rerata_SKS			
2	0.150	Gender	Jurusan_SMA = ...			
2	0.150	Jurusan_SMA = ...	Asal_Sekolah			
2	0.200	Jurusan_SMA = ...	Asisten			

Views: Design Results Turbo Prep Auto Model

ExampleSet (Nominal2Binomial) ExampleSet (/Local Repository/Lama_Studi)

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

Show rules matching all of these conclusions:

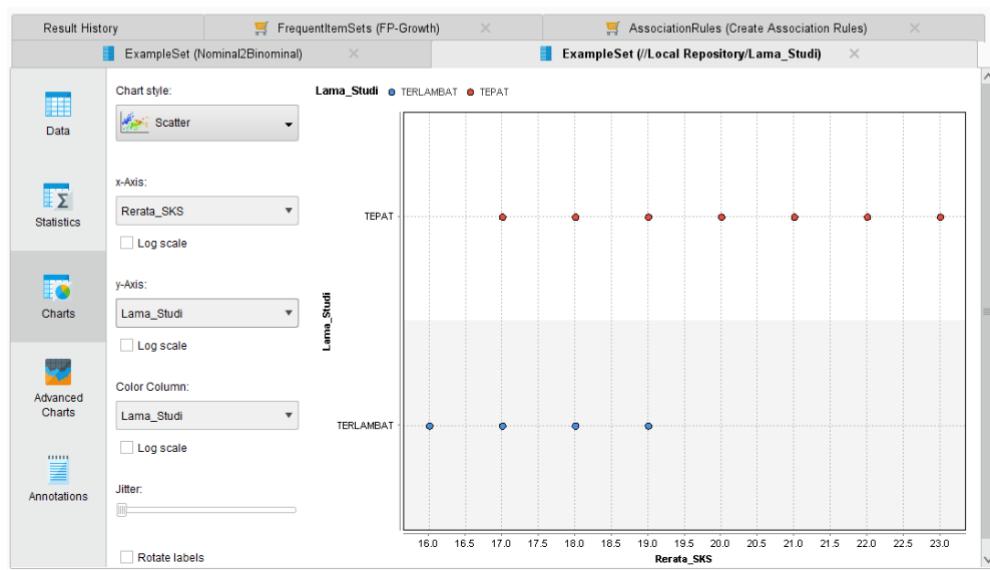
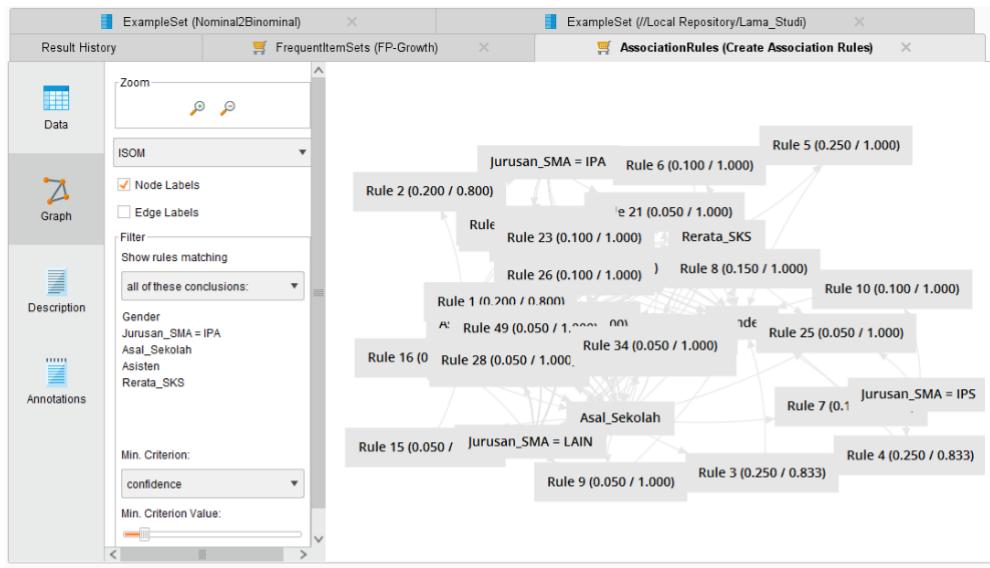
Gender
Jurusan_SMA = IPA
Asal_Sekolah
Asisten
Rerata_SKS

No. Premises Conclusion Support

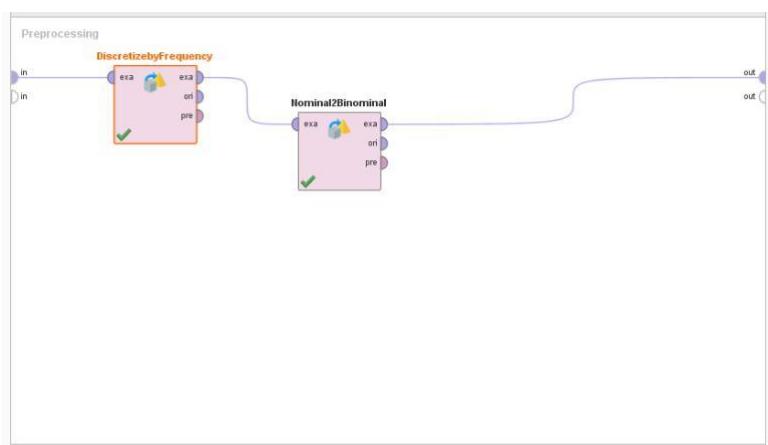
Min. Criterion: confidence

Min. Criterion Value: 0.05

No.	Premises	Conclusion	Support
17	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050
19	Asisten, Jurusan_SMA = LAIN	Rerata_SKS	0.050
26	Gender, Asal_Sekolah, Asisten	Rerata_SKS	0.100
33	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Rerata_SKS	0.050
34	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050
38	Asisten, Jurusan_SMA = LAIN	Gender, Rerata_SKS	0.050
39	Gender, Asisten, Jurusan_SMA = LAIN	Rerata_SKS	0.050
44	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS	0.050
45	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS	0.050
46	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Rerata_SKS	0.050
50	Gender, Jurusan_SMA = IPA, Asal_Sekolah, Asisten	Rerata_SKS	0.050
54	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Asisten, Rerata_SKS	0.050
55	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS	0.050
56	Asisten, Jurusan_SMA = LAIN	Gender, Asal_Sekolah, Rerata_SKS	0.050
57	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS	0.050



b) number of bins = 3



ExampleSet (Nominal2Binomial) ExampleSet (//Local Repository/Lama_Studi)

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

Data

	Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
1	0.750	Gender					
1	0.500	Jurusan_SMA = ...					
1	0.400	Rerata_SKS = r...					
1	0.350	Rerata_SKS = r...					
1	0.300	Asal_Sekolah					
1	0.300	Jurusan_SMA = ...					
1	0.250	Asisten					
1	0.250	Rerata_SKS = r...					
1	0.200	Jurusan_SMA = ...					
2	0.350	Gender	Jurusan_SMA = ...				
2	0.200	Gender	Rerata_SKS = r...				
2	0.300	Gender	Rerata_SKS = r...				
2	0.250	Gender	Asal_Sekolah				
2	0.250	Gender	Jurusan_SMA = ...				
2	0.200	Gender	Asisten				

Annotations

No. of Sets: 85
Total Max. Size: 5
Min. Size: 1
Max. Size: 5
Contains Item:
Update View

ExampleSet (Nominal2Binomial) ExampleSet (//Local Repository/Lama_Studi)

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

Data

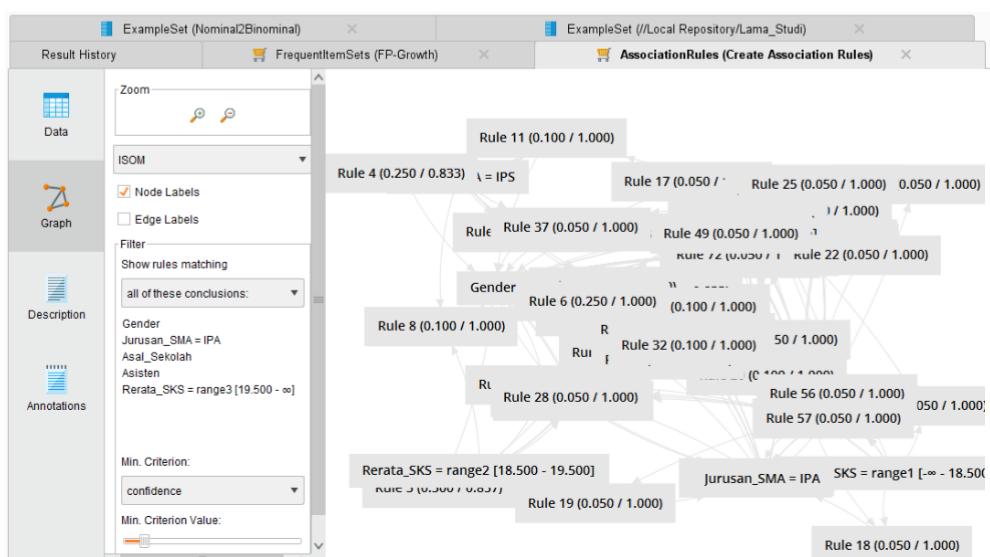
Show rules matching all of these conclusions:

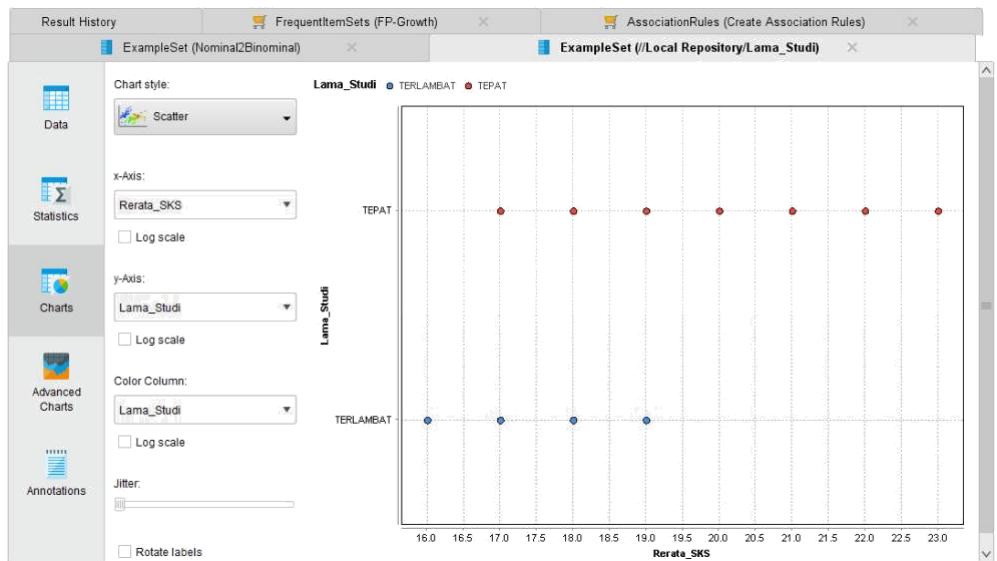
- Gender
- Jurusan_SMA = IPA
- Asal_Sekolah
- Asisten
- Rerata_SKS = range3 [19.500 - ∞]

The item Rerata_SKS = range3 [19.500 - ∞] is selected.

Min. Criterion: confidence
Min. Criterion Value: 0.05

No.	Premises	Conclusion	Support
3	Asal_Sekolah	Gender	0.250
4	Jurusan_SMA = IPS	Gender	0.250
5	Rerata_SKS = range2 [18.500 - 19.500]	Gender	0.300
6	Rerata_SKS = range3 [19.500 - ∞]	Gender	0.250
7	Jurusan_SMA = IPA, Rerata_SKS = range3 [19.50...	Gender	0.100
8	Rerata_SKS = range2 [18.500 - 19.500], Jurusan_...	Gender	0.100
9	Rerata_SKS = range2 [18.500 - 19.500], Asisten	Gender	0.050
10	Rerata_SKS = range2 [18.500 - 19.500], Jurusan_...	Gender	0.050
11	Asal_Sekolah, Jurusan_SMA = IPS	Gender	0.100
12	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.150
13	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.050
	Jurusan_SMA = IPS, Rerata_SKS = range3 [19.50...	Gender	0.100
15	Asisten, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.150
16	Asisten, Jurusan_SMA = LAIN	Gender	0.050
17	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA ...	Gender	0.050





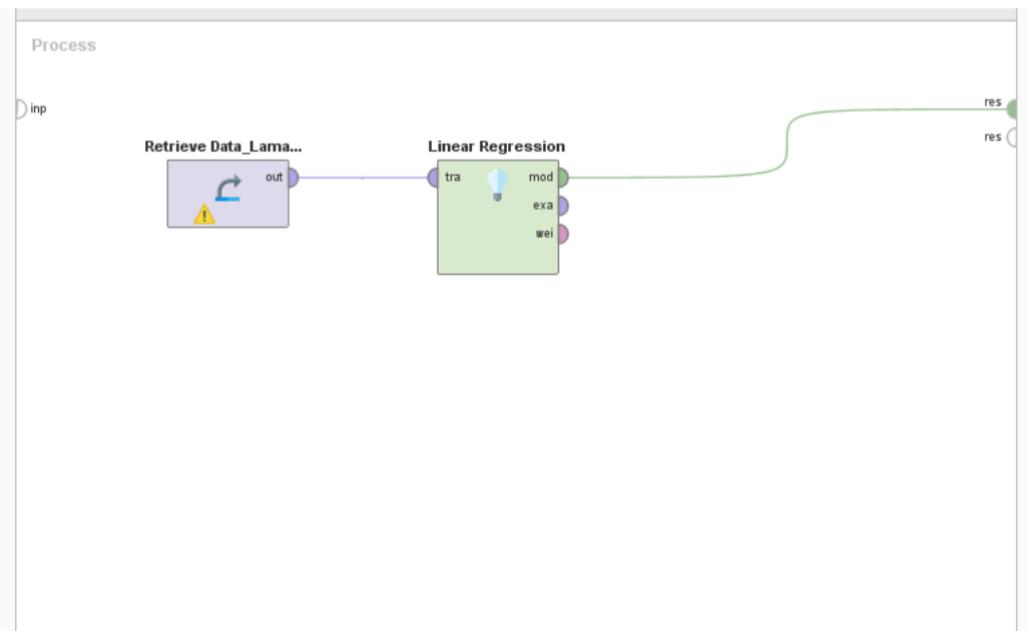
MODUL 12



Kegiatan

1. Mencari nilai t-hitung dan model regresi linear

	A	B	C	D	E
1	NO_SISWA	NAMA	LAMA BELAJAR (JAM)	NILAI	
2	S-101	JOKO	15	783	
3	S-102	AGUS	18	877	
4	S-103	SUSI	7	505	
5	S-104	DYAH	9	860	
6	S-105	WATI	15	968	
7	S-106	IKA	17	793	
8	S-107	EKO	10	752	
9	S-108	YANTO	5	571	
10	S-109	WAWAN	8	667	
11	S-110	MAHMUD	15	723	
12					



Result History | **LinearRegression (Linear Regression)** | **ExampleSet (/Local Repository/Data_LamaBelajarNilaiUjian)**

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

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB
- Local Repository (user)
 - data (user)
 - processes (user)
 - Data_LamaBelajarNilaiUjian (user -)
- Cloud Repository (disconnected)

Table View

Result History | **LinearRegression (Linear Regression)** | **ExampleSet (/Local Repository/Data_LamaBelajarNilaiUjian)**

LinearRegression

21.608 * LAMA BELAJAR (JAM)
+ 492.769

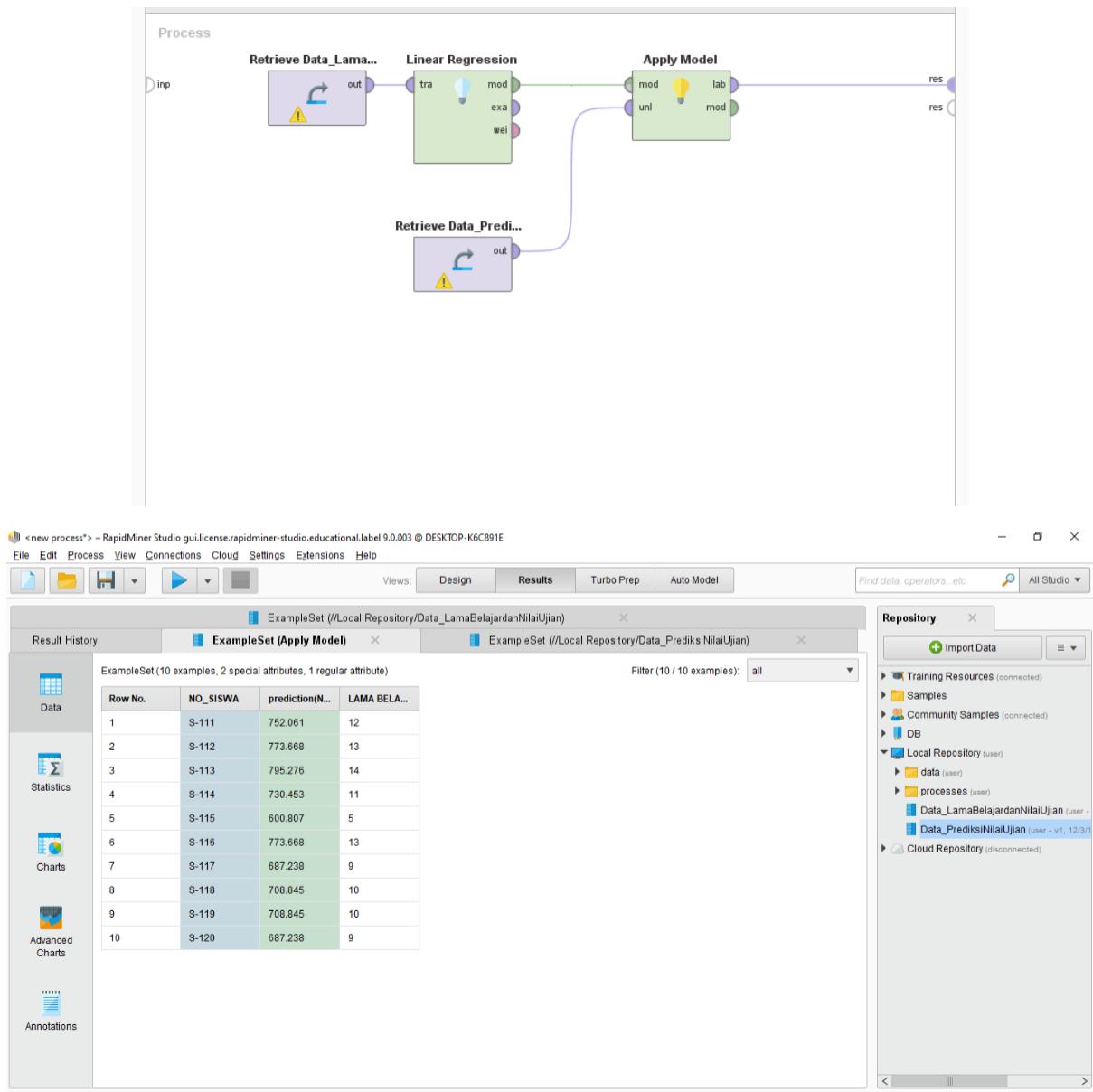
Repository

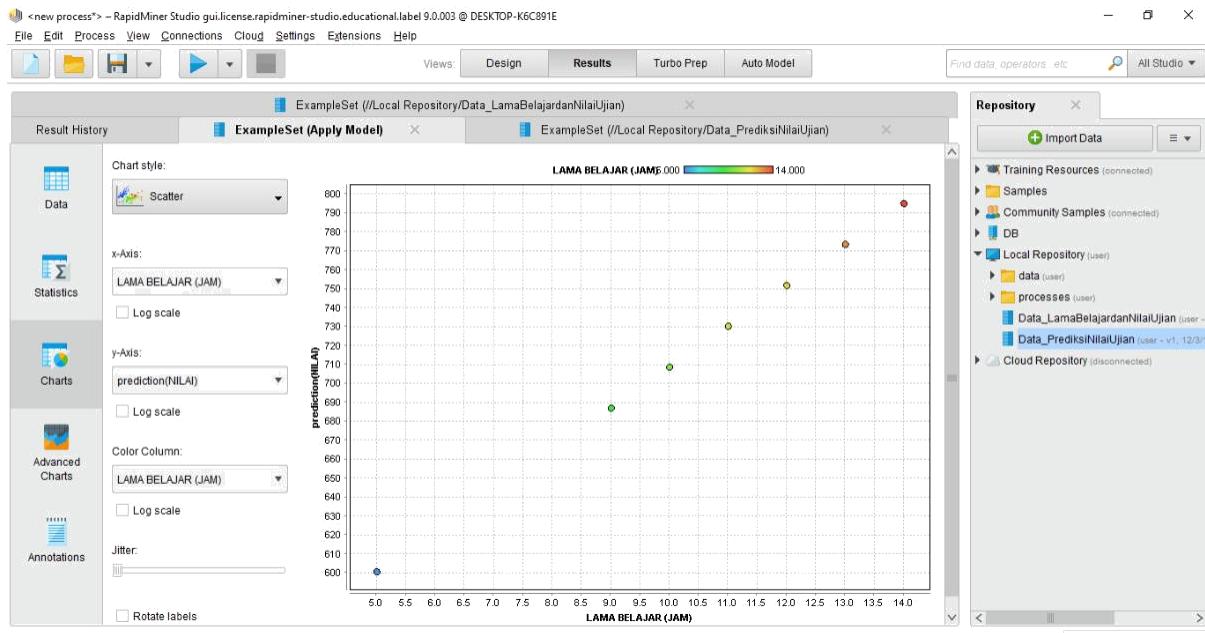
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB
- Local Repository (user)
 - data (user)
 - processes (user)
 - Data_LamaBelajarNilaiUjian (user -)
- Cloud Repository (disconnected)

Text View

2. Mencari nilai t dan model regresi linier menggunakan RapidMiner

	A	B	C	D
1	NO_SISWA	NAMA	LAMA BELAJAR (JAM)	
2	S-111	BUDI	12	
3	S-112	SANTI	13	
4	S-113	DIAN	14	
5	S-114	DANI	11	
6	S-115	AHMAD	5	
7	S-116	BAYU	13	
8	S-117	RISA	9	
9	S-118	RANI	10	
10	S-119	YANI	10	
11	S-120	RATIH	9	
12				





3. Pembuktian Model Regresi

	A	B	C	D	E	F
1	NO_SISWA	NAMA	LAMA BELAJAR (JAM)	Prediction(NILAI) Tabel	Prediction(NILAI) Model Regresi	
2	S-111	BUDI	12	752,061	752,065	
3	S-112	SANTI	13	773,668	773,673	
4	S-113	DIAN	14	795,276	795,281	
5	S-114	DANI	11	730,453	730,457	
6	S-115	AHMAD	5	600,807	600,809	
7	S-116	BAYU	13	773,668	773,673	
8	S-117	RISA	9	687,238	687,241	
9	S-118	RANI	10	708,845	708,849	
10	S-119	YANI	10	708,845	708,849	
11	S-120	RATIH	9	687,238	687,241	
12						
13						

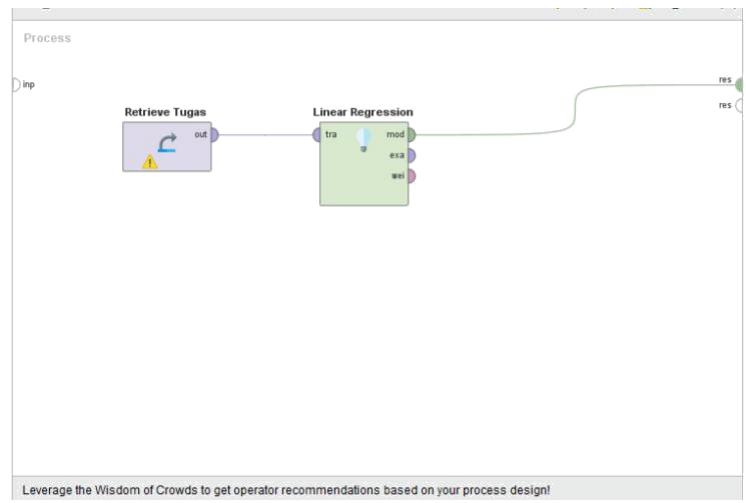


Tugas

1. Excel

	A	B	C	D	E
1	NO. RESPONDEN	PENDAPATAN (RUPIAH)	JUMLAH ANGGOTA KELUARGA	DAYA BELI (RUPIAH)	
2	1	1.000.000	6	834.000	
3	2	1.400.000	7	1.200.000	
4	3	200.000	3	134.000	
5	4	1.400.000	6	1.167.000	
6	5	500.000	3	334.000	
7	6	1.700.000	5	1.360.000	
8	7	400.000	3	267.000	
9	8	1.900.000	5	1.520.000	
10	9	300.000	3	200.000	
11	10	500.000	4	375.000	
12	11	700.000	7	600.000	
13	12	1.900.000	3	1.267.000	
14	13	800.000	4	600.000	
15	14	1.500.000	4	1.125.000	
16	15	1.300.000	7	1.115.000	
17					
18					
19					

2. Proses Regresi Linier Sederhana



a. Table View

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

b. Text View

LinearRegression

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

3. Berdasarkan aturan statistik, variable x tidak mempengaruhi secara signifikan terhadap y karena nilai t-hitung > t-table

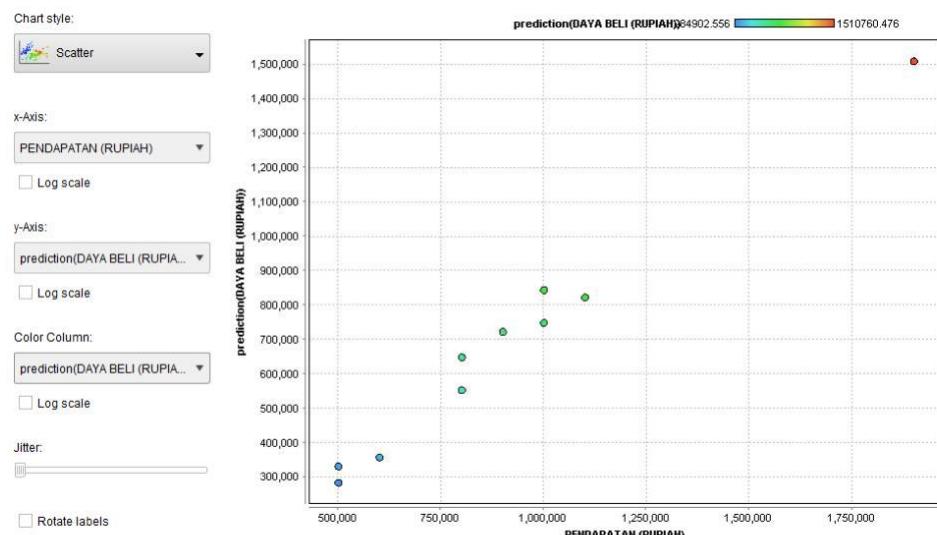
4. Model persamaan regresi linier sederhana yang terbentuk

5. Data Testing

A	B	C	D	E	F
1	NO. RESPONDEN	PENDAPATAN (RUPIAH)	JUMLAH ANGGOTA KELUARGA	Prediction(Daya Beli(Rupiah)) Tabel	Model Regresi
2					
3	1	900.000	5	723933,263	723915,633
4	2	800.000	3	554416,056	554400,385
5	3	500.000	2	284902,556	284892,761
6	4	1.900.000	6	1510760,476	1510723,257
7	5	600.000	2	358804,515	358792,761
8	6	800.000	5	650031,304	650015,633
9	7	1.000.000	6	845642,845	845623,257
10	8	1.100.000	4	823929,557	823908,009
11	9	1.000.000	4	750027,598	750008,009
12	10	500.000	3	332710,179	332700,385
13					
14					

6. Plot View

- a) x-Axis = Pendapatan (Rupiah),
y-Axis = Prediction (Daya Beli (Rupiah)),
Color Column = Prediction (Daya Beli (Rupiah))



- b) x-Axis = Jumlah Anggota Keluarga, y-Axis = Prediction (Daya Beli (Rupiah)), Color Column = Prediction (Daya Beli (Rupiah))

