

**MODUL GABUNGAN  
PRAKTIKUM  
DATA WAREHOUSING DAN DATA MINING**

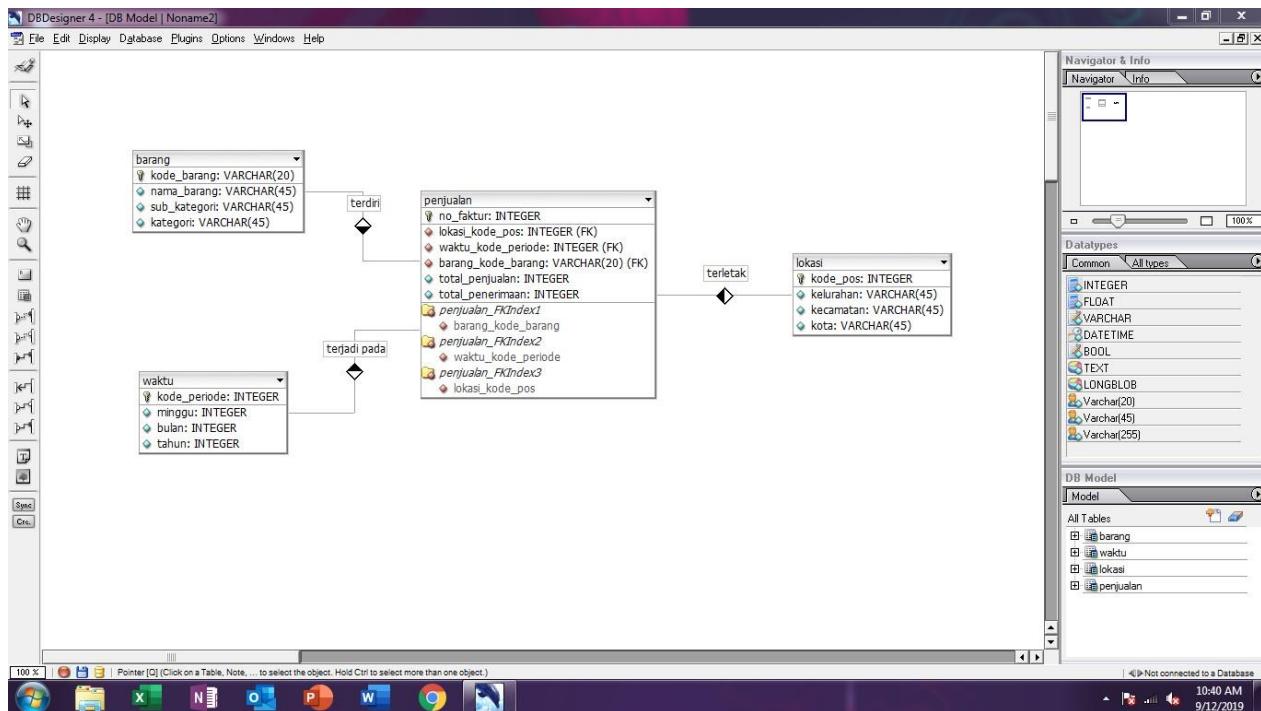


**ROSSANTI KUSUMADEWI (L200170092)**

**PROGRAM STUDI INFORMATIKA  
FAKULTAS KOMUNIKASI DAN INFORMATIKA  
UNIVERSITAS MUHAMMADIYAH SURAKARTA**

**2019**

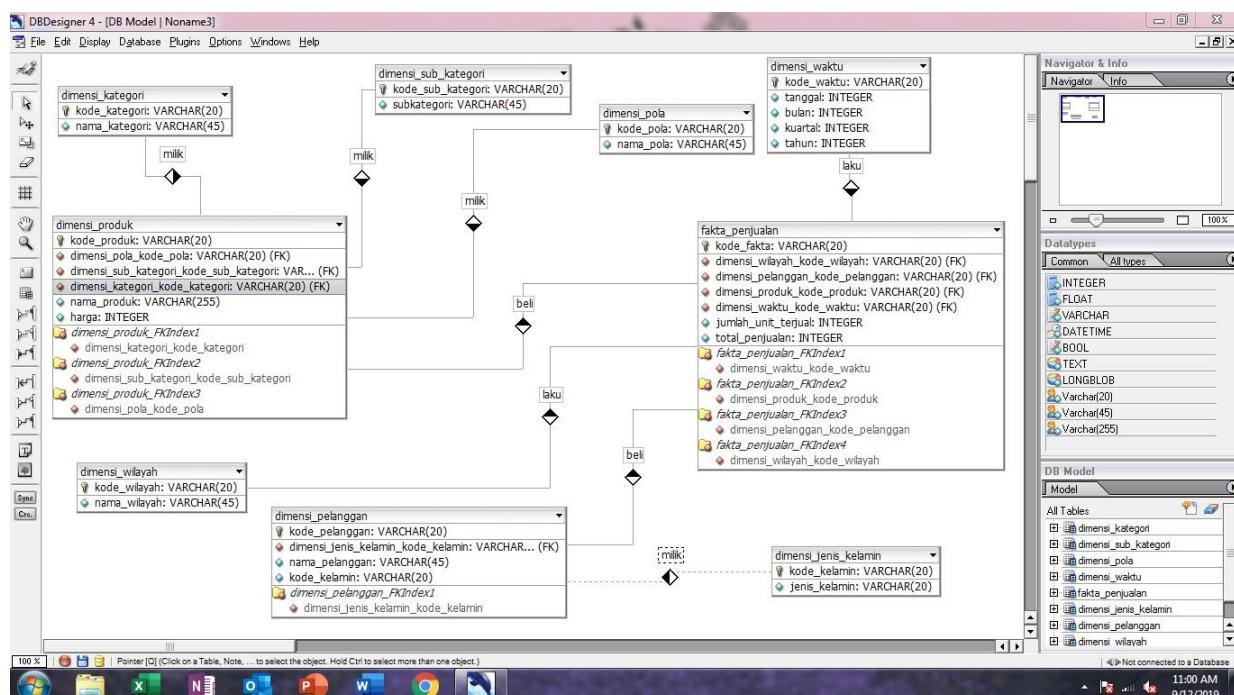
NAMA : ROSSANTI KUSUMADEWI  
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MODUL : 1



NAMA : ROSSANTI KUSUMADEWI

NIM : L200170092

MODUL : 5



## MODUL V

### PIVOT TABLE DAN CHART

#### **D. 1. Kegiatan 1 : Membuat Pivot Table**

1. Membuat data Excel dan menyimpannya dengan nama '**Fakta\_Penjualan.xls**'.

**2. Membuat Pivot Table dengan menggunakan data tersebut.**

The screenshot shows the 'Create PivotTable' dialog box in Microsoft Excel. The dialog box is titled 'Create PivotTable' and contains the following settings:

- Choose the data that you want to analyze:**
  - Select a table or range: Sheet1!\$A\$1:\$K\$21
  - Use an external data source: Choose Connection...
  - Use this workbook's Data Model
- Choose where you want the PivotTable report to be placed:**
  - New Worksheet
  - Existing Worksheet: Location: [empty]
- Choose whether you want to analyze multiple tables:**
  - Add this data to the Data Model

At the bottom right of the dialog box are the 'OK' and 'Cancel' buttons. The background shows a spreadsheet with two tables of data. The first table has columns: bulan, kuartal, tahun, nama\_produk. The second table has columns: kelamin, nama\_wilayah, jumlah, harga. The status bar at the bottom of the Excel window shows: Average: 33695,34 Count: 231 Sum: 3369534.

**3. Menampilkan data Pivot Table dengan mencoba kombinasi tahun, nama\_subkategori, dan jumlah.**

The screenshot shows a PivotTable named 'PivotTable1' on Sheet2 of the 'Fakta\_Penjualan - Excel' workbook. The PivotTable displays data grouped by year (2010, 2011, 2012) and subcategory (Bahan, Batik, Bolero, Celana, Jam, Jarik, kaos, Rok, Sarimbit, Standar). The data is summarized by the 'Sum of jumlah' field. The PivotTable Tools ribbon is open, showing various options for analyzing, designing, and calculating the data. The PivotTable Fields pane on the right lists the available fields: bulan, kuartal, tahun, nama\_produk, and nama\_subkategori. The status bar at the bottom shows: Average: 33695,34 Count: 231 Sum: 3369534.

## D. 2. Kegiatan 2 : Menambahkan Tipe Summary Baru

1. Menambahkan field **jumlah** ke kotak **Value** (karena sudah ada field jumlah sebelumnya, maka field dengan nama yang sama di kotak yang sama akan memiliki tambahan karakter berupa angka di akhiran kata, pada kasus ini **jumlah2** atau **sum of jumlah2**).

	A	B	C	D	E	F	G	H	I
4		2010		2011		2012		Total Sum of jumlah	Total Count of jumlah2
5	Row Labels	Sum of jumlah	Count of jumlah2	Sum of jumlah	Count of jumlah2	Sum of jumlah	Count of jumlah2		
6	Bahan	1	1	8	1	8	2	17	4
7	Batik					1	1	1	1
8	Bolero			1	1			1	1
9	Celana	17	1			17	1	34	2
10	Hem	5	1	8	2	4	2	17	5
11	Jam					44	1	44	1
12	Jarik					4	1	4	1
13	kaos			1	1	14	1	15	2
14	Rok					1	1	1	1
15	Sarimbit			1	1			1	1
16	Standar			2	1			2	1
17	Grand Total	23	3	21	7	93	10	137	20
18									
19									
20									
21									
22									
23									
24									
25									
26									

2. Mengubah jumlah nilai penjualan yang terjadi (**sum**) pada **jumlah2**, menjadi

jumlah transaksi yang terjadi (count).

The screenshot shows a Microsoft Excel window titled "Fakta\_Penjualan - Excel". The ribbon tabs are visible at the top, including Home, Insert, Page Layout, Formulas, Data, Review, View, Analyze, Design, and Tell me what you want to do. The Home tab is selected.

The main area displays a PivotTable with data for years 2010 and 2011 across various categories like Bahan, Batik, Bolero, Celana, Hem, Jam, Jarik, Kaos, Rok, Sarimbit, and Standar. The PivotTable Fields pane on the right shows fields for "tahun" (Columns) and "nama\_subkata..." (Rows), with "jumlah" checked under "Choose fields to add to report".

A "Value Field Settings" dialog box is open, centered over the PivotTable. It shows the "Source Name" as "jumlah" and the "Custom Name" as "Count of jumlah2". Under "Summarize Values By", "Show Values As" is set to "Count". The "Summarize value field by" dropdown is open, showing options: Sum, Count, Average, Max, Min, and Product. The "Number Format" button is visible at the bottom left of the dialog.

	2010	2011	
Row Labels	Sum of jumlah	Sum of jumlah2	Sum of jumlah
Bahan	1	1	8
Batik			
Bolero		1	
Celana	17	17	
Hem	5	5	8
Jam			
Jarik			
Kaos		1	
Rok			
Sarimbit		1	
Standar		2	
Grand Total	23	23	21

### D. 3. Kegiatan 3 : Calculated Field dan Calculated Item di Pivot Table

#### a) Calculated Field (Menambah field/kolom baru pada daftar field yang ada)

1. Membuat field baru dengan menggunakan tab **Formulas** -> **Calculated Field**, lalu membuat field baru dengan nama **Pendapatan** dengan formula, **jumlah \* harga**.

The screenshot shows the Microsoft Excel interface with the 'PivotTable Tools' ribbon selected. A PivotTable is displayed with columns for '2010', '2011', and '2012'. The 'PivotTable Fields' pane on the right lists fields like 'jumlah', 'harga', and 'tahun'. A 'Sheet2' tab is active. A 'Insert Calculated Field' dialog box is open in the foreground, prompting the user to define a new calculated field named 'Pendapatan' with the formula '= jumlah\*harga'.

2. Setelah meng-klik tombol 'OK' maka akan muncul file baru dengan nama '**Pendapatan**', cukup centang field tersebut dan data akan otomatis keluar.

	2010		2011		2012		
Row Labels	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	8
Batik			0			0	1
Bolero			0	1	1	255000	
Celana	17	1	935000			0	17
Hem	5	1	500000	8	2	4960000	4
Jam			0			0	44
Jarik			0			0	4
kaos			0	1	1	60000	14
Rok			0			0	1
Sarimbit			0	1	1	150000	
Standar			0	2	1	450000	
<b>Grand Total</b>	<b>23</b>	<b>3</b>	<b>15065000</b>	<b>21</b>	<b>7</b>	<b>30030000</b>	<b>93</b>

		Total Sum of jumlah	Total Count of jumlah	Total Sum of Pendapatan
Count of jumlah	Sum of Pendapatan			
2	2120000	17	4	15045000
1	150000	1	1	150000
	0	1	1	255000
1	935000	34	2	3740000
2	1596000	17	5	19023000
1	3520000	44	1	3520000
1	160000	4	1	160000
1	420000	15	2	1350000
1	225000	1	1	225000
	0	1	1	150000
	0	2	1	450000
<b>10</b>	<b>115692000</b>	<b>137</b>	<b>20</b>	<b>456073000</b>

#### D. 4. Kegiatan 4 : Operasi Roll Up dan Drill Down

1. Menghilangkan beberapa field, sehingga tinggal tersisa **tahun** (Columns), **nama\_subkategori** (Rows), dan **Sum of Pendapatan** (Value).

The screenshot shows a Microsoft Excel spreadsheet titled "Fakta\_Penjualan - Excel". A PivotTable is being used to analyze data. The PivotTable Fields pane on the right side lists fields: nama\_wilayah, jumlah, harga, Pendapatan (which is checked and highlighted in green), and More Tables... . The main data area displays a table with columns for year (2010, 2011, 2012, Grand Total) and rows for product names (Bahan, Batik, Bolero, Celana, Hem, Jam, Jarik, kaos, Rok, Sarimbit, Standar). The "PivotTable Tools" ribbon tab is active, specifically the "Analyze" tab.

	2010	2011	2012	Grand Total
Bahan	500000	960000	2120000	15045000
Batik	0	0	150000	150000
Bolero	0	255000	0	255000
Celana	935000	0	935000	3740000
Hem	500000	4960000	1596000	19023000
Jam	0	0	3520000	3520000
Jarik	0	0	160000	160000
kaos	0	60000	420000	1350000
Rok	0	0	225000	225000
Sarimbit	0	150000	0	150000
Standar	0	450000	0	450000
<b>Grand Total</b>	<b>15065000</b>	<b>30030000</b>	<b>115692000</b>	<b>456073000</b>

2. Menambahkan field pada kotak Column (kuartal dan bulan) dan Rows (nama\_produk dan nama\_pelanggan), untuk menambah field-field yang bisa

diperinci dan diringkas sesuai urutan kategori data yang lebih spesifik.

## Roll Up

	2010	2011	2012	Grand Total
<b>Sum of Pendapatan</b>				
Bahan	500000	960000	2120000	15045000
Batik	0	0	150000	150000
Bolero	0	255000	0	255000
Celana	935000	0	935000	3740000
Hem	500000	4960000	1596000	19023000
Jam	0	0	3520000	3520000
Jarik	0	0	160000	160000
kaos	0	60000	420000	1350000
Rok	0	0	225000	225000
Sarimbit	0	150000	0	150000
Standar	0	450000	0	450000
<b>Grand Total</b>	<b>15065000</b>	<b>30030000</b>	<b>115692000</b>	<b>456073000</b>

## Drop Down

	2010	2011	2012	Grand Total
<b>Sum of Pendapatan</b>				
Row Labels	2010	2011	2012	Grand Total
Bahan	500000	960000	2120000	15045000
Bahan Belundru Cap Mahkota	0	0	945000	945000
Ibu Tyas	0	0	945000	945000
Bahan Standar Cap Garis	500000	0	0	500000
Ibu Tyas	500000	0	0	500000
Bahan Standar Cap Lasem	0	0	130000	130000
Ibu Niken	0	0	130000	130000
Hem Sutra Print Rama	0	960000	0	960000
Ibu Siti Arya	0	960000	0	960000
Batik	0	0	150000	150000
Celana Standar Cap Warna	0	0	150000	150000
Bapak Heru	0	0	150000	150000
Bolero	0	255000	0	255000
Kaos Batik Cap Tulis	0	255000	0	255000
Ibu Hatamah	0	255000	0	255000
Celana	935000	0	935000	3740000
Hem Standar Cap Tumpal	935000	0	0	935000
Ibu Hadi Sukarni	935000	0	0	935000
Sarimbit Standar Print Lukis	0	0	935000	935000
Ibu Hadi Sukarni	0	0	935000	935000
Hem	500000	4960000	1596000	19023000

Fakta\_Perjualan - Excel

This screenshot shows a Microsoft Excel spreadsheet titled "Fakta\_Perjualan - Excel". The main content is a PivotTable with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
26	■ Bahan Lawasan Tulis Tolet	0	2750000	0	2750000									
27	■ Ibu Atik	0	2750000	0	2750000									
28	■ Batik Standar Cap Tumpal	0	210000	0	210000									
29	■ Ibu Harini	0	210000	0	210000									
30	■ Bolero Standar Cap Sidomukti	500000	0	0	500000									
31	■ Celana Standar Print Lasem	500000	0	0	500000									
32	■ Celana Standar Print Lasem	0	0	897000	897000									
33	■ Bapak Totok	0	0	897000	897000									
34	■ Hem katun Print Kawung	0	0	100000	100000									
35	■ Ibu Aini Kasmaji	0	0	100000	100000									
36	■ Jam	0	0	3520000	3520000									
37	■ Hem katun Print Kelengan	0	0	3520000	3520000									
38	■ Ibu Siti Arya	0	0	3520000	3520000									
39	■ Jarik	0	0	160000	160000									
40	■ Rok Batik Print Kombinasi	0	0	160000	160000									
41	■ Ibu Harini	0	0	160000	160000									
42	■ kaos	0	60000	420000	1350000									
43	■ Jam Standar Print Lukis	0	60000	0	60000									
44	■ Bapak Imron	0	60000	0	60000									
45	■ Jarik Standar Tulis Sarimbhit	0	0	420000	420000									
46	■ Ibu Harini	0	0	420000	420000									
47	■ Rok	0	0	225000	225000									
48	■ Hem Standar Tulis Madura	0	0	225000	225000									

PivotTable Fields pane on the right shows fields: bulan, kuartal, tahun, nama\_produk, nama\_subkategori.

Fakta\_Perjualan - Excel

This screenshot shows a Microsoft Excel spreadsheet titled "Fakta\_Perjualan - Excel". The main content is a PivotTable with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
49	■ Ibu Siti Arya	0	0	225000	225000									
50	■ Sarimbhit	0	150000	0	150000									
51	■ Kaos Katun Print Bola	0	150000	0	150000									
52	■ Ibu Hatamah	0	150000	0	150000									
53	■ Standar	0	450000	0	450000									
54	■ Jarik Standar Print Sogan	0	450000	0	450000									
55	■ Bapak Ketut	0	450000	0	450000									
56	■ Grand Total		15065000	30030000	115692000	456073000								
57														
58														
59														
60														
61														
62														
63														
64														
65														
66														
67														
68														
69														
70														
71														

PivotTable Fields pane on the right shows fields: bulan, kuartal, tahun, nama\_produk, nama\_subkategori.

## MODUL V

### PIVOT TABLE DAN CHART

#### E. Tugas

1. Dengan menggunakan **PivotTable** pada file **Fakta\_Penjualan.xls** tambahkan 2 buah field, yaitu :
  - a. **PPN (Pajak Pertambahan Nilai)** sebesar 10% dari tiap pendapatan pada Pivot Table.
  - b. **Total Penghasilan** yang dihitung dari pendapatan dikurangi dengan PPN tersebut.

	Column Labels							
	2010		2011					
Row Labels	Sum of Pendapatan	Sum of PPN (10%)	Sum of Total Penghasilan	Sum of jumlah	Sum of kuartal	Sum of Pendapatan	Sum of PPN (10%)	
Bahan	500000	50000	450000	1	2	960000	96000	
Batik	0	0	0			0	0	
Bolero	0	0	0			255000	25500	
Celana	935000	93500	841500	17	1	0	0	
Hem	500000	50000	450000	5	4	4960000	496000	
Jam	0	0	0			0	0	
Jarik	0	0	0			0	0	
kaos	0	0	0			60000	6000	
Rok	0	0	0			0	0	
Sarimbit	0	0	0			150000	15000	
Standar	0	0	0			450000	45000	
<b>Grand Total</b>	<b>15065000</b>	<b>1506500</b>	<b>13558500</b>	<b>23</b>	<b>7</b>	<b>30030000</b>	<b>3003000</b>	

	2012							
	Sum of Total Penghasilan	Sum of jumlah	Sum of kuartal	Sum of Pendapatan	Sum of PPN (10%)	Sum of Total Penghasilan	Sum of jumlah	Sum of kuartal
	864000	8	1	2120000	212000	1908000	8	4
	0			150000	15000	135000	1	3
	229500	1	4	0	0	0		
	0			935000	93500	841500	17	1
	4464000	8	5	1596000	159600	1436400	4	5
	0			3520000	352000	3168000	44	1
	0			160000	16000	144000	4	2
	54000	1	1	420000	42000	378000	14	1
	0			225000	22500	202500	1	4
	135000	1	4	0	0	0		
	405000	2	4	0	0	0		
	<b>27027000</b>	<b>21</b>	<b>19</b>	<b>115692000</b>	<b>11569200</b>	<b>104122800</b>	<b>93</b>	<b>21</b>

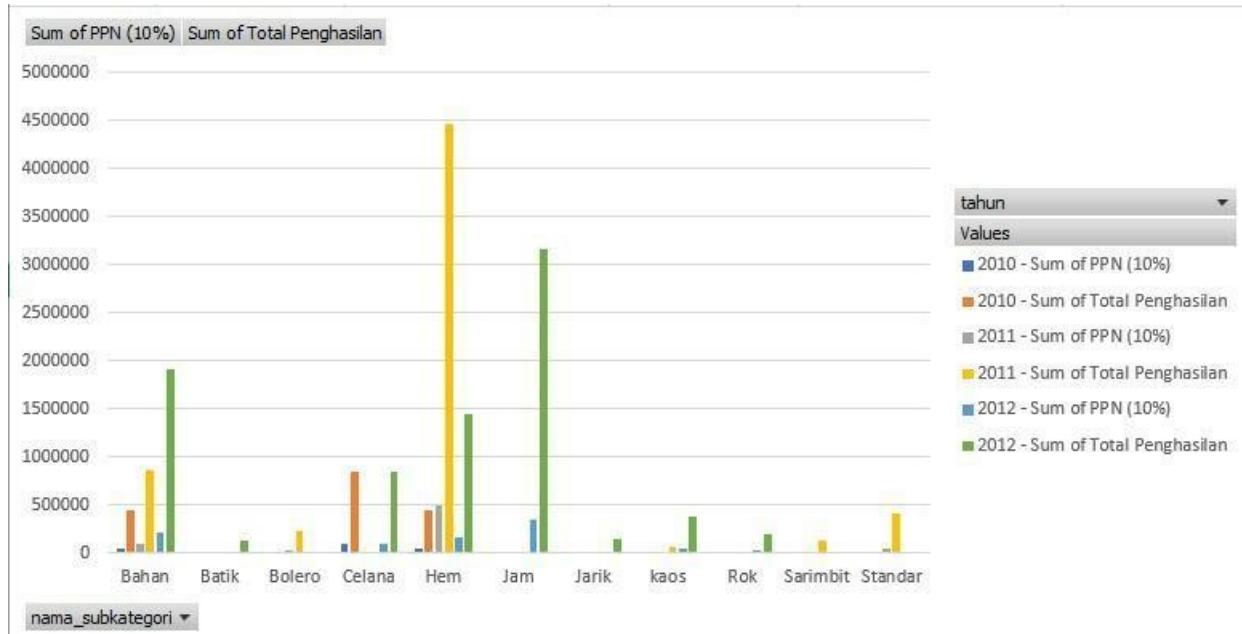
	Total Sum of Pendapatan	Total Sum of PPN (10%)	Total Sum of Total Penghasilan	Total Sum of jumlah	Total Sum of kuartal
	15045000	1504500	13540500	17	7
	150000	15000	135000	1	3
	255000	25500	229500	1	4
	3740000	374000	3366000	34	2
	19023000	1902300	17120700	17	14
	3520000	352000	3168000	44	1
	160000	16000	144000	4	2
	1350000	135000	1215000	15	2
	225000	22500	202500	1	4
	150000	15000	135000	1	4
	450000	45000	405000	2	4
	<b>456073000</b>	<b>45607300</b>	<b>410465700</b>	<b>137</b>	<b>47</b>

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

### **PivotTable**

Row Labels	Column Labels		2010		2011		2012		Total Sum of PPN (10%)	Total Sum of Total Penghasilan
	Sum of PPN (10%)	Sum of Total Penghasilan	Sum of PPN (10%)	Sum of Total Penghasilan	Sum of PPN (10%)	Sum of Total Penghasilan	Sum of PPN (10%)	Sum of Total Penghasilan		
Bahan	50000	450000	96000	864000	212000	1908000	1504500	13540500		
Batik	0	0	0	0	15000	135000	15000	135000		
Bolero	0	0	25500	229500	0	0	25500	229500		
Celana	93500	841500	0	0	93500	841500	374000	3366000		
Hem	50000	450000	496000	4464000	159600	1436400	1902300	17120700		
Jam	0	0	0	0	352000	3168000	352000	3168000		
Jarik	0	0	0	0	16000	144000	16000	144000		
kaos	0	0	6000	54000	42000	378000	135000	12150000		
Rok	0	0	0	0	22500	202500	22500	202500		
Sarimbit	0	0	15000	135000	0	0	15000	135000		
Standar	0	0	45000	405000	0	0	45000	405000		
<b>Grand Total</b>	<b>1506500</b>	<b>13558500</b>	<b>3003000</b>	<b>27027000</b>	<b>11569200</b>	<b>104122800</b>	<b>45607300</b>	<b>410465700</b>		

### **PivotChart**



Dapat dilihat dari data di atas bahwa, kategori produk dengan nilai penghasilan terbanyak pada tahun 2010 – 2012 adalah **Hem**.

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MODUL : 6

## TUGAS :

NAMA : ROSSANTI KUSUMADEWI

NIM : L200170092

MODUL : 7

## LATIHAN

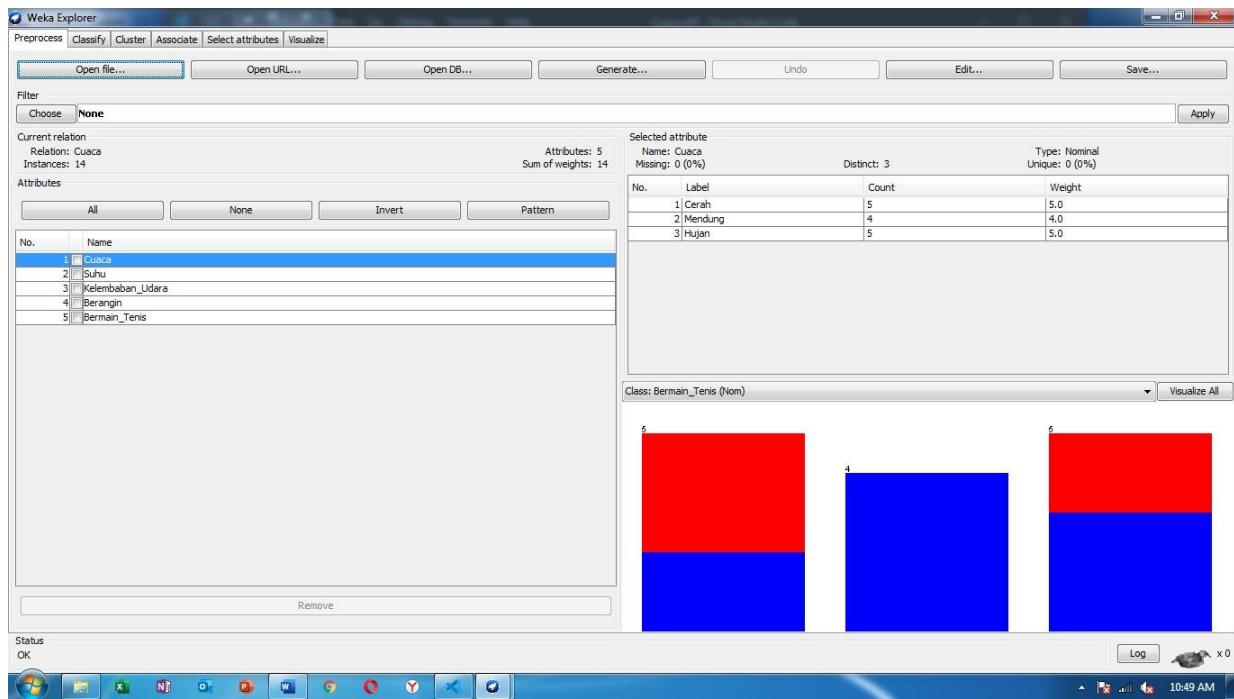
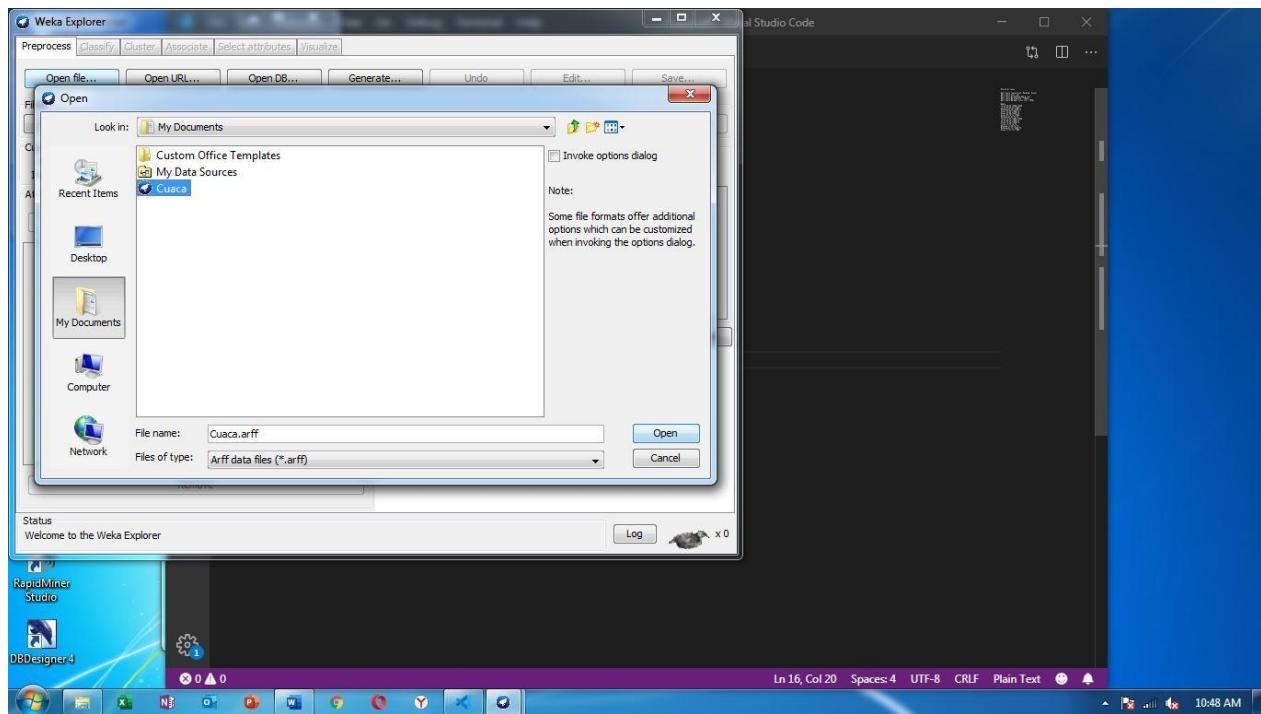
```
C > Users > LABSI-16 > Documents > Cuaca.arff
1 @relation Cuaca
2
3 @attribute Cuaca{Cerah, Mendung, Hujan}
4 @attribute Suhu real
5 @attribute Kelembaban_Udara real
6 @attribute Berangin{YA, TIDAK}
7 @attribute Bermain_Tenis {YA, TIDAK}
8
9 @data
10 Cerah,85,85,TIDAK,TIDAK
11 Cerah,80,90,YA,TIDAK
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
```

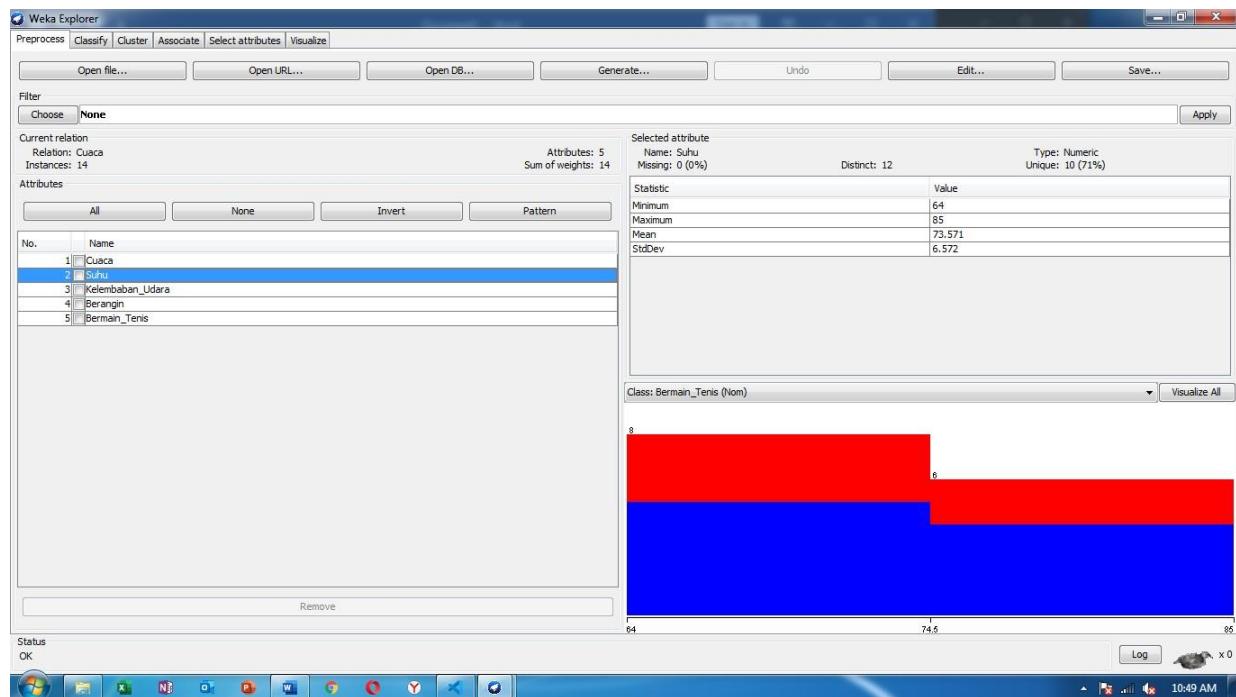
Waikato Environment for Knowledge  
Version 3.7.9  
(c) 1994-2013  
The University of Waikato  
Hamilton, New Zealand

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

Page 1 of 1 0 words

Ln 16, Col 20 Spaces: 4 UTF-8 CRLF Plain Text 10:48 AM



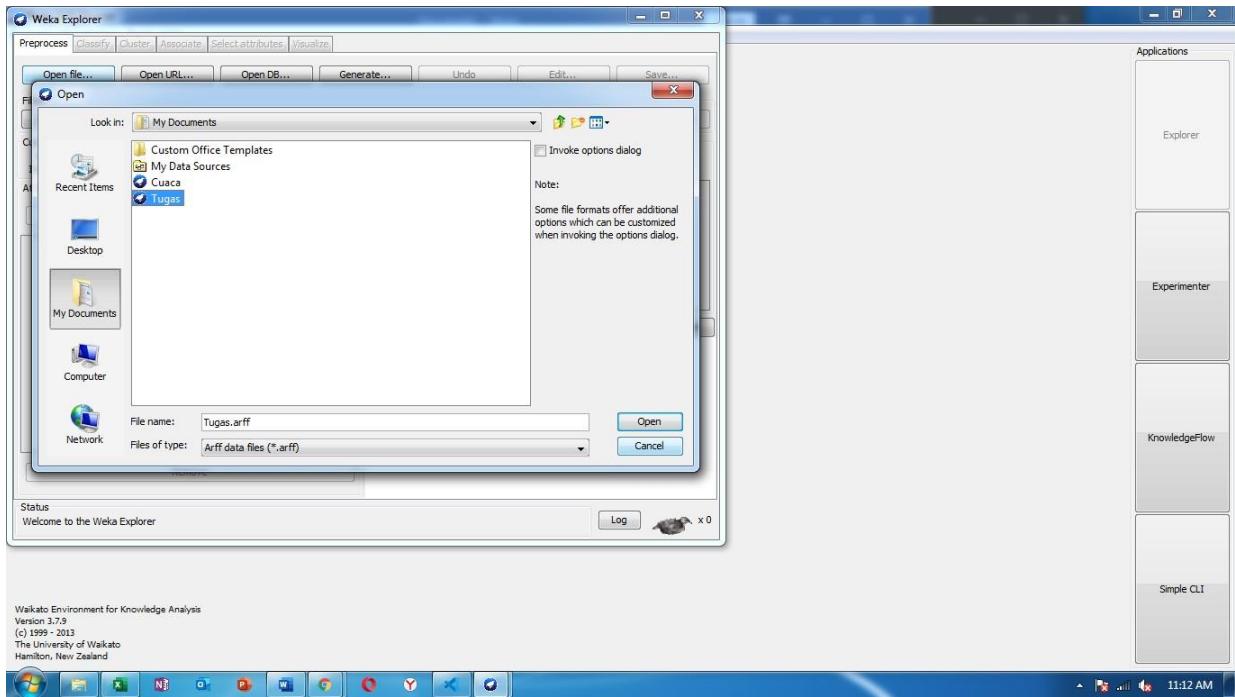


## TUGAS

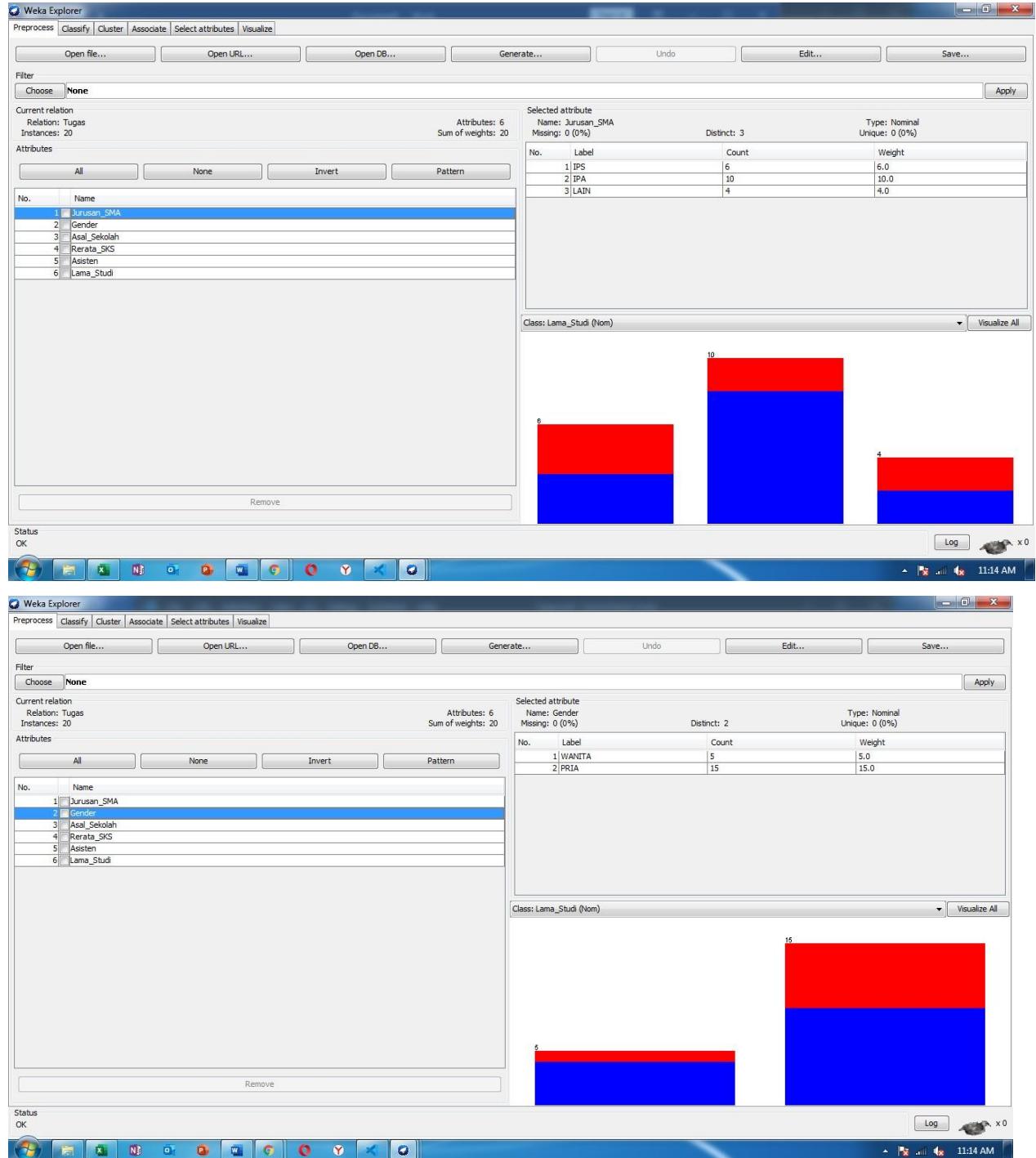
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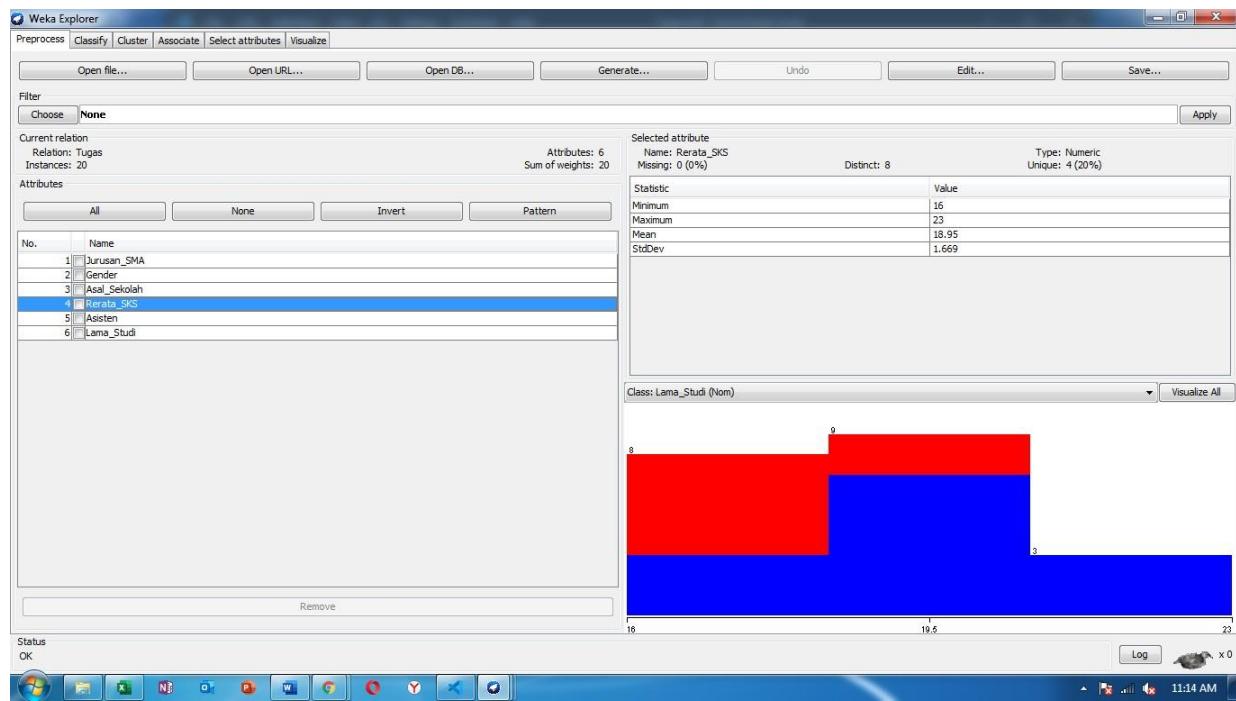
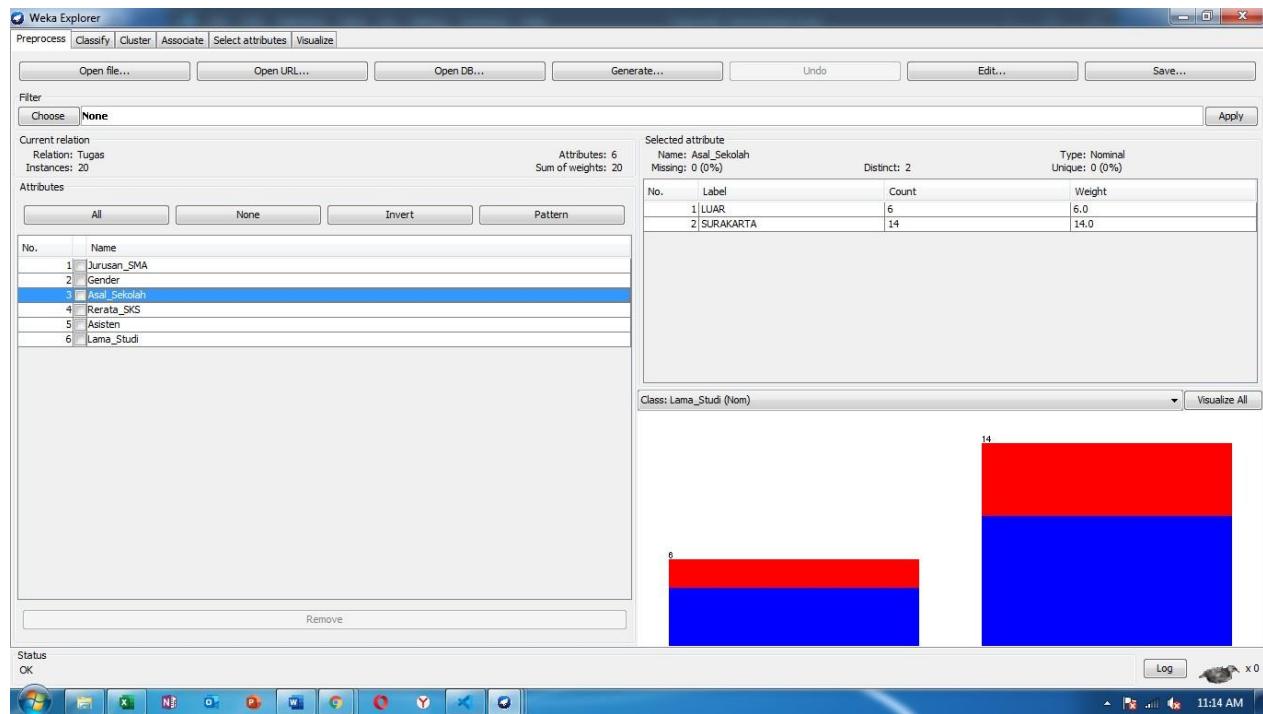
The screenshot shows the Waikato Environment for Knowledge Analysis (WEKA) interface. On the left, the 'Weka Explorer' window displays a list of attributes and their descriptions. The 'Current relation' is set to 'Tugas'. The 'Instances' table shows 20 entries. The status bar at the bottom indicates 'OK'. On the right, the 'Tugas.arff - Visual Studio Code' window shows the ARFF file content. The 'Applications' panel on the far right contains four tabs: 'Explorer', 'Experimenter', 'KnowledgeFlow', and 'Simple CLI'. The bottom status bar shows 'Ln 20, Col 37' and other file details.

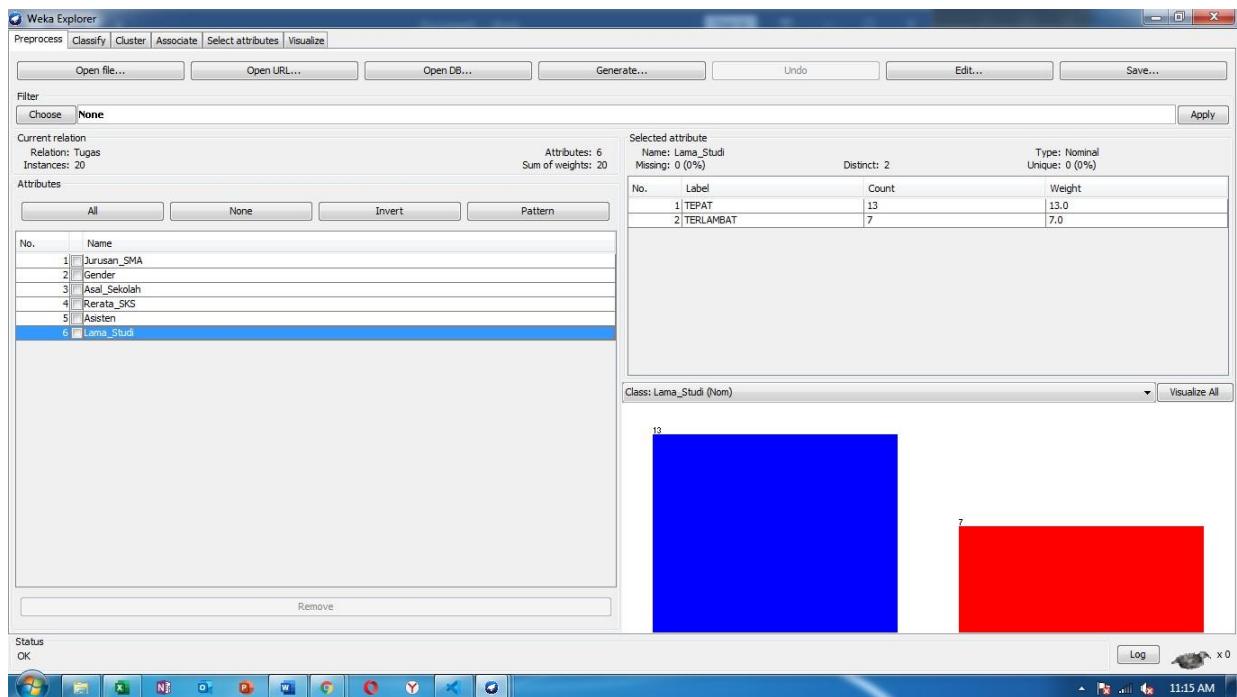
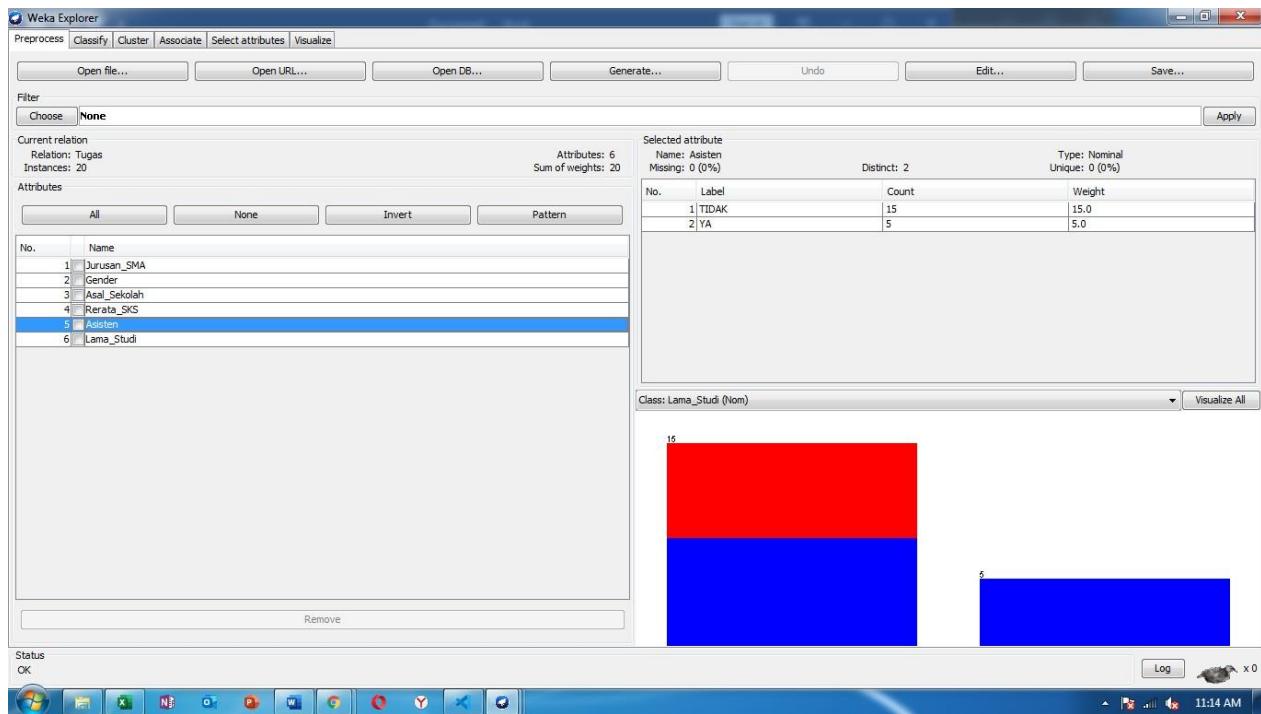
```
C:\ > Users > LABSI-16 > Documents > Tugas.arff
1 @relation Tugas
2
3 @attribute Jurusan_SMA{IPS, IPA, LAIN}
4 @attribute Gender{WANITA, PRIA}
5 @attribute Asal_Sekolah{LUAR, SURAKARTA}
6 @attribute Renata_SKS real
7 @attribute Asisten{TIDAK, YA}
8 @attribute Lama_Studi{TEPAT, TERLAMBAT}
9
10 @data
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,PRITA,LUAR,23,YA,TEPAT
29 IPA,PRIA,SURAKARTA,21,YA,TEPAT
30 IPS,PRIA,SURAKARTA,19,TIDAK,TERLAMBAT
```



2.







3. a. Jumlah atribut bertipe binomial terdapat 4 data (Gender, Asal\_Sekolah, Asisten, Lama\_Studi)
- b. Jumlah atribut bertipe polynomial terdapat 1 data (Jurusan\_SMA)
- c. Jumlah atribut bertipe real terdapat 1 data (Rerata\_SKS)

4.

23	NILAI MAX
16	NILAI MIN
18.95	NILAI MEAN
1.669384	STANDARD DEVIATION

NAMA : ROSSANTI KUSUMADEWI

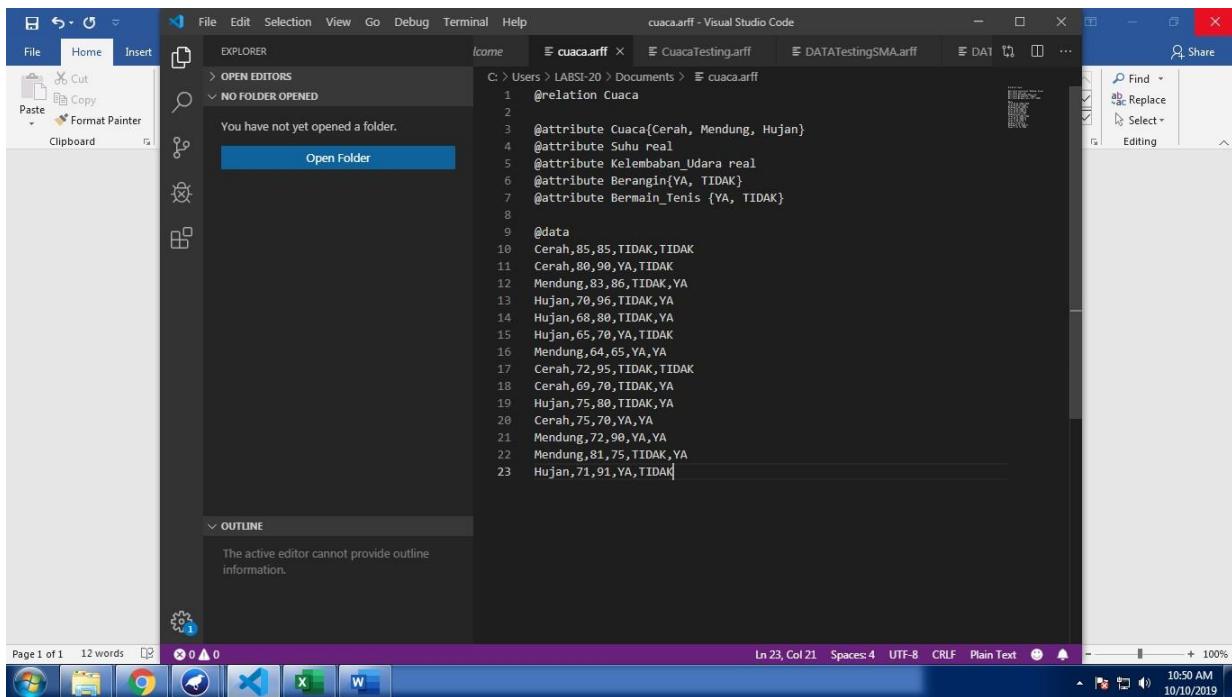
NIM : L200170092

MODUL : 8

## PERCOBAAN

1.

- Cuaca.arff



The screenshot shows the Visual Studio Code interface with the 'cuaca.arff' file open. The code editor displays the following ARFF file content:

```
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,68,88,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,75,88,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
```

The interface includes the Explorer sidebar, a list of open files, and various VS Code extensions like 'Find', 'Replace', and 'Select'.

- CuacaTesting.arff

The screenshot shows a Microsoft Excel window with a table titled "Cuaca" in the first sheet. The table has columns A, B, and C, with rows numbered 1 to 15. The data includes weather conditions like Cerah, Mendung, and Hujan, along with numerical values such as 85, 83, 70, etc. To the right of the Excel window is a Visual Studio Code editor showing the "CuacaTesting.arff" file. The file content is an ARFF dataset with the following structure:

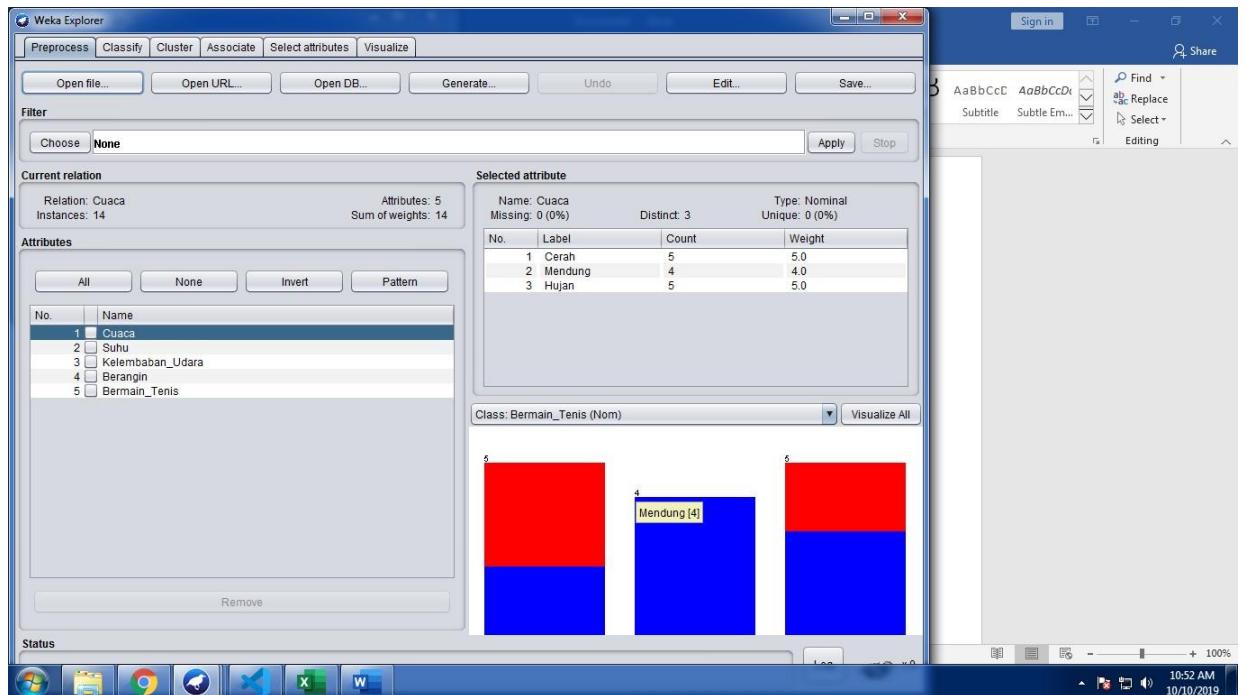
```

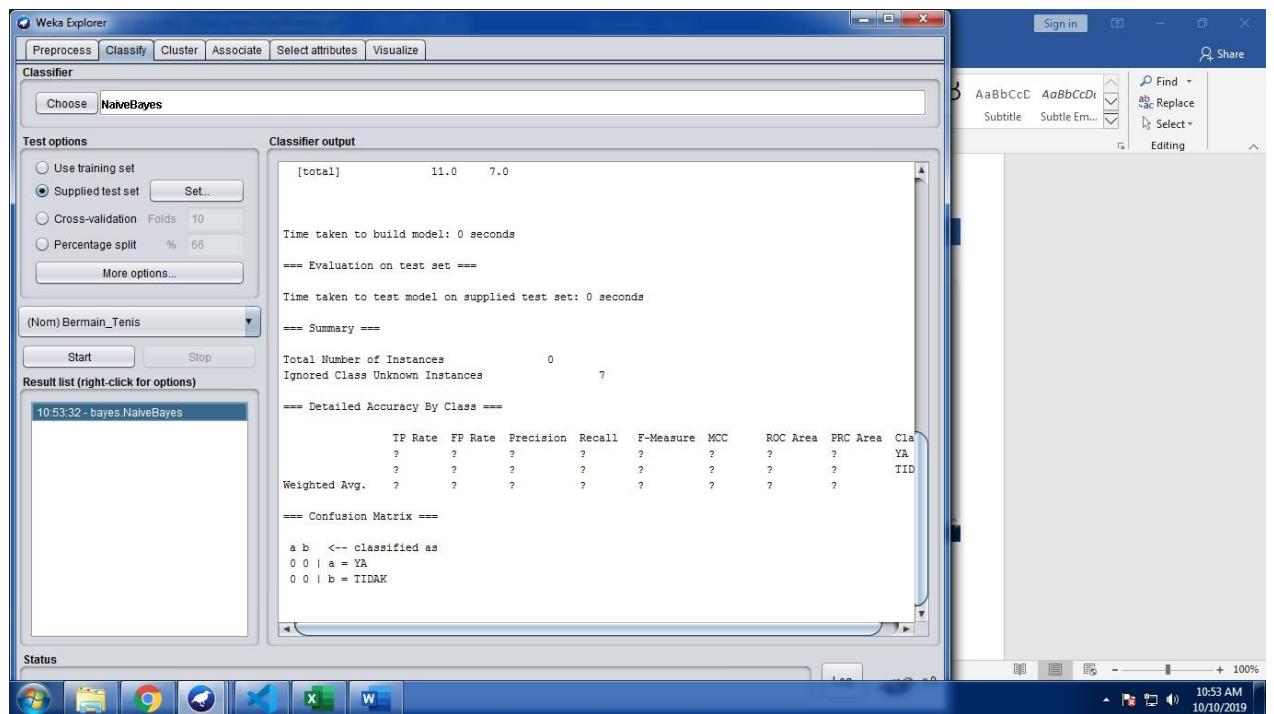
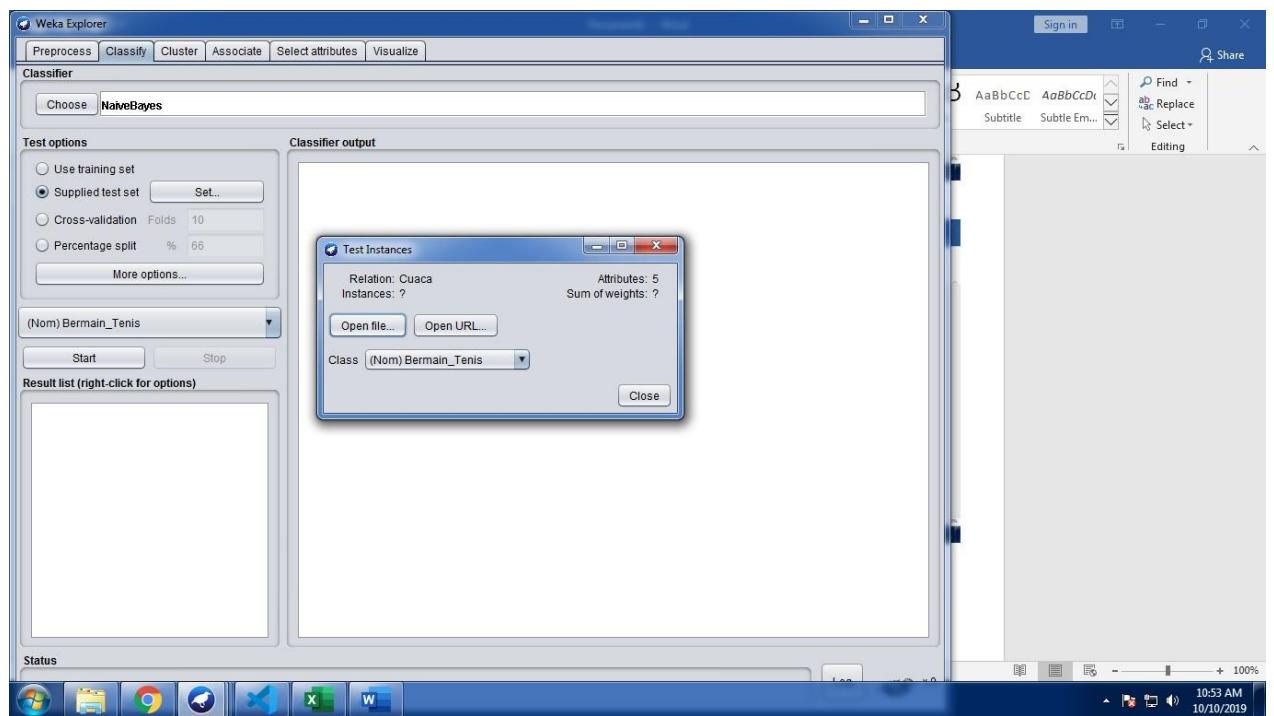
@relation Cuaca
@attribute Cuaca {Cerah, Mendung, Hujan}
@attribute Suhu real
@attribute Kelembaban_Udara real
@attribute Berangin {YA, TIDAK}
@attribute Bermain_Tenis {YA, TIDAK}

@data
Cerah, 75, 65, TIDAK, ?
Cerah, 80, 68, YA, ?
Cerah, 83, 87, YA, ?
Mendung, 70, 96, TIDAK, ?
Mendung, 68, 81, TIDAK, ?
Hujan, 65, 75, YA, ?
Hujan, 64, 85, YA, ?

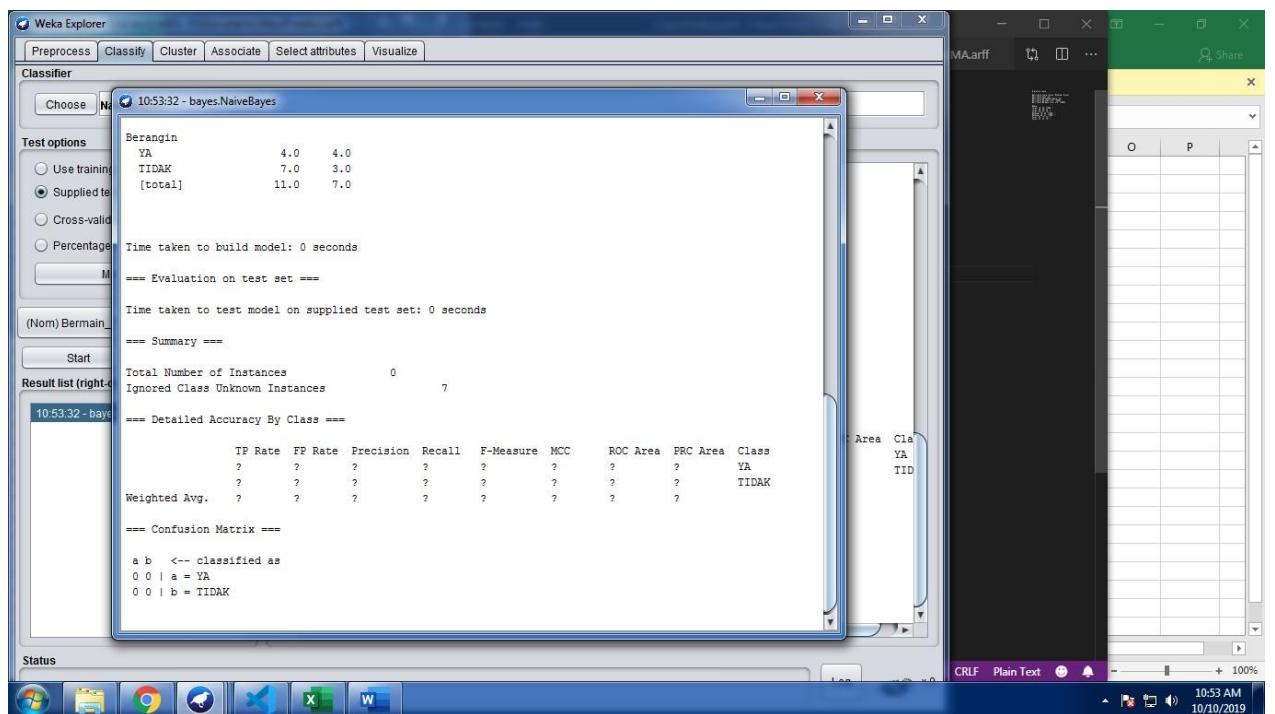
```

2.





Klik kanan lalu pilih view in separate window



The screenshot shows the ARFF-Viewer application window. The title bar reads "ARFF-Viewer - C:\Users\LABSI-20\Documents\HasilPrediksi.arff". The menu bar includes "File", "Edit", and "View". The main area displays a table titled "Relation: Cuaca\_predicted". The table has 7 columns: Nominal, Numeric, Nominal, Nominal, Numeric, Nominal, and Nominal. The columns correspond to attributes: 1. Cuaca (Nominal), 2. Suhu (Numeric), 3. Kelembaban\_Udara (Nominal), 4. Berangin (Nominal), 5. prediction margin (Numeric), 6. predicted\_Bermain\_Tenis (Nominal), and 7. Bermain\_Tenis (Nominal). There are 7 rows of data. Row 1 is highlighted in yellow. The data is as follows:

	Cuaca	Suhu	Kelembaban_Udara	Berangin	prediction margin	predicted_Bermain_Tenis	Bermain_Tenis
Nominal	Numeric	Nominal	Nominal	Numeric	Nominal	Nominal	
1	Cerah	75.0	65.0	TIDAK	0.762765	YA	YA
2	Cerah	80.0	68.0	YA	0.087878	YA	YA
3	Cerah	83.0	87.0	YA	-0.676866	TIDAK	TIDAK
4	Mend...	70.0	96.0	TIDAK	0.628523	YA	YA
5	Mend...	68.0	81.0	TIDAK	0.833994	YA	YA
6	Hujan	65.0	75.0	YA	0.253733	YA	YA
7	Hujan	64.0	85.0	YA	-0.160143	TIDAK	TIDAK

The status bar at the bottom right shows "10:56 AM 10/10/2019". A floating search bar is visible on the right side of the screen.

Tabel\_Cuaca [Protected View] - Excel

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

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing

A1 Cuaca Suhu Kelembaban\_udara Berangin Bermain\_Tenis

	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		85	TIDAK											
3	Cerah	80		90	YA											
4	Mendung	83		86	TIDAK	YA										
5	Hujan	70		96	TIDAK	YA										
6	Hujan	68		80	TIDAK	YA										
7	Hujan	65		70	YA	TIDAK										
8	Mendung	64		65	YA	YA										
9	Cerah	72		95	TIDAK	TIDAK										
10	Cerah	69		70	TIDAK	YA										
11	Hujan	75		80	TIDAK	YA										
12	Cerah	75		70	YA	YA										
13	Mendung	72		90	YA	YA										
14	Mendung	81		75	TIDAK	YA										
15	Hujan	71		91	YA	TIDAK										
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																

Count: 5 100% 10:58 AM 10/10/2019

Tabel\_Cuaca [Protected View] - Excel

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

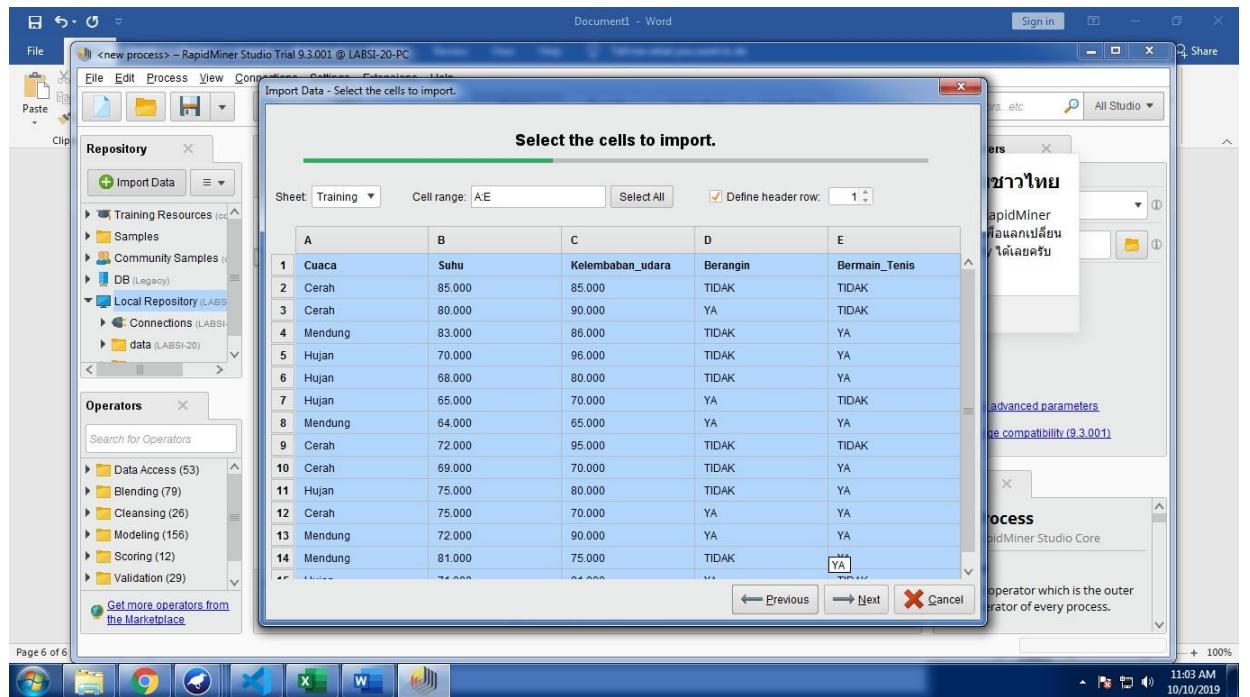
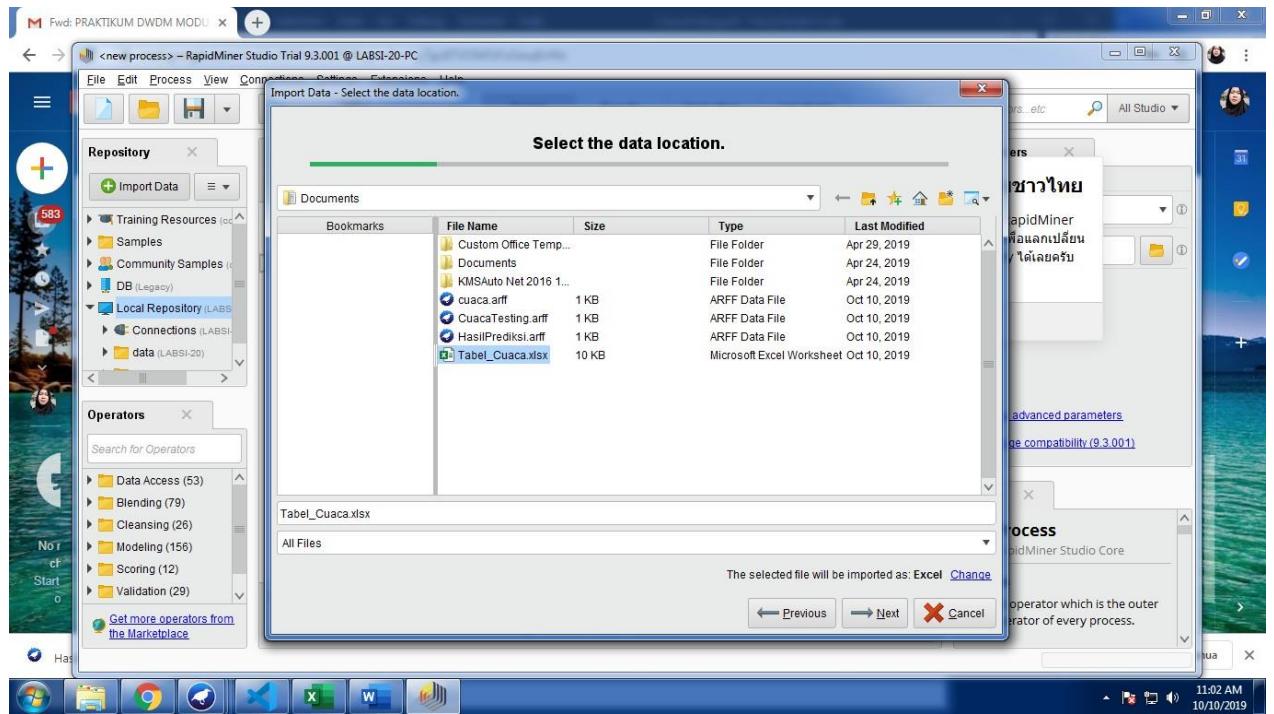
PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing

F19 Cuaca Suhu Kelembaban\_udara Berangin

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Cuaca	Suhu	Kelembaban_udara	Berangin														
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																		
24																		
25																		
26																		

Count: 5 100% 10:58 AM 10/10/2019

## Data Training



Fwd: PRAKTIKUM DWDM MODU

<new process> – RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC

**Format your columns.**

Replace errors with missing values

	Cuaca	Suhu	Kelembaban_u...	Berangin	Bermain_Tenis
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	R1	75	TIDAK	YA

Change Type: polynomial → binomial

Change Role: real → integer → date\_time → date → time

no problems.

Previous Next Cancel

Document1 - Word

<new process> – RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC

ExampleSet (/Local Repository/DataCuaca\_Training)

Views: Design Results Turbo Prep Auto Model

Filter (14 / 14 examples): all

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)

Repository

Import Data

Training Resources (connected)

Samples

Community Samples (connected)

DB (Legacy)

Local Repository (LABSI-20)

Connections (LABSI-20)

data (LABSI-20)

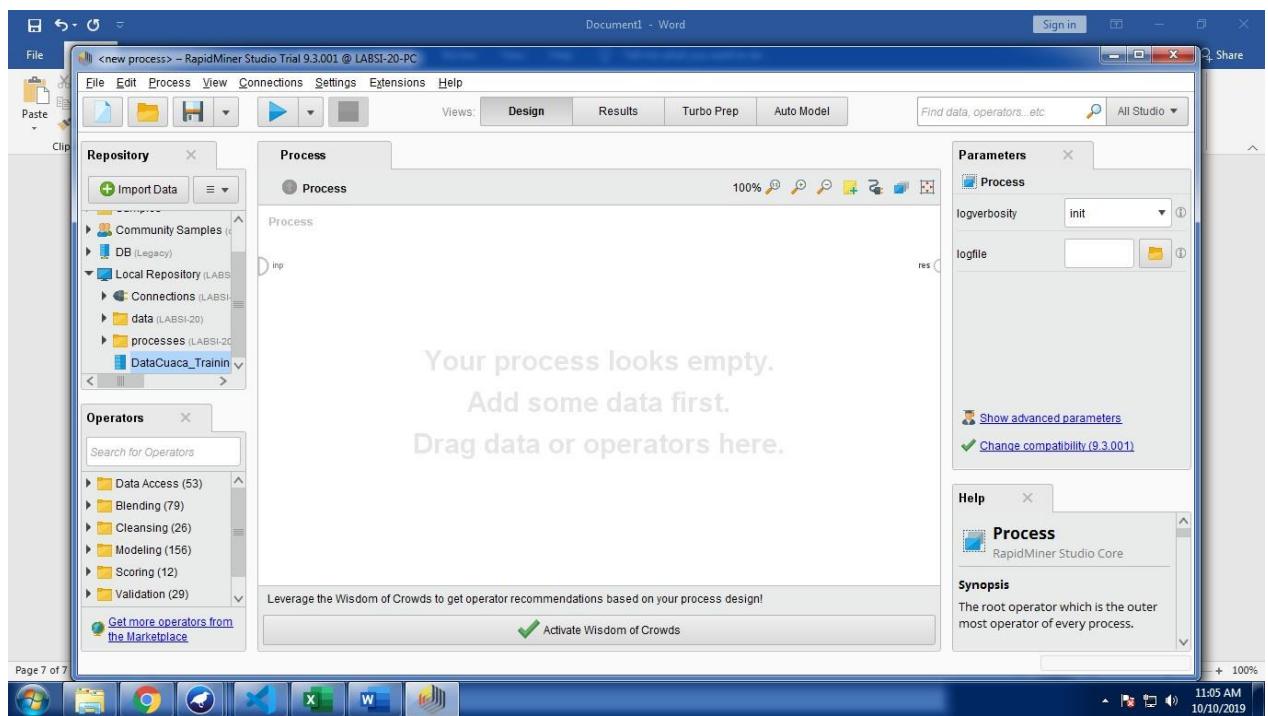
processes (LABSI-20)

DataCuaca\_Training (LABSI-20 - v)

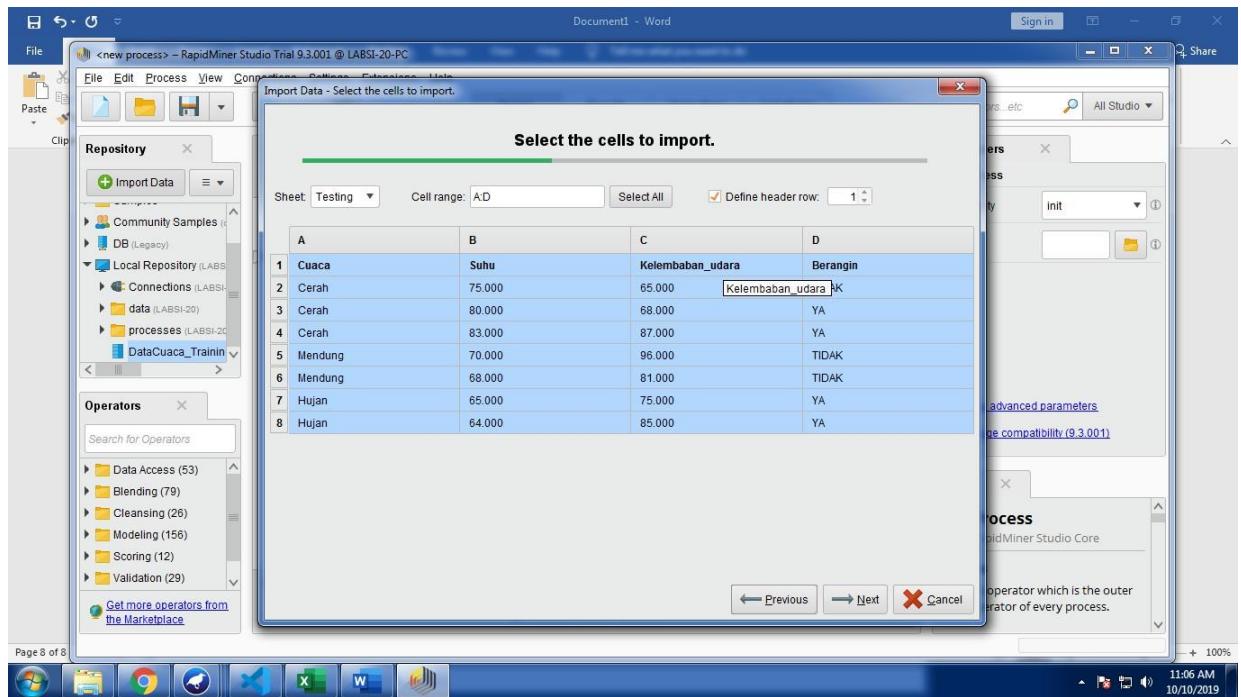
Page 7 of 7

11:03 AM 10/10/2019

11:05 AM 10/10/2019



## Data Testing



**Tabel\_Cuaca [Protected View] - Excel**

**<new process> - RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC**

**Import Data - Format your columns.**

**Format your columns.**

Replace errors with missing values

Cuaca	Suhu	Kelembaban_udara	Berangin
polynomial	integer	integer	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**

**Document1 - Word**

**<new process> - RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC**

**Process**

**Views:** Design Results Turbo Prep Auto Model

**Repository**

- Import Data
- DB (Legacy)
- Local Repository (LABSI)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - DataCuaca\_Training
    - DataCuaca\_Testing
    - DataCuaca\_Trainin

**Operators**

- Search for Operators
- Data Access (53)
- Blending (79)
- Cleansing (26)
- Modeling (156)
- Scoring (12)
- Validation (29)

**Parameters**

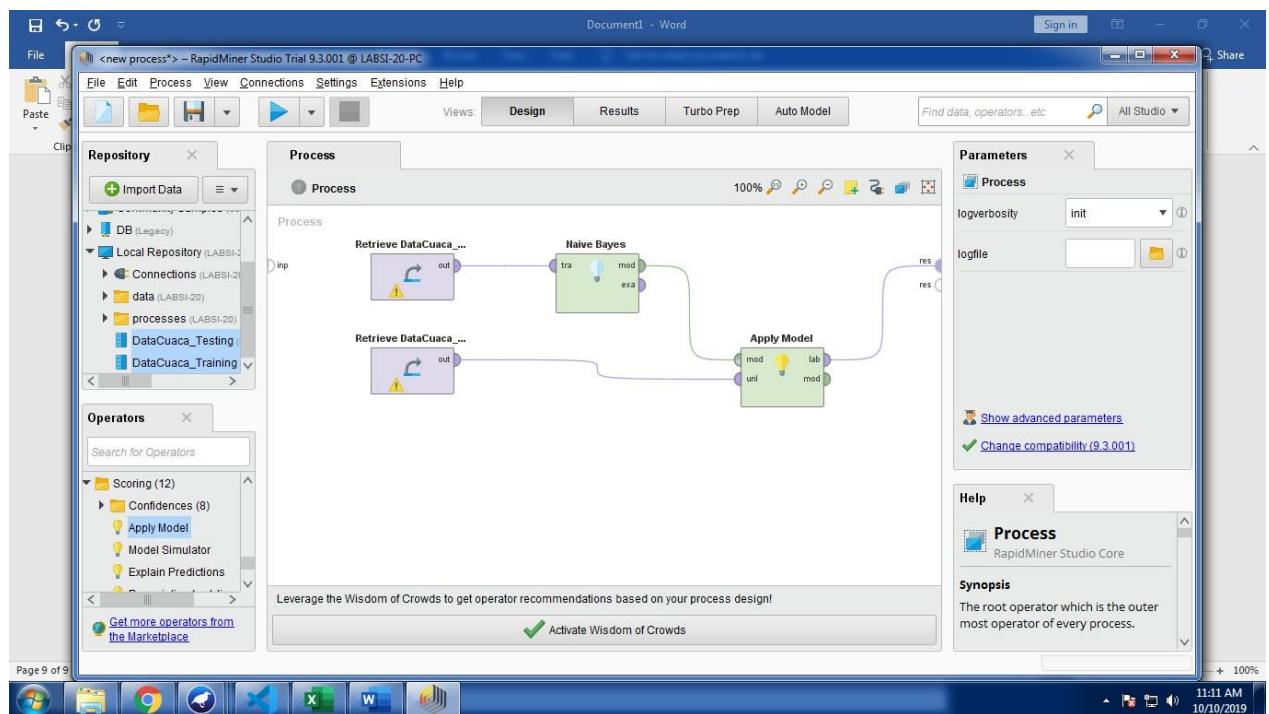
Retrieve DataCuaca\_Training (Retrieve)  
repository entry: DataCuaca\_Training

**Help**

Retrieval

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds



Document1 - Word

<new process> – RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC

**File Edit Process View Connections Settings Extensions Help**

**Views:** Design Results Turbo Prep Auto Model

**Repository**

- + Import Data
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - DataCuaca\_Testing (LABSI-20 - v1)
    - DataCuaca\_Training (LABSI-20 - v1)

**Result History**

ExampleSet (/Local Repository/DataCuaca\_Training)

ExampleSet (Apply Model)

ExampleSet (/Local Repository/DataCuaca\_Testing)

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

Filter (7 / 7 examples): all

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

Page 10 of 10

11:12 AM 10/10/2019

**RapidMiner Studio Trial 9.3.001 @ LABSI-20-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-20)

Connections (LABSI-20)

data (LABSI-20)

processes (LABSI-20)

DataCuaca\_Testing (LABSI-20 - v1, 10/10/19 11:08)

DataCuaca\_Training (LABSI-20 - v1, 10/10/19 11:08)

**ExampleSet (/Local Repository/DataCuaca\_Testing)**

**ExampleSet (/Local Repository/DataCuaca\_Training)**

**ExampleSet (Apply Model)**

Result History

Name	Type	Missing	Statistics	Filter (7 / 7 attributes):	Search for Attributes
Prediction					
<b>prediction(Bermain_Tenis)</b>	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
<b>confidence(TIDAK)</b>					
Confidence_YA	Real	0	Min 0.144	Max 0.993	Average 0.647
<b>confidence(YA)</b>					
Cuaca	Polynominal	0	Least Mendung (2)	Most Cerah (3)	Values Cerah (3), Mendung (2)
<b>Cuaca</b>					
Suhu	Integer	0	Min 64	Max 83	Average 72.143
<b>Suhu</b>					
Kelembaban_udara	Integer	0	Min 65	Max 96	Average 79.571
<b>Kelembaban_udara</b>					
Berangin	Polynominal	0	Least TIDAK (3)	Most YA (4)	Values YA (4), TIDAK (3)
<b>Berangin</b>					

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

## TUGAS

**Tugas.arff - Visual Studio Code**

File Edit Selection View Go Debug Terminal Help

EXPLORER C: > Users > LABSI-20 > Documents > Tugas.arff

OPEN EDITORS NO FOLDER OPENED You have not yet opened a folder.

OUTLINE The active editor cannot provide outline information.

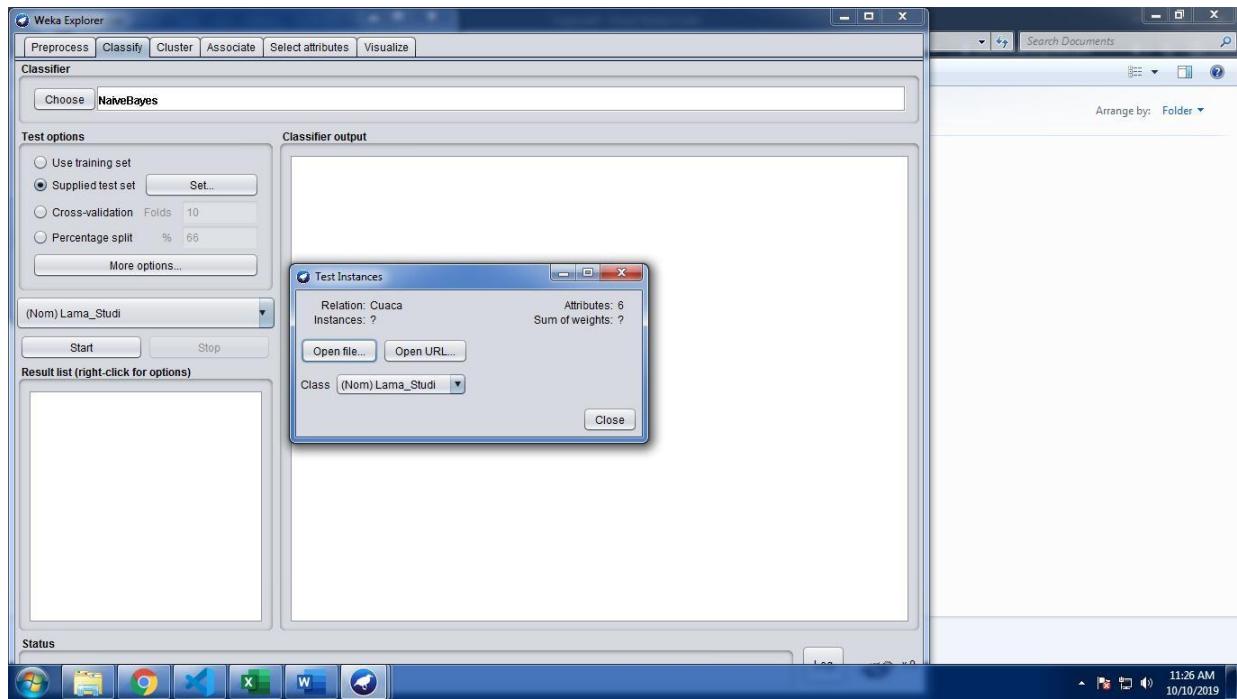
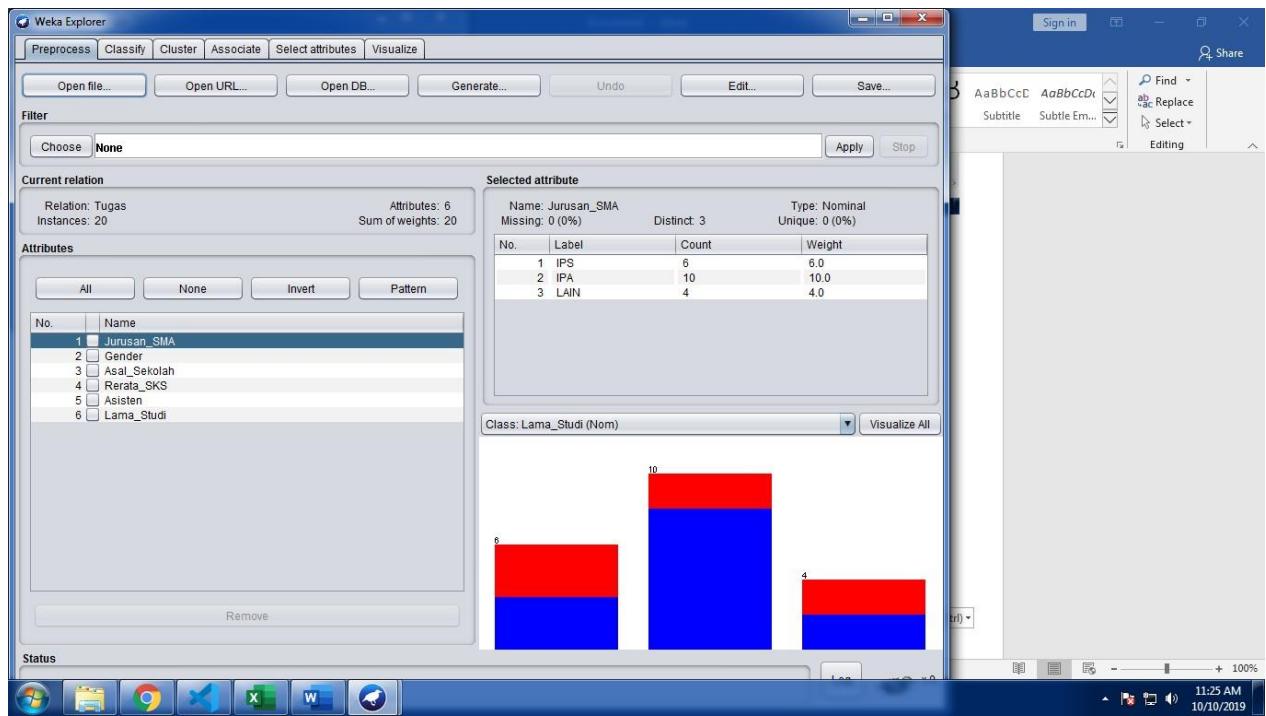
```

@relation Tugas
@attribute Jurusan_SMA{IPS, IPA, LAIN}
@attribute Asal_Sekolah{WANITA, PRIA}
@attribute Asal_SKS real
@attribute Asisten{TIDAK, YA}
@attribute Lama_Studi{TEPAT, TERLAMBAT}

@data
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

```

Ln 30, Col 38 Spaces: 4 UTF-8 CRLF Plain Text 11:24 AM 10/10/2019



**Weka Explorer**

- Preprocess Classify Cluster Associate Select attributes Visualize

**Classifier**

Choose **NaiveBayes**

**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)**

11:30:20 - misc.InputMappedClassifier

**Classifier output**

```

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

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

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

Rerata_SKS
mean 19.5385 17.8571
std. dev. 1.5988 0.9897
weight sum 13 7
precision 1 1

Asisten

```

**Status**

1, Col 16 Spaces: 4 UTF-8 CRLF Plain Text 11:30 AM 10/10/2019

**ARFF-Viewer - C:\Users\LABSI-20\Documents\TugasTesting.arff**

File Edit View

TugasTesting.arff

Relation: Tugas

No: 1: Jurusan\_SMA 2: Gender 3: Asal\_sekolah 4: Rerata\_SKS 5: Asisten 6: Lama\_Studi

No.	Jurusan_SMA	Gender	Asal_sekolah	Rerata_SKS	Asisten	Lama_Studi
1	LAIN	WANITA	SURAKARTA	18.0	TIDAK	Nominal
2	IPA	PRIA	SURAKARTA	19.0	YA	Nominal
3	LAIN	PRIA	SURAKARTA	19.0	TIDAK	Nominal
4	IPS	PRIA	LUAR	17.0	TIDAK	Nominal
5	LAIN	WANITA	SURAKARTA	17.0	TIDAK	Nominal
6	IPA	WANITA	LUAR	18.0	YA	Nominal
7	IPA	PRIA	SURAKARTA	18.0	TIDAK	Nominal
8	IPA	PRIA	SURAKARTA	19.0	TIDAK	Nominal
9	IPS	PRIA	LUAR	18.0	TIDAK	Nominal
10	LAIN	WANITA	SURAKARTA	18.0	TIDAK	Nominal

Find AaBbCcDd Subtitle Subtle Em... Select Editing

11:32 AM 10/10/2019

## Data Testing

**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	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sekolah
2	LAIN	WANITA	SURAKARTA	18.000
3	IPA	PRIA	SURAKARTA	19.000
4	LAIN	PRIA	SURAKARTA	19.000
5	IPS	PRIA	LUAR	17.000
6	LAIN	WANITA	SURAKARTA	17.000
7	IPA	WANITA	LUAR	18.000
8	IPA	PRIA	SURAKARTA	18.000
9	IPA	PRIA	SURAKARTA	19.000
10	IPS	PRIA	LUAR	18.000
11	LAIN	WANITA	SURAKARTA	18.000

Activate Wisdom of Crowds Previous Next Cancel

**Result History** ExampleSet (/Local Repository/Tugas\_Testing)

Open in Turbo Prep Auto Model Filter (10 / 10 examples): all

Row No.	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sek...	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

ExampleSet (10 examples, 0 special attributes, 5 regular attributes)

**Repository**

Import Data

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - DataCuaca\_Testing (LABSI-20 - v1, 10/10/19 11:08)
    - DataCuaca\_Training (LABSI-20 - v1, 10/10/19 11:00)
    - Tugas\_Testing (LABSI-20 - v1, 10/10/19 11:41 AM -)

Calculating result: Visualizations

## Data Training

**Import Data - 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_Sekolah	Asisten
2	IPS	WANITA	SURAKARTA	18.000	TIDAK
3	IPA	PRIA	SURAKARTA	19.000	YA
4	LAIN	PRIA	SURAKARTA	19.000	TIDAK
5	IPA	PRIA	LUAR	17.000	TIDAK
6		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
12	IPA	WANITA	SURAKARTA	19.000	TIDAK
13	IPS	PRIA	SURAKARTA	20.000	TIDAK
14	IPS	PRIA	SURAKARTA	19.000	TIDAK

Activate Wisdom of Crowds

**Import Data - Format your columns.**

Format your columns.

Replace errors with missing values

Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sek...	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
	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

no problems.

**RapidMiner Studio Trial 9.3.001 @ LABSI-20-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/Tugas\_Training) ExampleSet (/Local Repository/Tugas\_Testing)

Data Statistics Visualizations Annotations

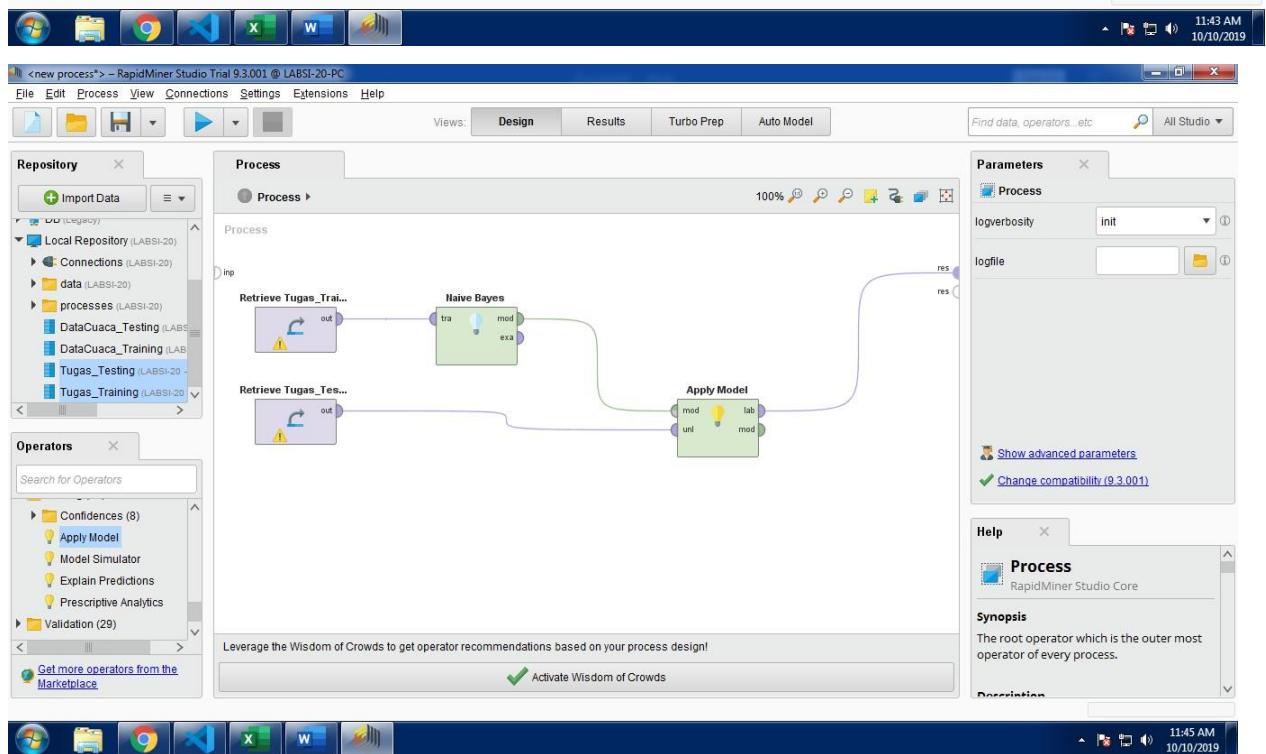
Open in Turbo Prep Auto Model Filter (20 / 20 examples): all

Row No.	Lama_Studi	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sek...	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

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

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - DataCuaca\_Testing (LABSI-20 - v1, 10/10/19 11:08)
    - DataCuaca\_Training (LABSI-20 - v1, 10/10/19 11:08)
    - Tugas\_Testing (LABSI-20 - v1, 10/10/19 11:41 AM -)
    - Tugas\_Training (LABSI-20 - v1, 10/10/19 11:43 AM -)



**RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

**Data**

ExampleSet ((Local Repository/Tugas\_Training)) ExampleSet ((Local Repository/Tugas\_Testing)) ExampleSet (Apply Model)

Result History

Open in Turbo Prep Auto Model Filter (10 / 10 examples): all

Row No.	prediction(L...	confidence(...	confidence(...	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sek...	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

ExampleSet (10 examples, 3 special attributes, 5 regular attributes)

Repository

Import Data

Training Resources (connected) Samples Community Samples (connected) DB (Legacy) Local Repository (LABSI-20) Connections (LABSI-20) data (LABSI-20) processes (LABSI-20) DataCuaca\_Testing (LABSI-20 - v1, 10/10/19 11:08) DataCuaca\_Training (LABSI-20 - v1, 10/10/19 11:08) Tugas\_Testing (LABSI-20 - v1, 10/10/19 11:41 AM -) Tugas\_Training (LABSI-20 - v1, 10/10/19 11:43 AM -)

11:45 AM 10/10/2019

## Tambahan data testing

**RapidMiner Studio Trial 9.3.001 @ LABSI-20-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

Process

Process

Process

Input

Retrieve TugasBaru...

Naive Bayes

Apply Model

Output

Parameters

Process

logverbosity: init

logfile:

Show advanced parameters

Change compatibility (9.3.001)

Operators

apply

Forecasting (1)

Apply Forecast

Scoring (2)

Confidences (1)

Apply Threshold

Apply Model

We found "Shapelet" and "Freemarker operator" in the Marketplace. Show me!

Help

Process

RapidMiner Studio Core

Synopsis

The root operator which is the outer most operator of every process.

Description

11:53 AM 10/10/2019

**<new process\*> - RapidMiner Studio Trial 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc All Studio

ExampleSet (/Local Repository/TugasBaru\_Testing) ExampleSet (/Local Repository/TugasBaru\_Testing)

ExampleSet (/Local Repository/Tugas\_Training) ExampleSet (/Local Repository/TugasBaru\_Testing)

Result History ExampleSet (Apply Model)

Data Statistics Visualizations Annotations

Open in Turbo Prep Auto Model Filter (12 / 12 examples): all

Row No.	prediction(L...	confidence(...	confidence(...	Jurusan_SMA	Gender	Asal_Sekolah	Rerata_Sek...	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
11	TEPAT	0.298	0.702	IPA	WANITA	LUAR	18	TIDAK
12	TEPAT	0.076	0.924	LAIN	PRIA	SURAKARTA	17	YA

ExampleSet (12 examples, 3 special attributes, 5 regular attributes)

Repository

- + Import Data
- Training Resources (connected)
- Community Samples (connected)
- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - DataCuaca\_Testing (LABSI-20 - v1, 10/10/19 11:08)
    - DataCuaca\_Training (LABSI-20 - v1, 10/10/19 11:08)
    - Tugas\_Testing (LABSI-20 - v1, 10/10/19 11:41 AM -)
    - Tugas\_Training (LABSI-20 - v1, 10/10/19 11:43 AM -)
    - TugasBaru\_Testing (LABSI-20 - v1, 10/10/19 11:51)

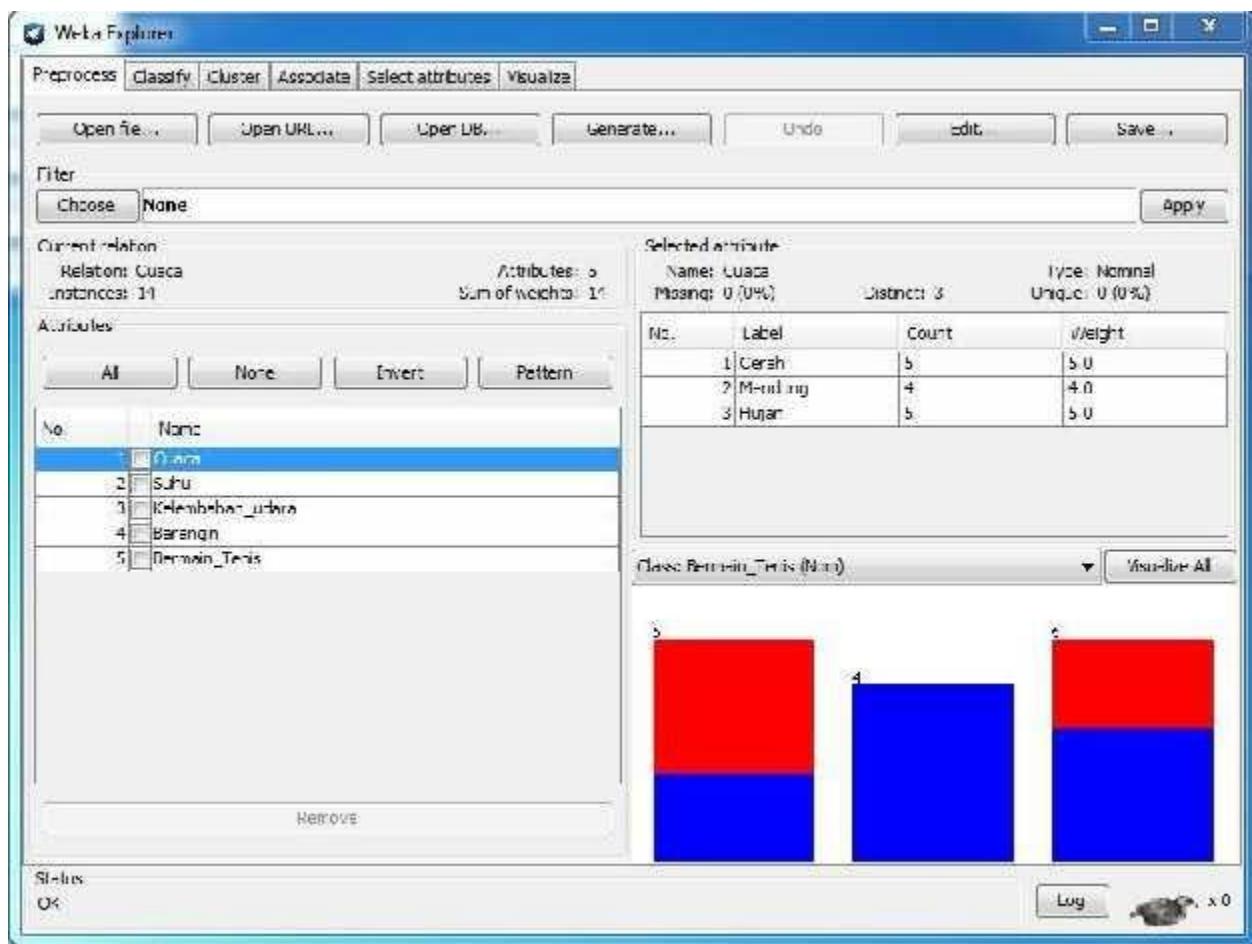
11:57 AM 10/10/2019

Kesimpulan :

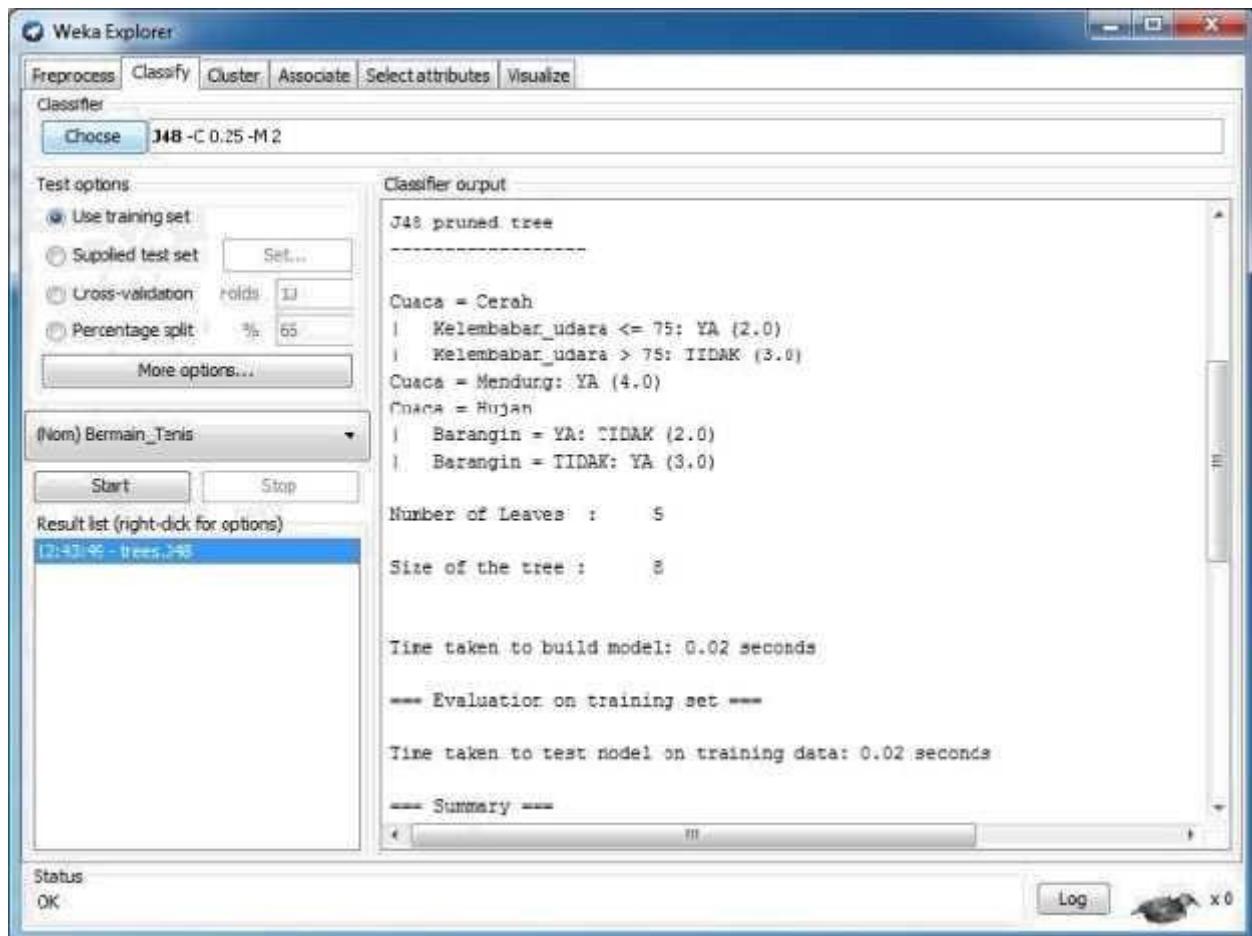
Dewi dan Jono sama-sama lulus TEPAT .

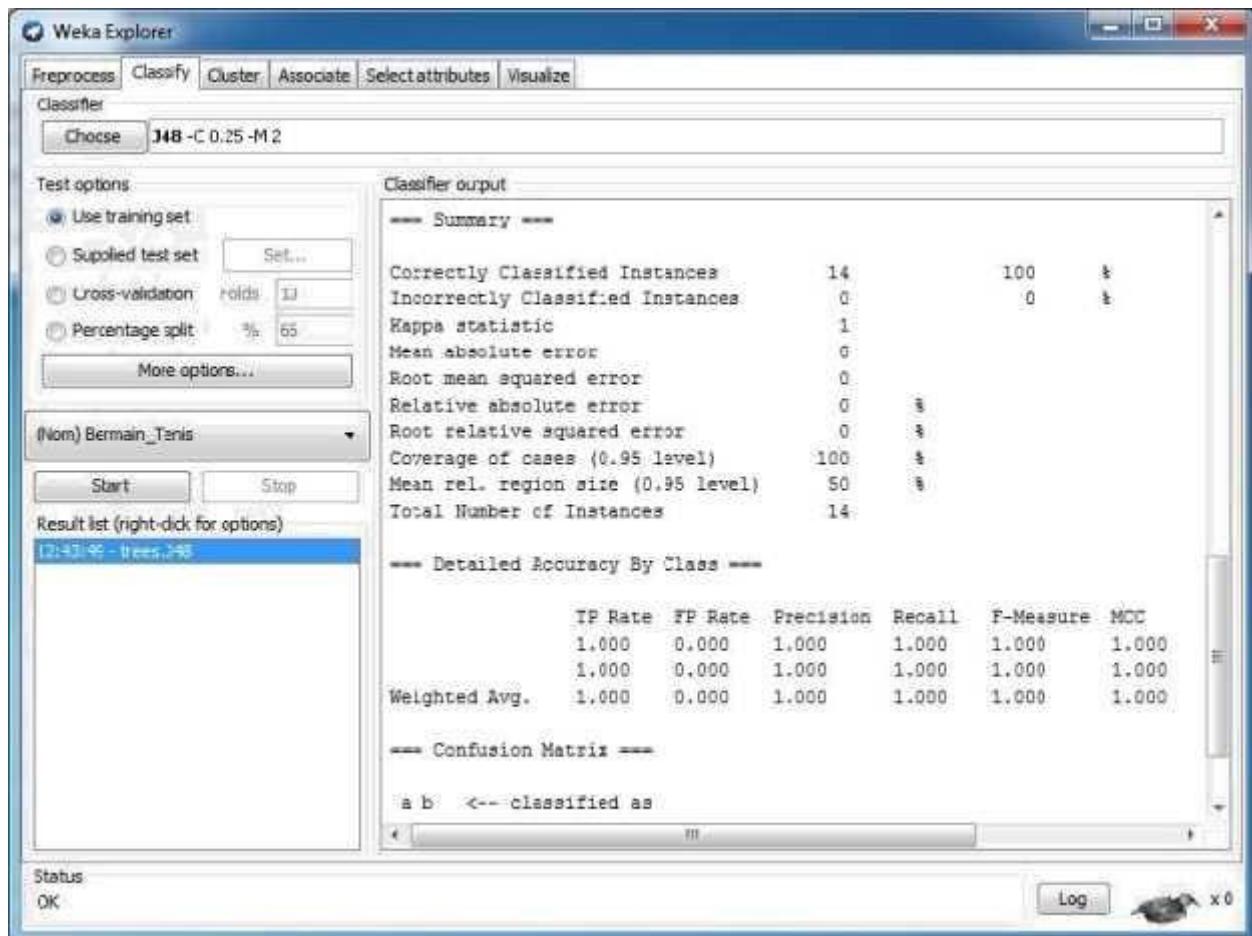
NAMA : ROSSANTI KUSUMADEWI  
NIM : L200170092  
MODUL : 9

1. Buka file **Cuaca.arff**, dengan Weka Explore.

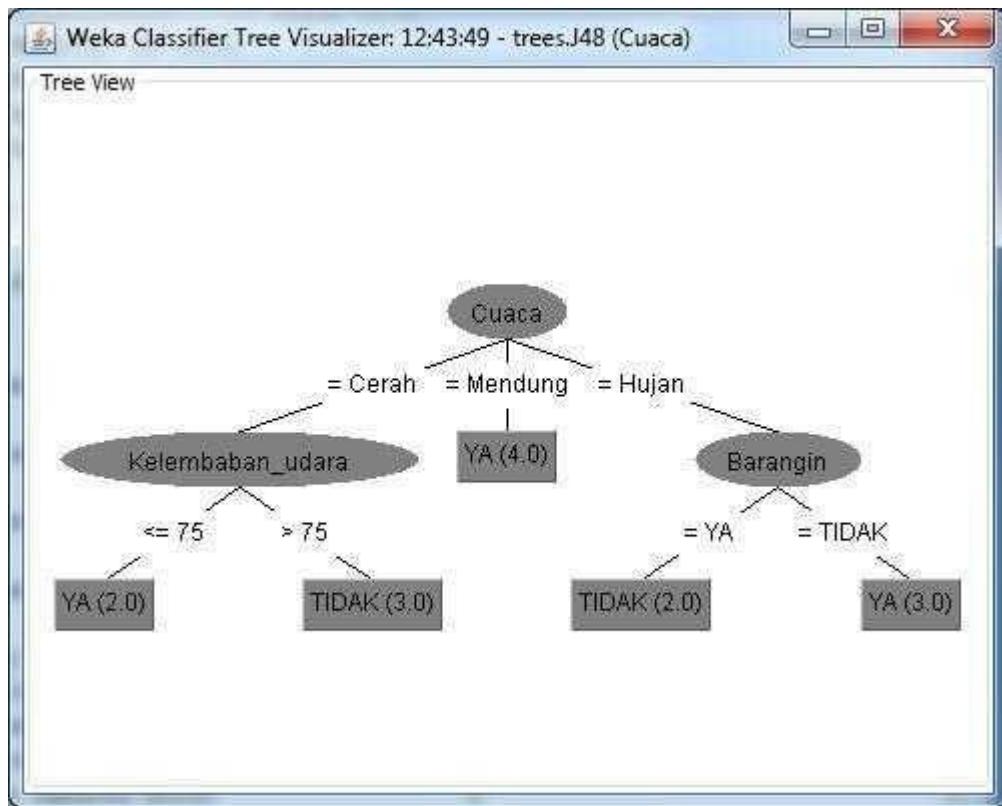


2. Klik tab **Classify** dan tekan tombol **Choose, Trees => J48**, pilih **Use training set** pada **Test options** dan pastikan atribut dependen **Bermain\_Tenis** dan klik **Start** (symbol pada segitiga).



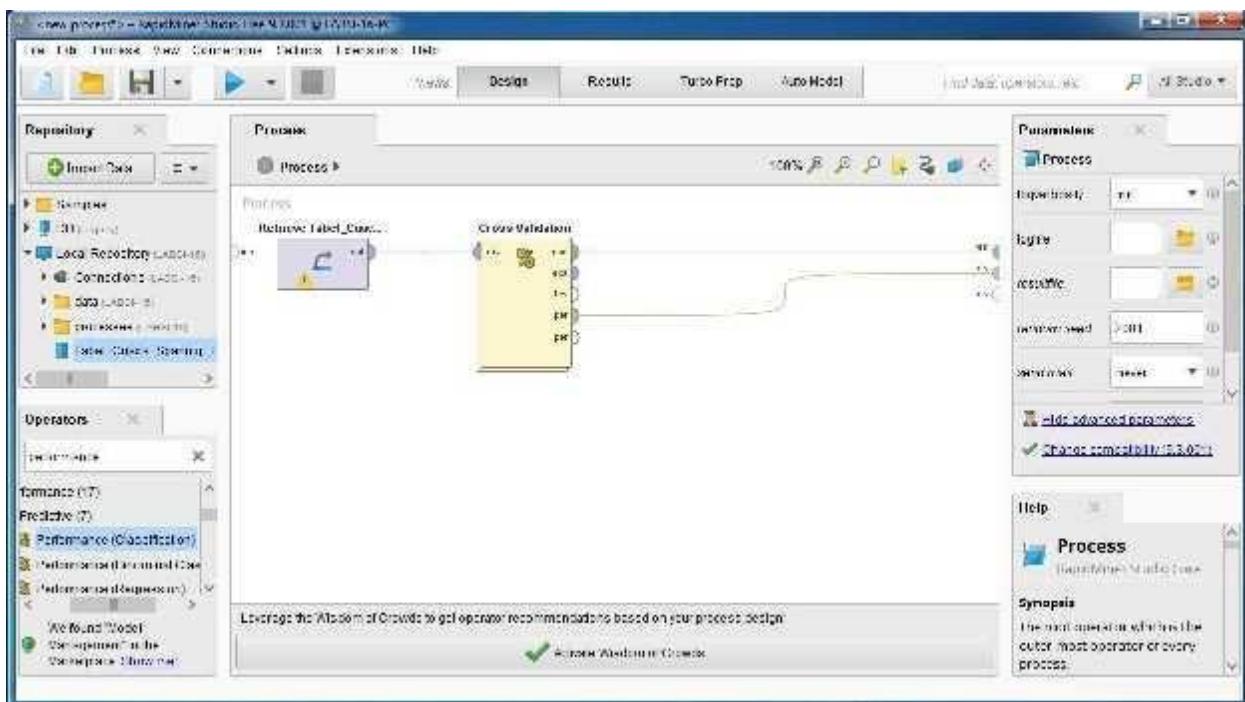


3. Klik kanan pada **Result list** dan pilih **Visual tree**, untuk melihat **Pohon Keputusannya**.

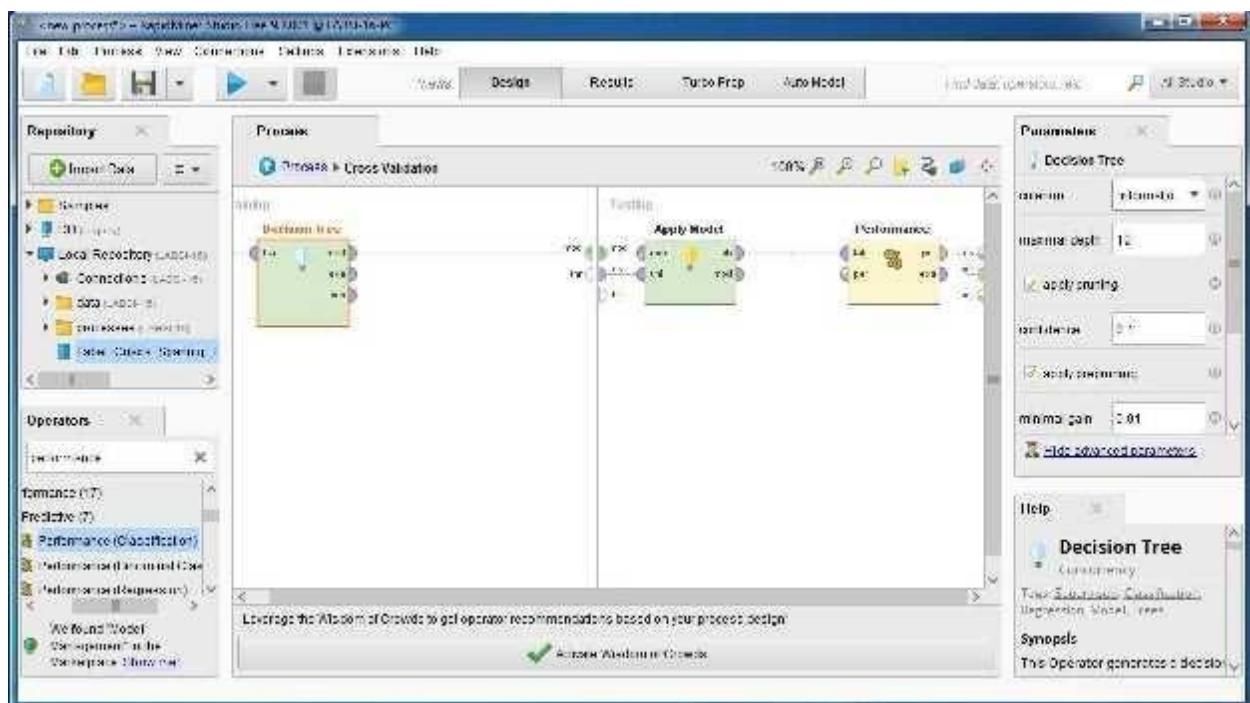


#### 9.4.1 Pohon Keputusan Menggunakan RapidMiner

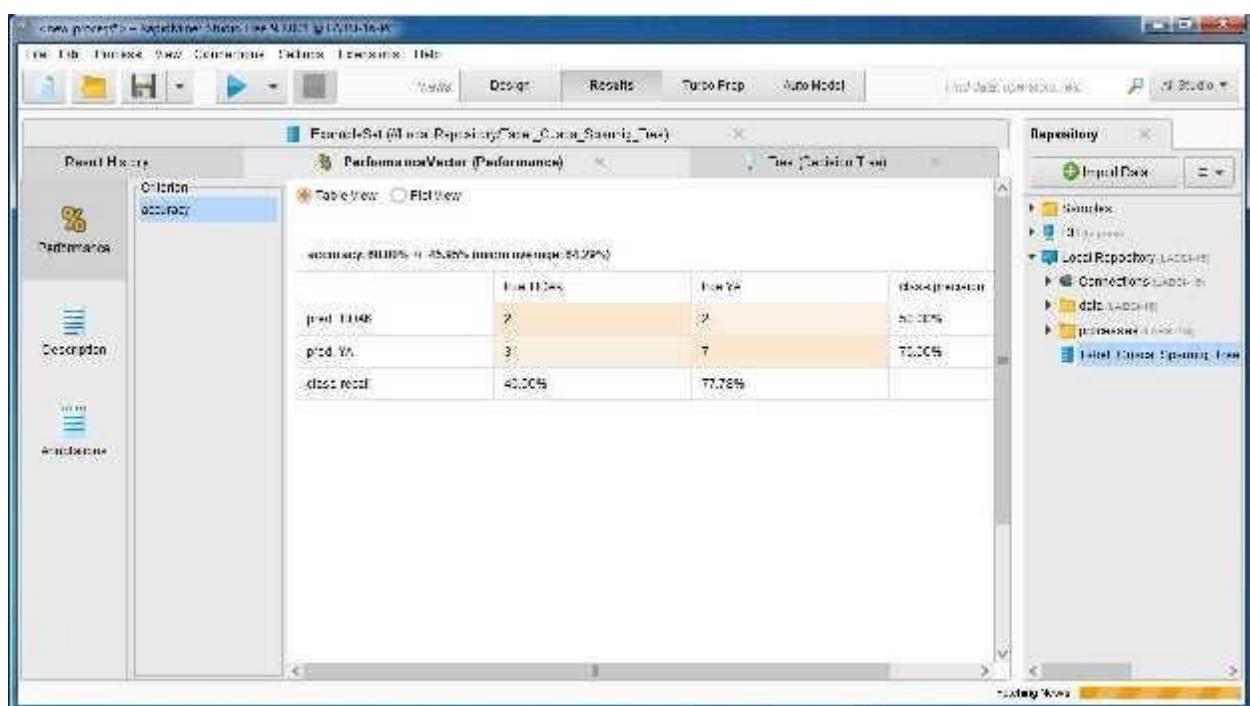
1. Buka **RapidMiner** dan klik **New Process => Blank** pada halaman perspective RapidMiner dan buat data Training, masukkan data training tersebut ke kolom **Process** lalu cari pada kolom **Operators** ketikkan **cross validation**.

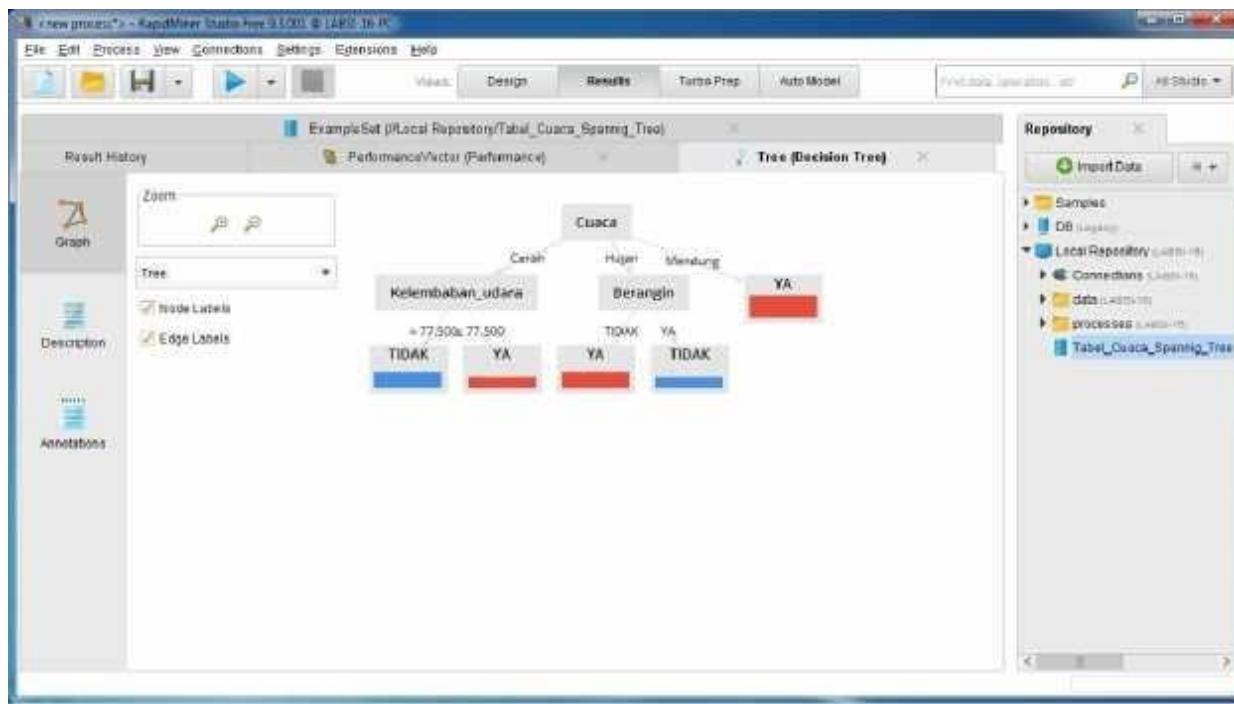


2. Klik 2X pada **Cross Validation** dan masukkan **decision**, **apply model**, dan **performance**, lalu arahkan sesuai instruksi buku.



3. Klik **Start (Simbol segitiga)** lalu lihat hasilnya.

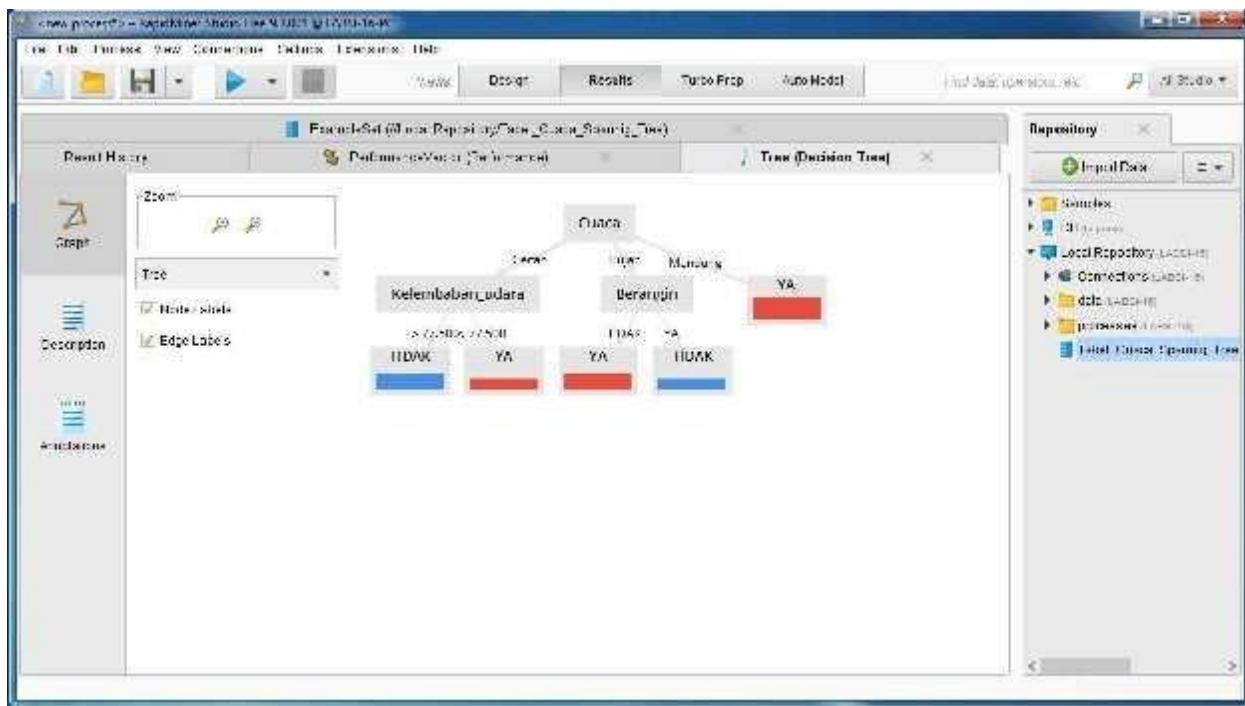




## TUGAS

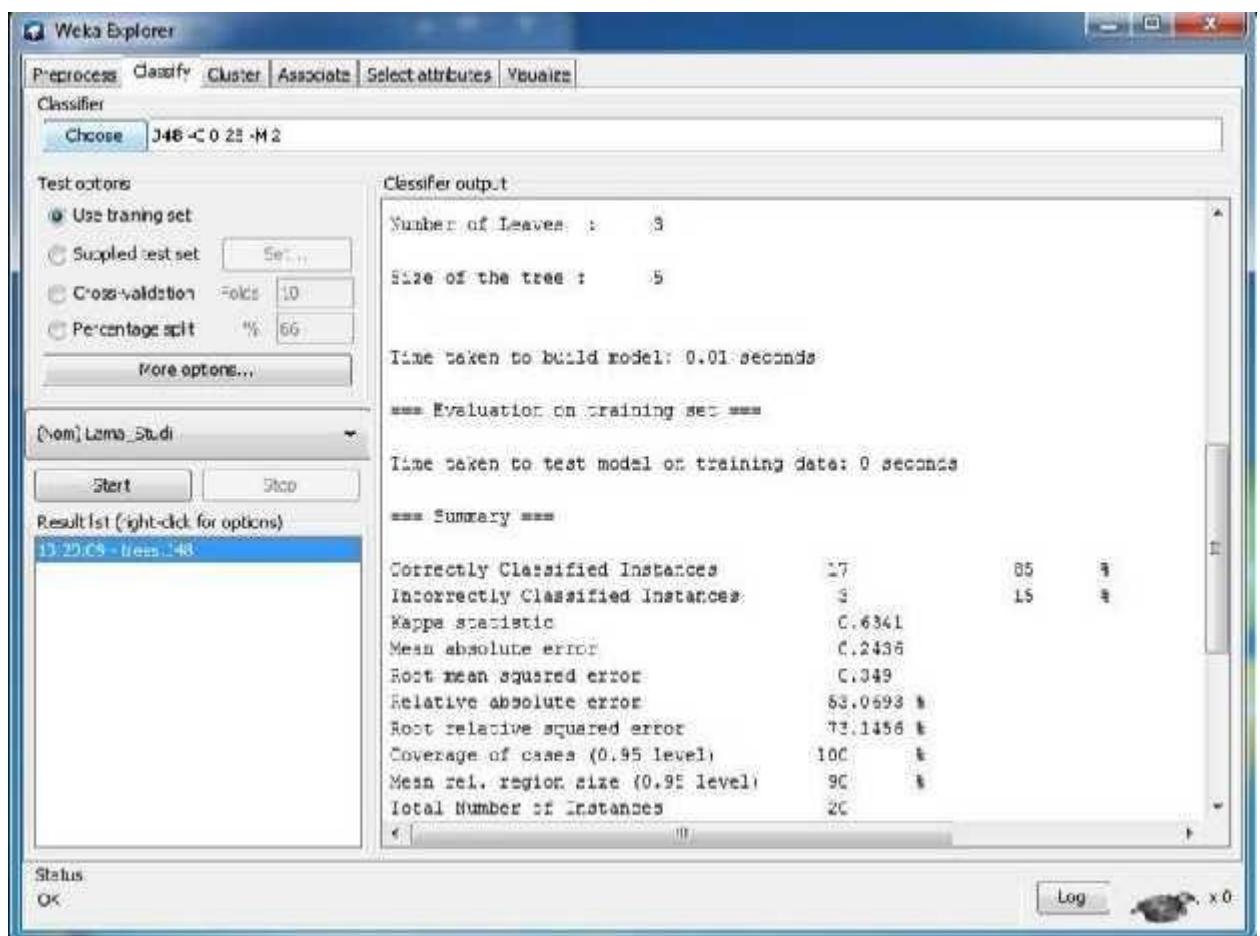
- Berdasarkan pohon keputusan pada kegiatan 9.4.2 (menggunakan RapidMiner), isikan nilai kelas atribut Bermain\_Tenis pada tabel Testing berikut :

Cuaca	Suhu	Kelembapan_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. Gunakan file ARFF yang dikerjakan pada Tugas nomor 1 dalam Modul 7 sebagai data training.

a) Buatlah dan cetaklah pohon keputusan berdasarkan data tersebut!

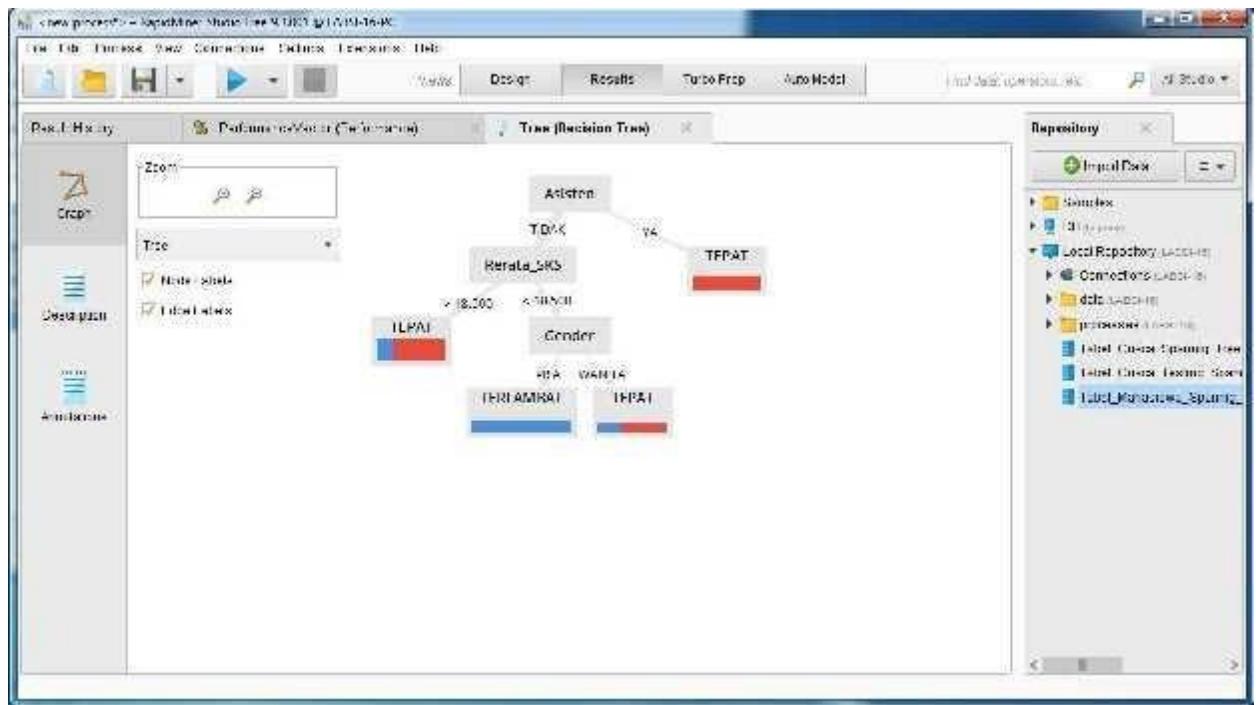


b) Carilah nilai-nilai parameter berikut :

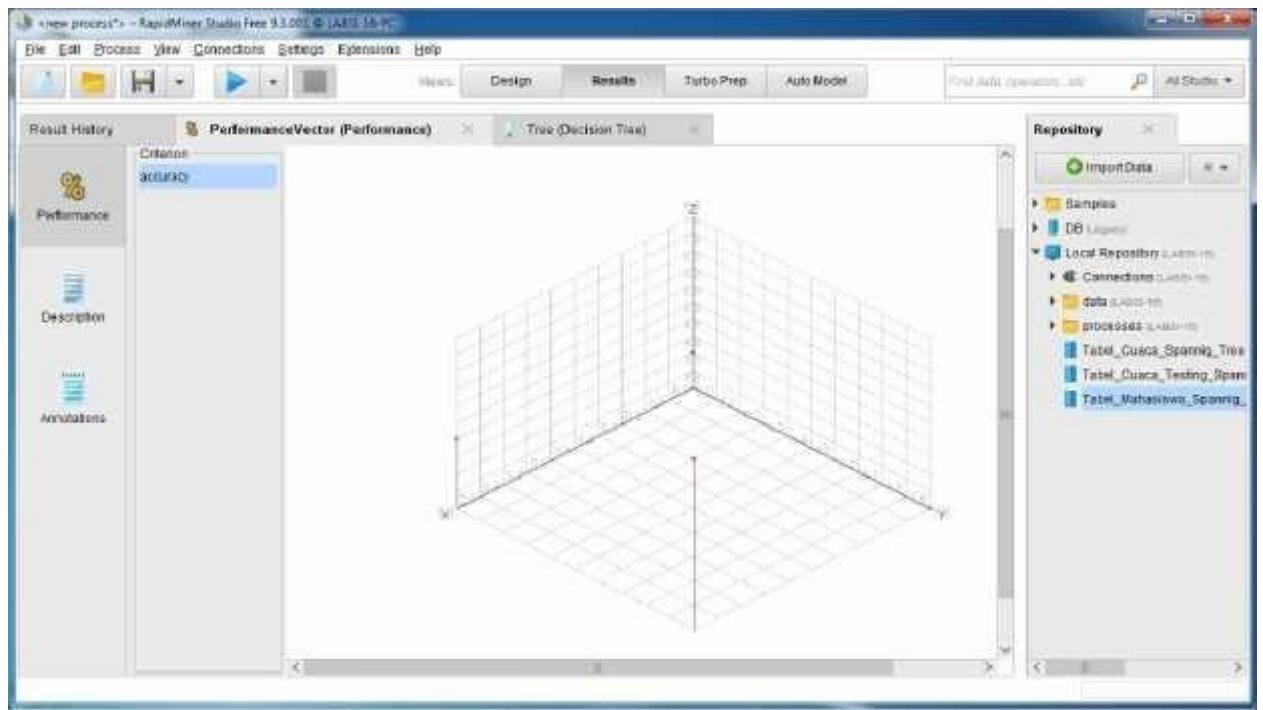
- i. Jumlah simpul daun pada pohon keputusan = 3
- ii. Jumlah simpul keseluruhan pada pohon keputusan = 5
- iii. Waktu yang dibutuhkan untuk proses pelatihan = 0
- iv. Tingkat ketepatan klasifikasi = 85%
- v. Tangka ketidaktepatan klasifikasi = 15%

3. Gunakan file Excel yang dikerjakan pada Tugas nomor 1 dalam Modul 6 sebagai data training.

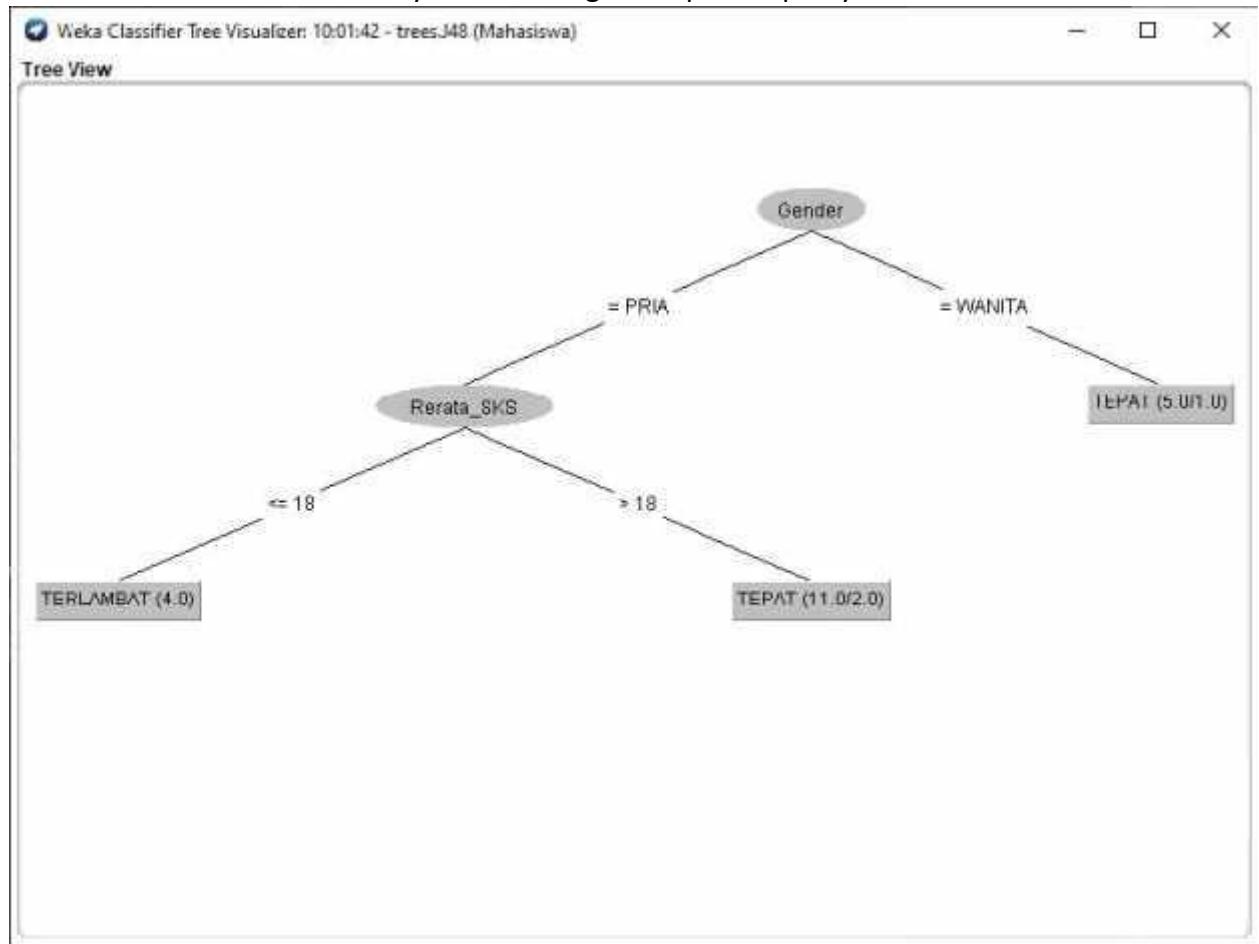
a) Buatlah dan cetaklah pohon keputusan berdasarkan data tersebut!



b) Cetaklah Perspektif Plot View dengan model Scatter. X-Axis = Gender, Y-Axis = Asisten, dan Color Column = Lama\_Studi. Nilai Jitter bisa diubah-ubah untuk memperoleh pola penyebaran yang lebih jelas.



4. Berdasarkan pohon keputusan dari soal nomor 2, tentukan klasifikasi yang terbentuk berdasarkan kondisinya sesuai dengan simpul-simpulnya.



Klasifikasi yang terbentuk yaitu,

a) Mahasiswa akan lulus TEPAT waktu jika,

- i. PRIA = Rerata\_SKS > 18 (Nilai attribute lain diabaikan).
- ii. WANITA = Semua akan lulus TEPAT waktu (Nilai attribute lain diabaikan).

b) Mahasiswa akan lulus TERLAMBAT jika,

- i. PRIA = Rerata\_SKS <= 18 (Nilai attribute lain diabaikan). ii. WANITA = Tidak ada yang akan lulus TERLAMBAT (Nilai attribute lain diabaikan).

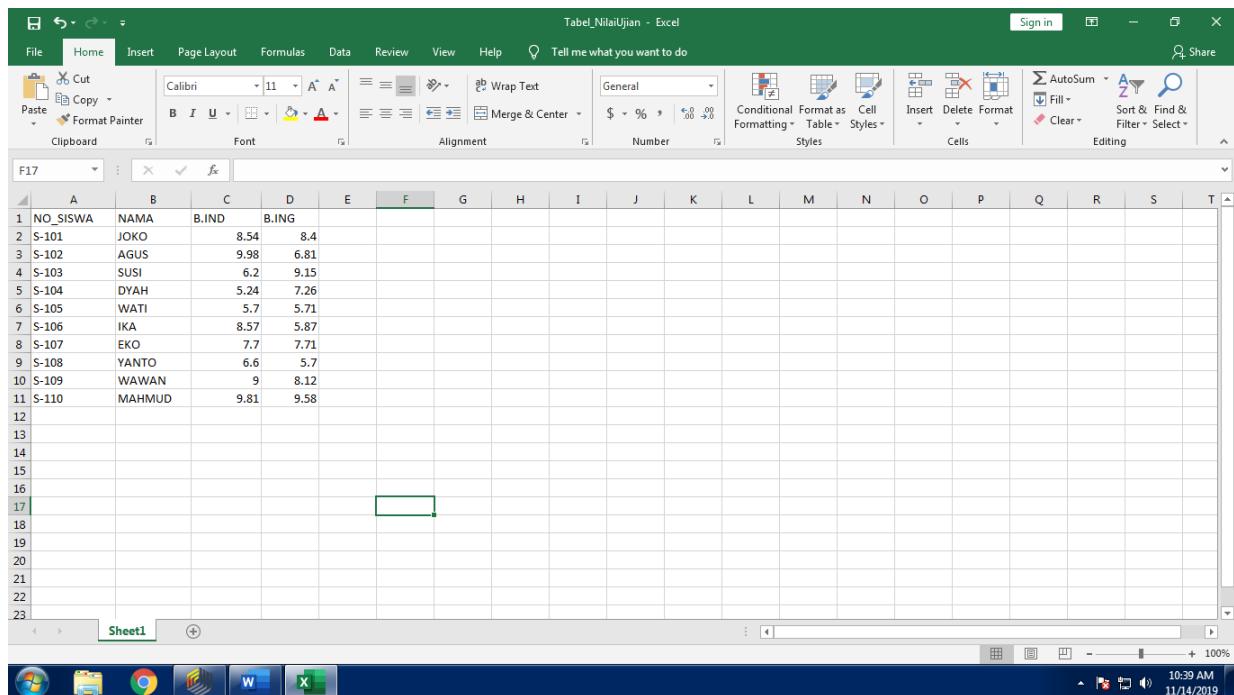
NAMA : ROSSANTI KUSUMADEWI

NIM : L200170092

MODUL : 10

## ***KEGIATAN PRAKTIKUM***

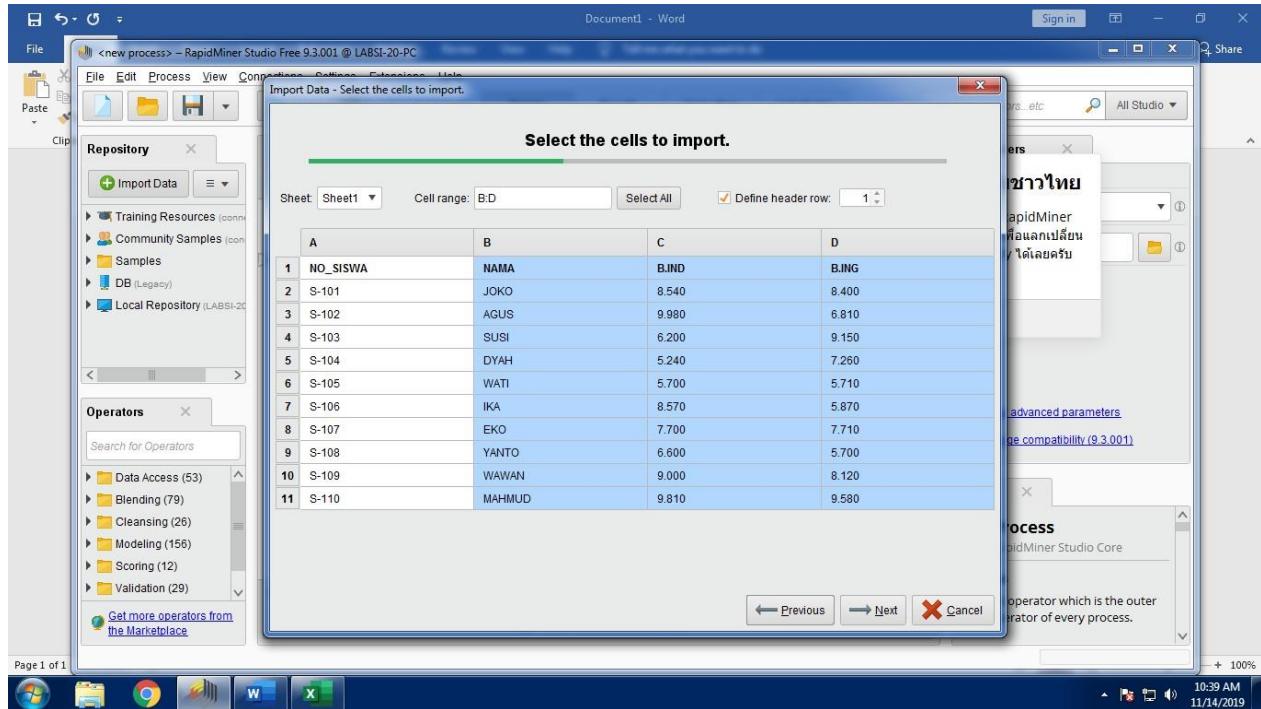
- Berikut table data nilai siswa :



The screenshot shows a Microsoft Excel spreadsheet titled "Tabel\_NilaiUjian - Excel". The table has columns labeled NO\_SISWA, NAMA, B.IND, and B.ING. The data includes 11 rows of student information. Row 17 is highlighted in green, indicating it is selected.

NO_SISWA	NAMA	B.IND	B.ING
S-101	JOKO	8.54	8.4
S-102	AGUS	9.98	6.81
S-103	SUSI	6.2	9.15
S-104	DYAH	5.24	7.26
S-105	WATI	5.7	5.71
S-106	IKA	8.57	5.87
S-107	EKO	7.7	7.71
S-108	YANTO	6.6	5.7
S-109	WAWAN	9	8.12
S-110	MAHMUD	9.81	9.58

- Gunakan file Tabel\_NilaiUjian.xlsx sebagai data yang akan digunakan dalam proses Clustering. Lalu import ke dalam aplikasi RapidMiner.



NAMA	B.IND	B.ING
JOKO	8.540	8.400
AGUS	9.980	6.810
SUSI	6.200	9.150
DYAH	5.240	7.260
WATI	5.700	5.710
IKA	8.570	5.870
EKO	7.700	7.710
YANTO	6.600	5.700
WAWAN	9.000	8.120
MAHMUD	9.810	9.580

The screenshot shows the RapidMiner Studio interface. On the left, there's a sidebar with 'Result History' and tabs for 'Data', 'Statistics', 'Visualizations', and 'Annotations'. The main area displays a table titled 'ExampleSet (10 examples, 1 special attribute, 2 regular attributes)'. The table has columns: Row No., NAMA, BJND, and BJNG. The data is as follows:

Row No.	NAMA	BJND	BJNG
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

A right-hand panel displays a welcome message from RapidMiner Thailand, featuring a photo of a person and text in Thai. Below the message is a 'Repository' section showing connections to ABSI-20 and ABSI-20 (v1, 11/).

- Tambahkan operator k-Means. Lalu Jalankan dengan menekan tombol run (F11)

The screenshot shows the RapidMiner Studio interface in 'Design' mode. On the left, there's a 'Repository' panel with 'Samples', 'DB (Legacy)', and 'Local Repository (LABSI-20)' sections. Below it is an 'Operators' panel with a 'svd' category. The main workspace shows a process flow: 'Retrieve Data\_NilaiUjian' → 'Clustering' → 'SVD'. The 'Parameters' panel is open for the 'SVD (Singular Value Decomposition)' operator, showing 'dimensionality reduction' set to 'fixed number' and 'dimensions' set to 1. The 'Help' panel provides information about the Singular Value Decomposition operator.

- Nilai Eigenvalue

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

- Title Bar:** Document1 - Word
- Menu Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help
- Toolbar:** Standard icons for Paste, Clip, etc.
- Views:** Design, Results, Turbo Prep, Auto Model
- Search Bar:** Find data, operators...etc, All Studio
- Result History:** Cluster Model (Clustering), ExampleSet (/Local Repository/Data\_NilaiUjian), SVD (SVD), ExampleSet (Clustering), ExampleSet (SVD)
- Eigenvalues View:**

Component	Singular Value	Proportion of Singular V...	Cumulative Singular Val...	Cumulative Proportion o...
SVD 1	34.340	0.898	34.340	0.898
SVD 2	3.906	0.102	38.246	1.000
- Repository View:**
  - Import Data
  - Training Resources (connected)
  - Community Samples (connected)
  - Samples
  - DB (Legacy)
  - Local Repository (LABSI-20)
    - Connections (LABSI-20)
    - data (LABSI-20)
    - processes (LABSI-20)
    - Data\_NilaiUjian (LABSI-20 - v1, 11)
- System Status:** Page 3 of 3, 10:44 AM, 11/14/2019, 100%

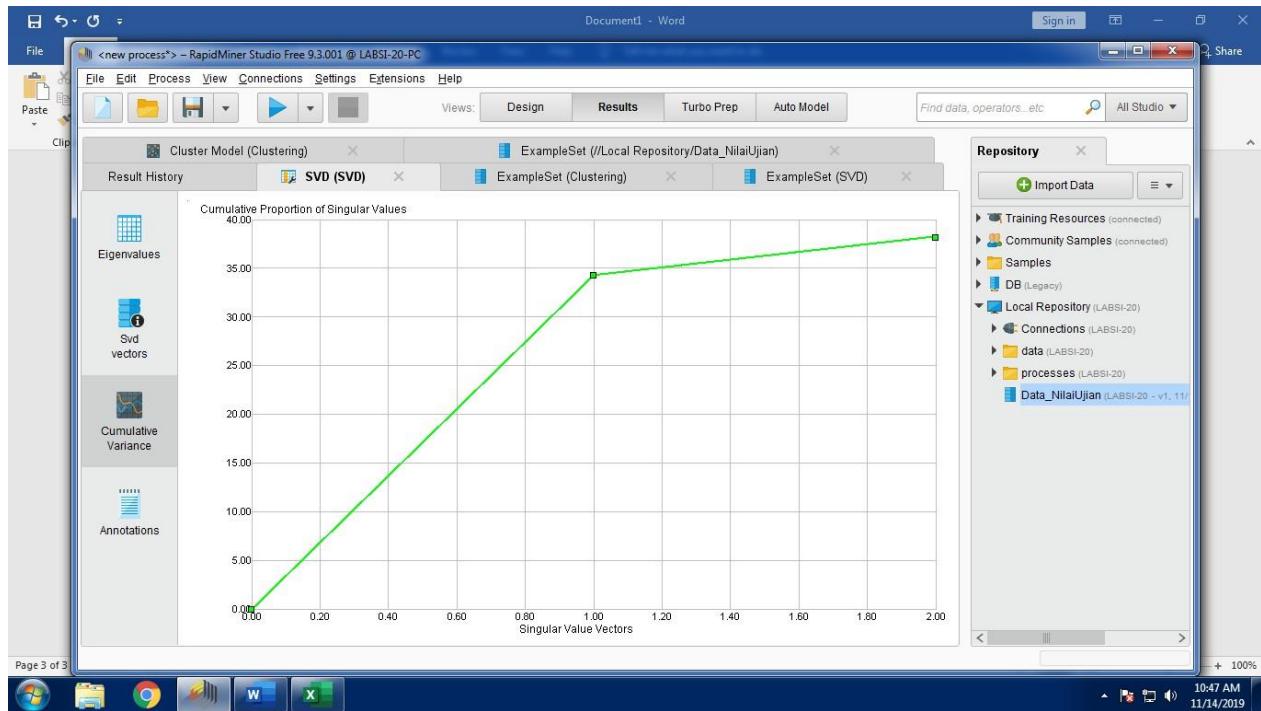
- Nilai Svd vectors

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

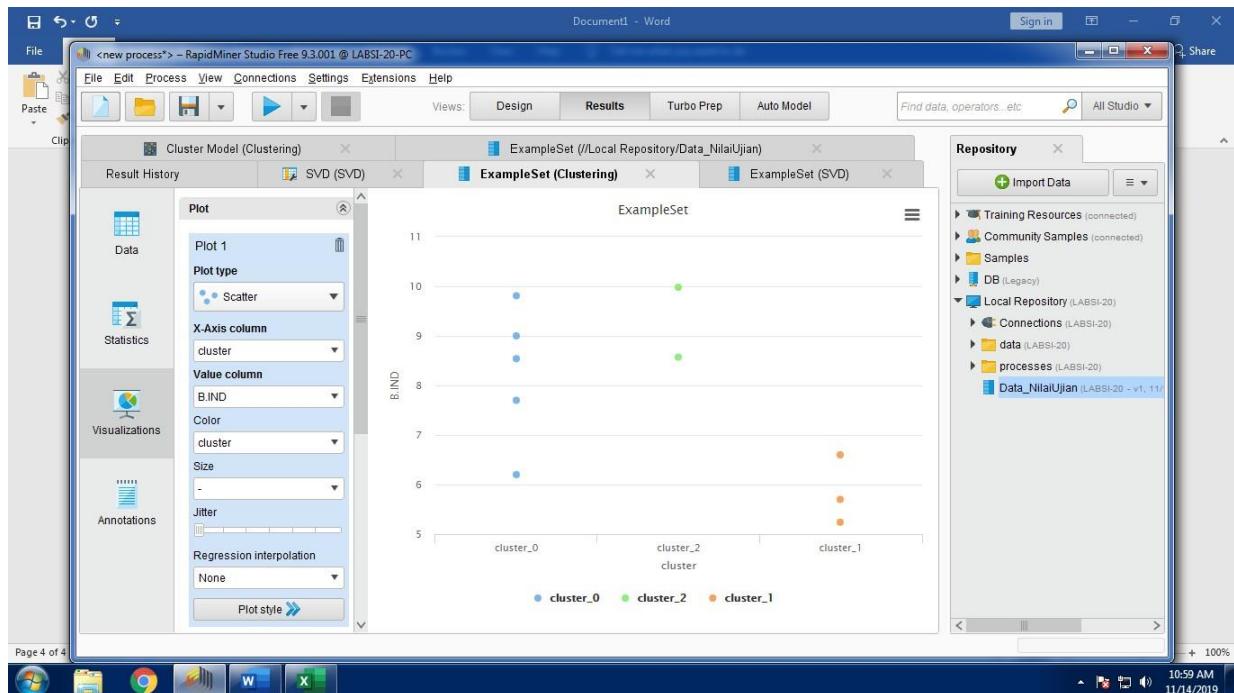
- Title Bar:** Document1 - Word
- Menu Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help
- Toolbar:** Standard icons for Paste, Clip, etc.
- Views:** Design, Results, Turbo Prep, Auto Model
- Search Bar:** Find data, operators...etc, All Studio
- Result History:** Cluster Model (Clustering), ExampleSet (/Local Repository/Data\_NilaiUjian), SVD (SVD), ExampleSet (Clustering), ExampleSet (SVD)
- Svd vectors View:**

Attribute	SVD Vector 1
B.IND	0.723
B.ING	0.690
- Repository View:**
  - Import Data
  - Training Resources (connected)
  - Community Samples (connected)
  - Samples
  - DB (Legacy)
  - Local Repository (LABSI-20)
    - Connections (LABSI-20)
    - data (LABSI-20)
    - processes (LABSI-20)
    - Data\_NilaiUjian (LABSI-20 - v1, 11)
- System Status:** Page 3 of 4, 10:48 AM, 11/14/2019, 100%

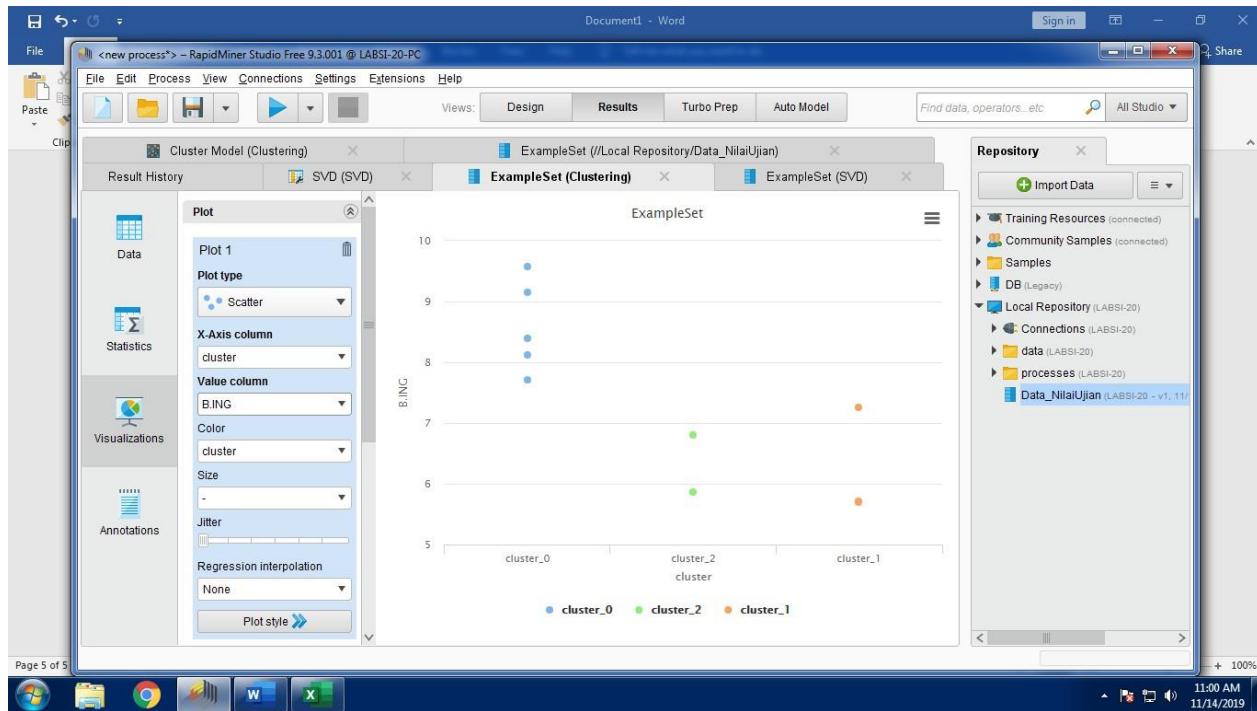
- Nilai Cumulative Variance



- Kelompok siswa bidang B.indonesia



- Kelompok siswa bidang B.inggris



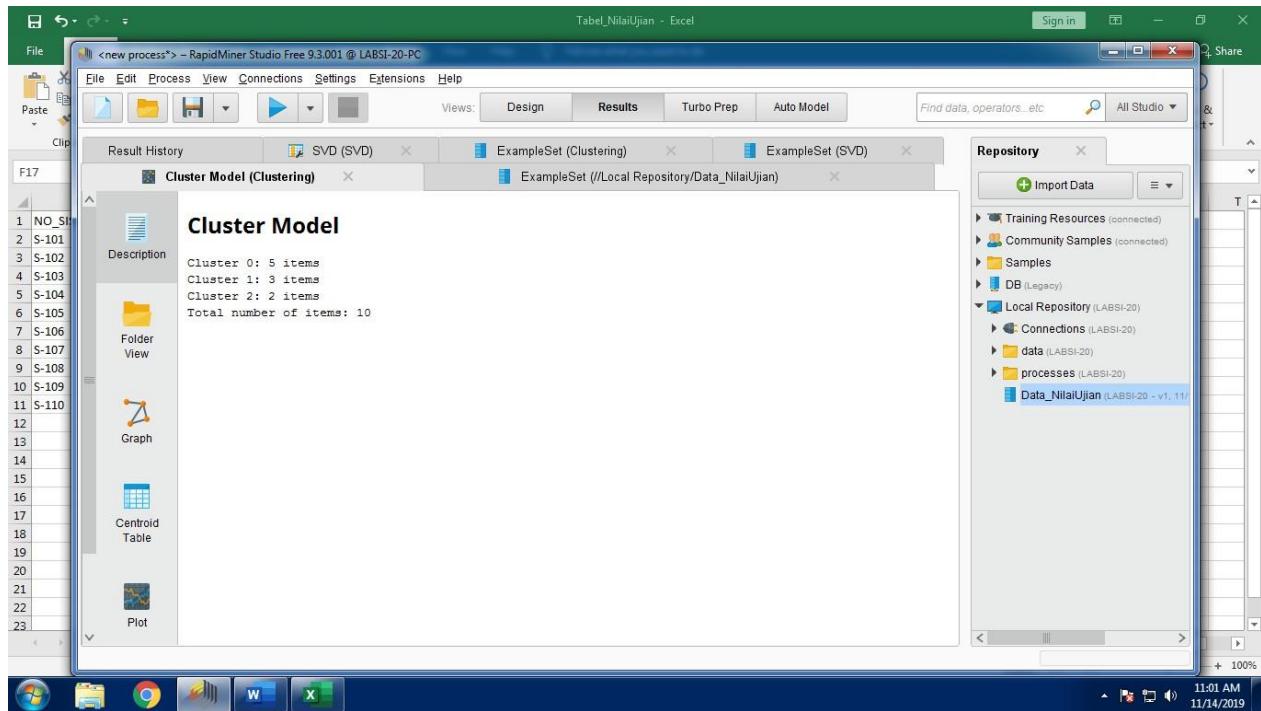
- Kelompok masing-masing siswa yang dikelompokkan berdasarkan cluster 0, cluster 1, cluster 2.

The screenshot shows the RapidMiner Studio interface. The central area displays a table titled 'ExampleSet (10 / 10 examples)'. The columns are Row No., NAMA, cluster, B.IND, and B.ING. The data is as follows:

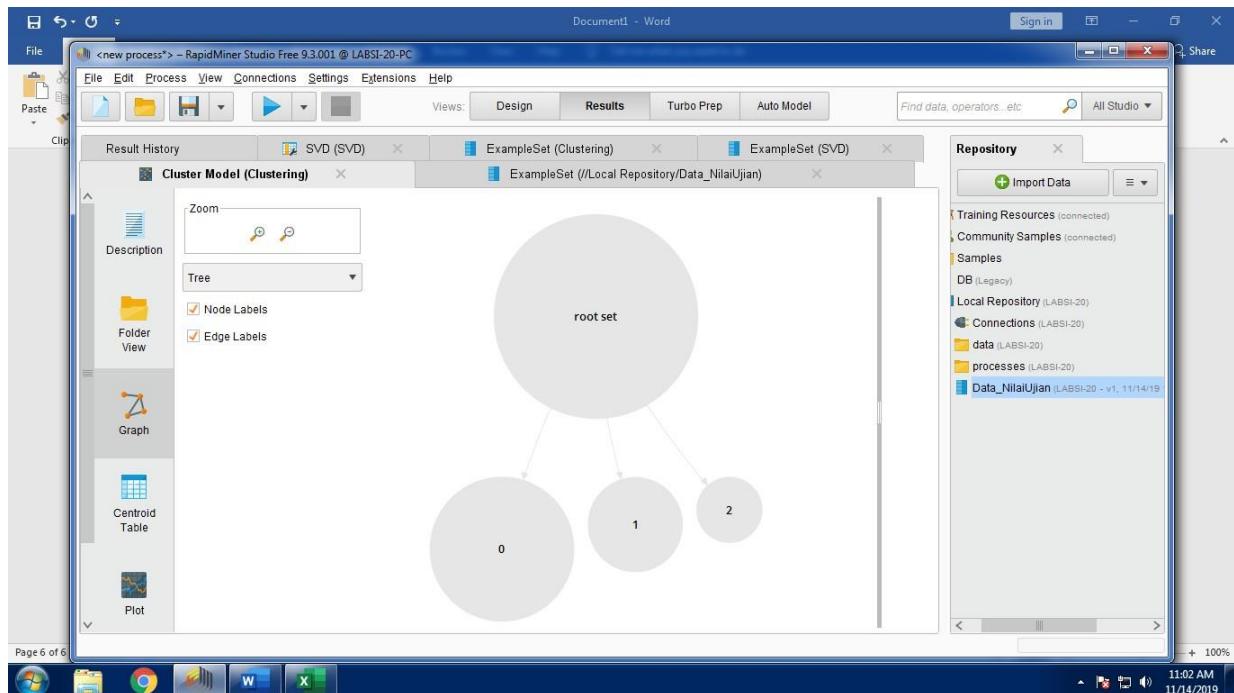
Row No.	NAMA	cluster	B.IND	B.ING
1	JOKO	cluster_0	8.540	8.400
2	AGUS	cluster_2	9.980	6.810
3	SUSI	cluster_0	6.200	9.150
4	DYAH	cluster_1	5.240	7.260
5	WATI	cluster_1	5.700	5.710
6	IKA	cluster_2	8.570	5.870
7	EKO	cluster_0	7.700	7.710
8	YANTO	cluster_1	6.600	5.700
9	WAWAN	cluster_0	9	8.120
10	MAHMUD	cluster_0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

The bottom status bar shows the date and time as 11:01 AM 11/14/2019.

- Description



- Graph



## Kesimpulan :

The screenshot shows the RapidMiner Studio interface. The main window displays a clustered dataset named 'ExampleSet (Clustering)'. The data table has columns: Row No., NAMA, cluster ↑, B.IND, and B.ING. The data rows are:

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

The repository sidebar shows various resources connected to the process, including 'Data\_NilaiUjian' from the local repository.

1. Cluster 2 yang diajukan untuk lomba olimpiade bidang B.Indonesia
2. Cluster 0 yang diajukan untuk lomba olimpiade bidang B.Inggris

## Tugas

- Berikut adalah table siswa dan memasukkan nilai secara random dengan =5+RAND()\*5

The screenshot shows a Microsoft Excel spreadsheet titled "TUGAS.xlsx - Microsoft Excel". The table has columns labeled A through X. The first few rows of data are as follows:

NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA
S-101	JOKO	8,96	9,25	8,40	5,77
S-102	AGUS	5,47	5,88	7,02	5,28
S-103	SUSI	7,27	8,54	7,78	6,68
S-104	DYAH	7,55	5,40	7,95	8,51
S-105	WATI	5,85	7,55	5,11	9,27
S-106	IKA	7,43	8,54	9,27	9,00
S-107	EKO	6,29	9,81	5,24	7,83
S-108	YANTO	7,02	5,64	8,70	7,14
S-109	WAWAN	5,18	5,03	6,97	8,10
S-110	MAHMUD	8,10	5,74	9,37	5,54
S-111	BUDI	7,14	9,38	5,13	5,18
S-112	SANTI	6,74	6,01	6,95	5,93
S-113	DIAN	8,55	9,70	6,58	8,83
S-114	DANI	8,64	6,78	7,07	5,78
S-115	AHMAD	8,79	8,61	9,89	6,91
S-116	BAYU	6,79	9,41	5,60	8,55
S-117	RISA	7,21	7,85	7,81	6,28
S-118	RANI	5,16	9,61	7,19	8,85
S-119	YANI	9,75	5,57	5,63	5,90
S-120	RATIH	6,23	9,10	9,81	6,27
S-121	INDAH	7,30	8,61	9,50	5,19
S-122	JONO	8,42	8,18	7,69	6,93
S-123	SARAH	8,66	6,44	9,54	9,72
S-124	RAMA	9,15	6,99	6,50	8,64
S-125	BAMBANG	7,23	6,46	8,80	5,96
S-126	HADI	5,99	8,64	7,00	7,35
S-127	NANA	7,39	8,78	5,12	9,79
S-128	FEBRI	9,32	6,06	7,48	7,73
S-129	DENI	5,90	7,26	5,82	7,12

- Gunakan file Tugas\_NilaiUjian.xlsb sebagai data yang akan digunakan dalam proses Clustering. Lalu import ke dalam aplikasi RapidMiner.

The screenshot shows the RapidMiner Studio Free interface. A dialog box titled "Import Data - Select the cells to import." is open, showing a preview of data from "Sheet1" with a cell range of "B:F". The data preview includes columns A through F and rows 13 to 26. The RapidMiner interface includes a "Repository" panel on the left, an "Operators" panel, and a "Process" tab at the top. The process tree on the right shows a "k-Means" clustering operator with parameters set for 3 clusters and 10 iterations. The status bar at the bottom indicates "Page 8 of 8" and the date "11/11/2019".

The screenshot shows the RapidMiner interface with the 'Format your columns' dialog box open. The dialog displays a table with 13 rows and 6 columns. The columns are labeled: NAMA, polynominal\_id, B.IND, B.ING, MTK, and IPA. The last column (IPA) contains the value 7.619, which is highlighted with a red border. A green checkmark at the bottom right of the dialog indicates that there are no problems.

- Tambahkan operator k-Means. Lalu Jalankan dengan menekan tombol run (F11)

The screenshot shows the RapidMiner process editor with a process flow. The flow starts with a 'Retrieve Data\_Tugas...' operator, followed by a 'Clustering' operator (highlighted in orange), and then an 'SVD' operator. The 'Parameters' panel on the right is set for the Clustering operator with max runs = 10 and measure types = NumericalMeasures. The process is currently at 100% completion.

- Nilai Eigenvalue

The screenshot shows the RapidMiner Studio interface with the title bar <new process\*> – RapidMiner Studio Free 9.3.001 @ LABSI-19-PC. The main window displays the SVD results under the 'Results' tab. The 'Eigenvalues' view is selected, showing the following data:

Component	Singular Value	Proportion of Singular V...	Cumulative Singular Val...	Cumulative Proportion o...
SVD 1	83.539	0.793	83.539	0.793
SVD 2	7.636	0.072	91.175	0.865
SVD 3	7.371	0.070	98.546	0.935
SVD 4	6.821	0.065	105.367	1.000

The 'Repository' panel on the right shows the local repository structure.

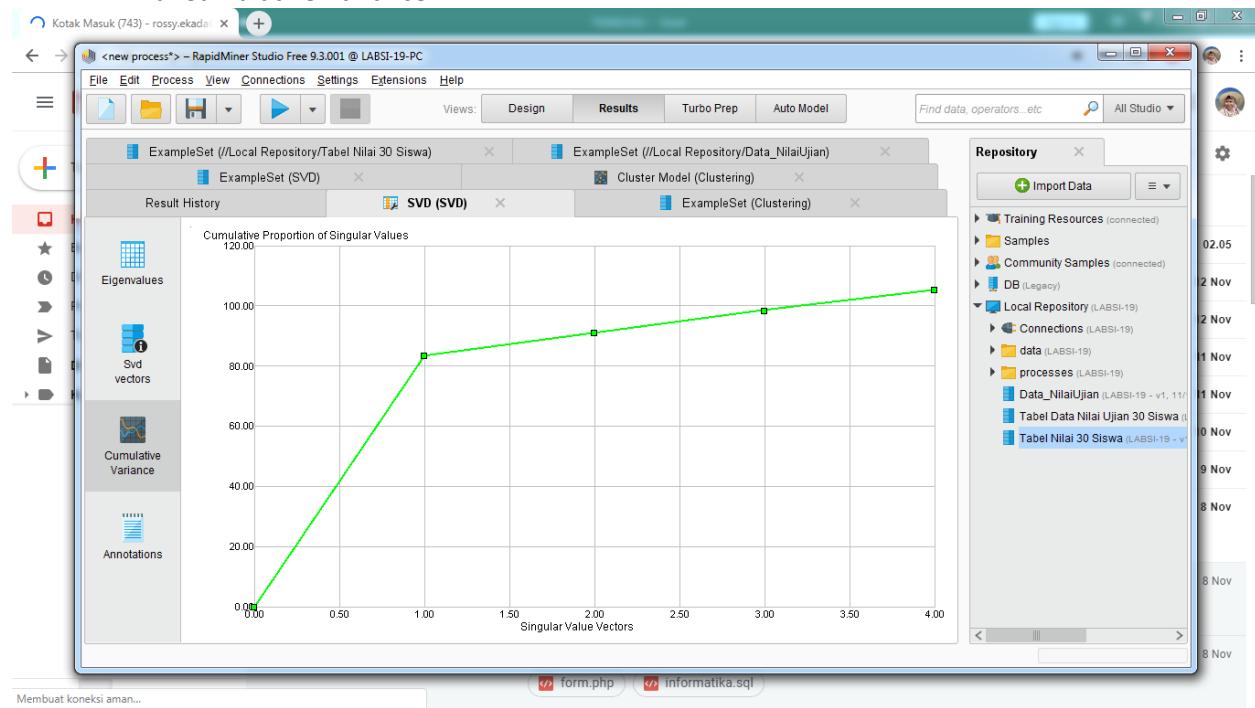
- Nilai Svd Vectors

The screenshot shows the RapidMiner Studio interface with the title bar <new process\*> – RapidMiner Studio Free 9.3.001 @ LABSI-19-PC. The main window displays the SVD results under the 'Results' tab. The 'Svd vectors' view is selected, showing the following data:

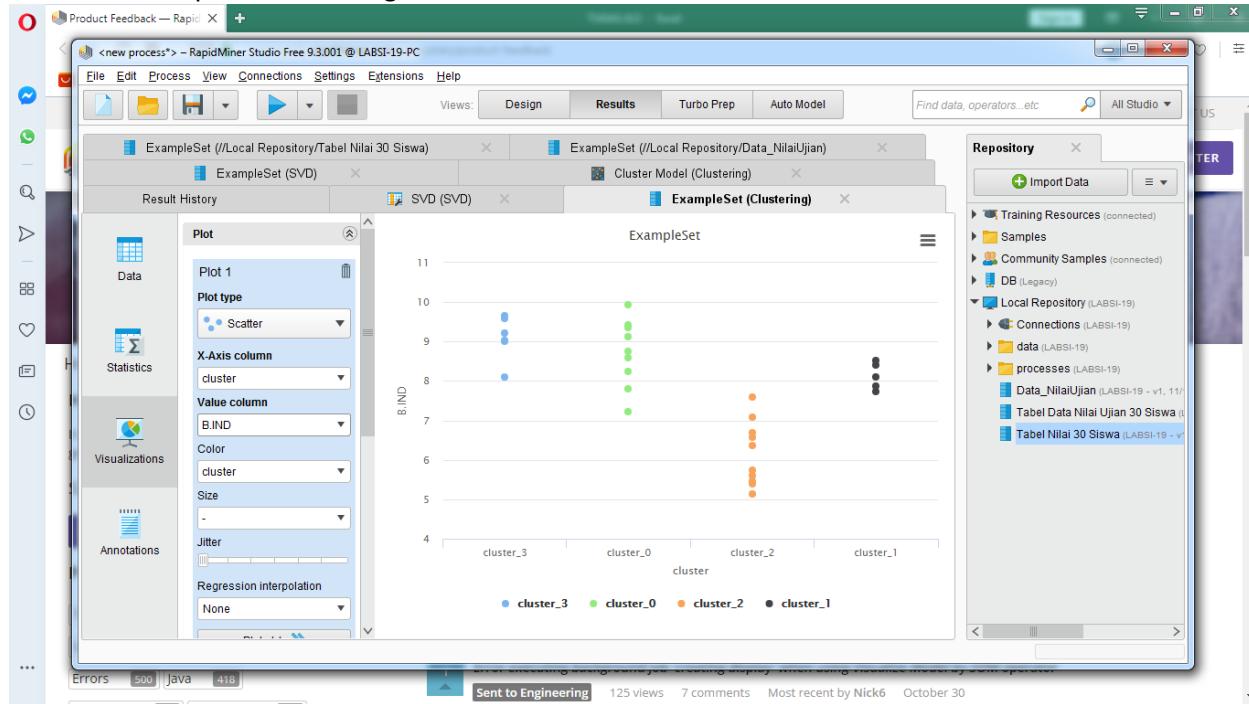
Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
BIND	0.517	-0.342	0.712
BING	0.505	0.640	0.194
MTK	0.493	-0.610	-0.456
IPA	0.485	0.319	-0.498

The 'Repository' panel on the right shows the local repository structure.

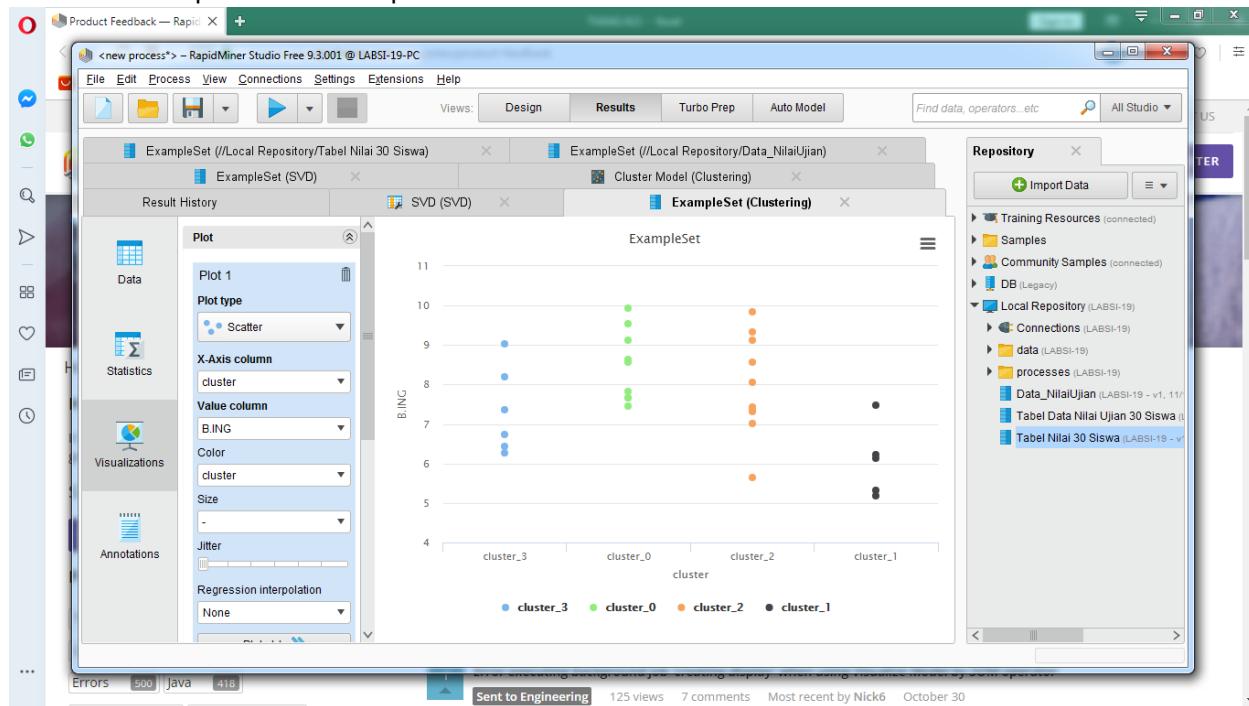
- Nilai Cumulative Variance



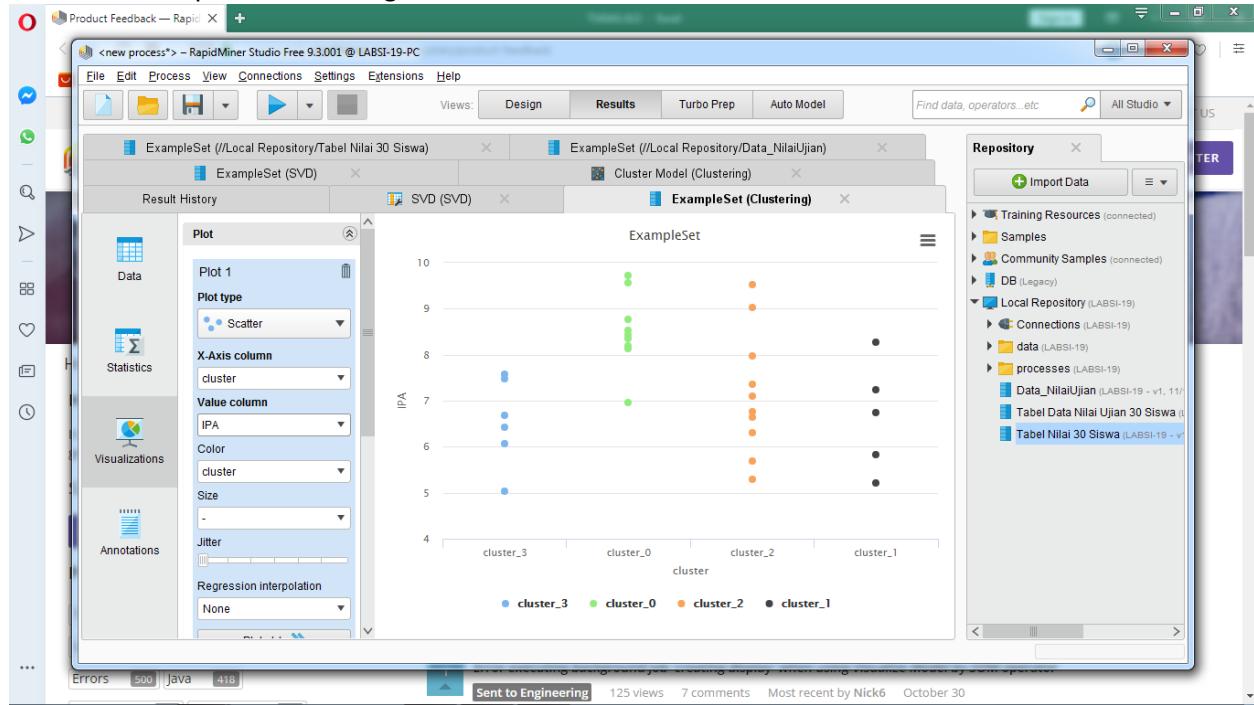
- Kelompok siswa bidang B.INDONESIA



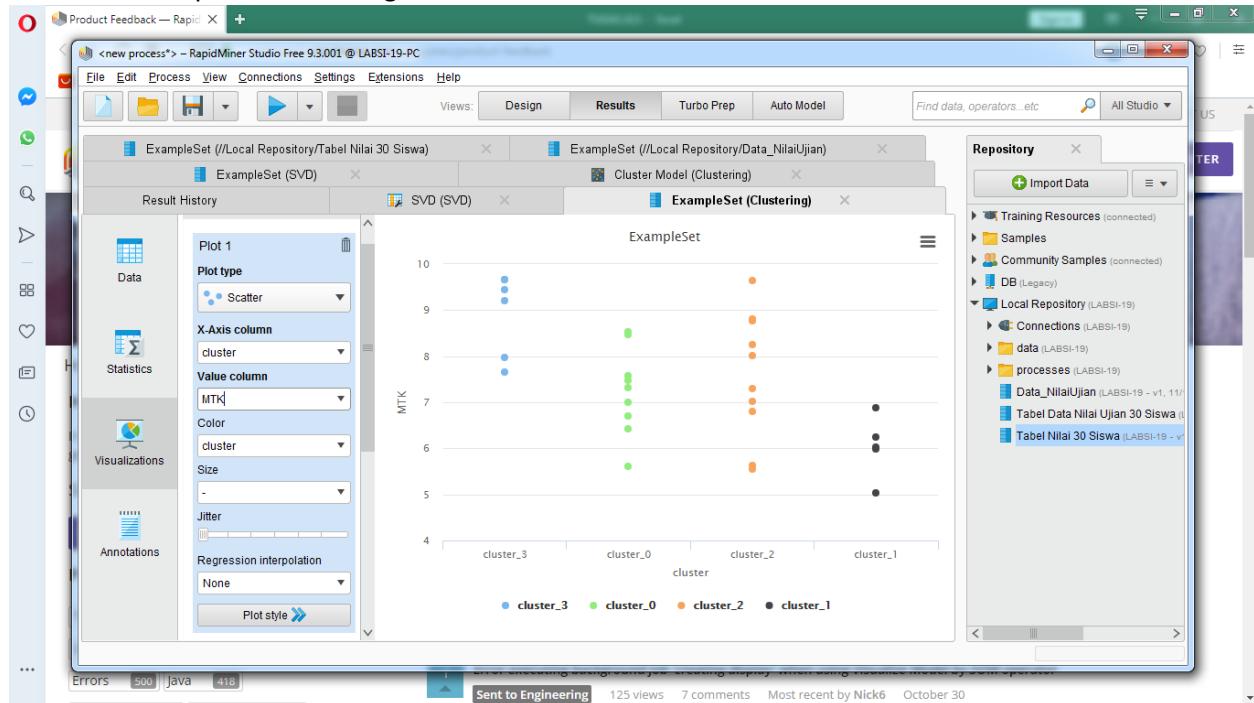
- Kelompok siswa kelompok B.ING



- Kelompok siswa bidang IPA



- Kelompok siswa bidang MTK



- Masing-masing nama siswa yang terdapat dalam kelompok cluster 0, cluster 1, cluster 2, cluster 3.

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

- Title Bar:** Product Feedback — RapidMiner Studio Free 9.3.001 @ LABSI-19-PC
- Menu Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help
- Toolbar:** Includes icons for Open, Save, Run, Stop, and others.
- Result History:** Shows three entries: SVD (SVD), ExampleSet (Clustering), and Cluster Model (Clustering).
- Views:** Design, Results, Turbo Prep, Auto Model.
- Search Bar:** Find data, operators...etc
- Repository:** Local Repository (LABSI-19) containing Training Resources, Samples, Community Samples, DB (Legacy), and Local Repository (LABSI-19) with various connections and data sets.
- Data Tab:** Displays a table titled "ExampleSet (SVD)" with the following data:

Row No.	NAMA	cluster ↑	svd_1
2	AGUS	cluster_0	0.201
3	SUSI	cluster_0	0.205
4	DYAH	cluster_0	0.200
9	WAWAN	cluster_0	0.193
11	BUDI	cluster_0	0.198
14	DANI	cluster_0	0.193
17	RISA	cluster_0	0.201
21	INDAH	cluster_0	0.195
23	SARAH	cluster_0	0.190
12	SANTI	cluster_1	0.169
20	RATIH	cluster_1	0.163

- Annotations:** ExampleSet (30 examples, 2 special attributes, 1 regular attribute)
- Bottom Status Bar:** Errors 500, Java 418, Sent to Engineering, 125 views, 7 comments, Most recent by Nick6, October 30.

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

- Title Bar:** Product Feedback — RapidMiner Studio Free 9.3.001 @ LABSI-19-PC
- Menu Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help
- Toolbar:** Includes icons for Open, Save, Run, Stop, and others.
- Result History:** Shows three entries: SVD (SVD), ExampleSet (Clustering), and Cluster Model (Clustering).
- Views:** Design, Results, Turbo Prep, Auto Model.
- Search Bar:** Find data, operators...etc
- Repository:** Local Repository (LABSI-19) containing Training Resources, Samples, Community Samples, DB (Legacy), and Local Repository (LABSI-19) with various connections and data sets.
- Data Tab:** Displays a table titled "ExampleSet (SVD)" with the following data:

Row No.	NAMA	cluster ↑	svd_1
24	RAMA	cluster_1	0.159
29	DENI	cluster_1	0.150
30	TONI	cluster_1	0.164
5	WATI	cluster_2	0.157
6	IKA	cluster_2	0.172
8	YANTO	cluster_2	0.172
10	MAHMUD	cluster_2	0.180
13	DIAN	cluster_2	0.172
16	BAYU	cluster_2	0.155
18	RANI	cluster_2	0.200
22	JONO	cluster_2	0.178

- Annotations:** ExampleSet (30 examples, 2 special attributes, 1 regular attribute)
- Bottom Status Bar:** Errors 500, Java 418, Sent to Engineering, 125 views, 7 comments, Most recent by Nick6, October 30.

Product Feedback — RapidMiner

<new process> — RapidMiner Studio Free 9.3.001 @ LABSI-19-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 (//Local Repository/Tabel Nilai 30 Siswa) ExampleSet (//Local Repository/Data\_NilaiUjian)

ExampleSet (SVD) Cluster Model (Clustering)

Data Statistics Visualizations Annotations

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

Row No.	NAMA	cluster ↑	svd_1
16	BAYU	cluster_2	0.155
18	RANI	cluster_2	0.200
22	JONO	cluster_2	0.178
27	NANA	cluster_2	0.160
28	FEBRI	cluster_2	0.181
1	JOKO	cluster_3	0.189
7	EKO	cluster_3	0.190
15	AHMAD	cluster_3	0.183
19	YANI	cluster_3	0.196
25	BAMBANG	cluster_3	0.197
26	HADI	cluster_3	0.193

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

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-19)
  - Connections (LABSI-19)
  - data (LABSI-19)
  - processes (LABSI-19)
  - Data\_NilaiUjian (LABSI-19 - v1, 11/11)
  - Tabel Data Nilai Ujian 30 Siswa (LABSI-19 - v1, 11/11)
  - Tabel Nilai 30 Siswa (LABSI-19 - v1, 11/11)

Errors 500 Java 418 Sent to Engineering 125 views 7 comments Most recent by Nick6 October 30

- Description

Product Feedback — RapidMiner

<new process> — RapidMiner Studio Free 9.3.001 @ LABSI-19-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 (//Local Repository/Tabel Nilai 30 Siswa) ExampleSet (//Local Repository/Data\_NilaiUjian)

ExampleSet (SVD) Cluster Model (Clustering)

Description Folder View Graph Centroid Table

### Cluster Model

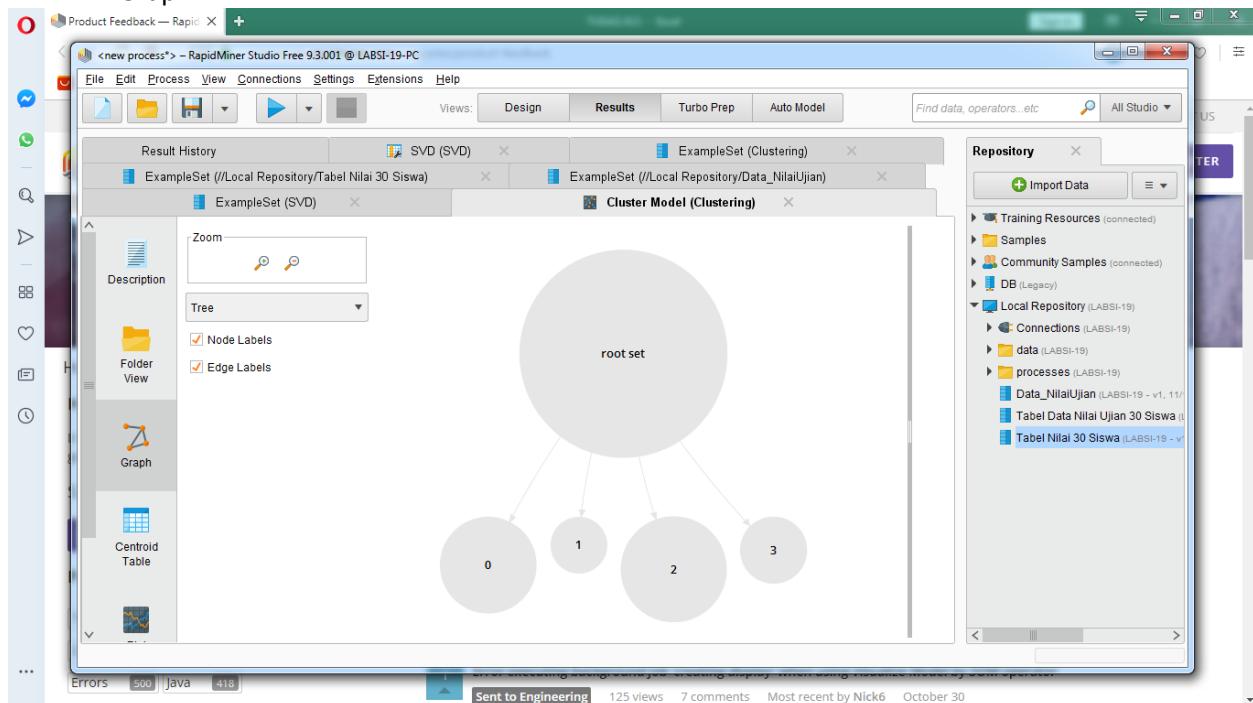
Cluster 0: 9 items  
Cluster 1: 5 items  
Cluster 2: 10 items  
Cluster 3: 6 items  
Total number of items: 30

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-19)
  - Connections (LABSI-19)
  - data (LABSI-19)
  - processes (LABSI-19)
  - Data\_NilaiUjian (LABSI-19 - v1, 11/11)
  - Tabel Data Nilai Ujian 30 Siswa (LABSI-19 - v1, 11/11)
  - Tabel Nilai 30 Siswa (LABSI-19 - v1, 11/11)

Errors 500 Java 418 Sent to Engineering 125 views 7 comments Most recent by Nick6 October 30

- Graph



NAMA : ROSSANTI KUSUMADEWI

NIM : L200170092

MODUL : 11

#### A. Kegiatan praktikum

##### 1. Induksi Aturan Data Cuaca

- Menggunakan proses dari praktikum modul 9 dan menghasilkan sebuah pohon keputusan seperti gambar dibawah.



- Mengubah parameter sehingga menghasilkan sebuah induksi aturan dari data training yang disebut sebagai Rule Model

```

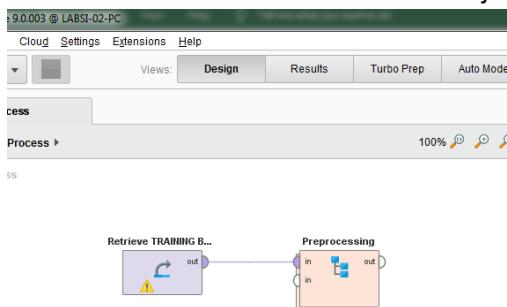
if Kelembaban_udara ≤ 82.500 then YA (1 / 6)
if Cuaca = Cerah then TIDAK (3 / 0)
if Cuaca = Mendung then YA (0 / 2)
if Suhu ≤ 70.500 then YA (0 / 1)
else TIDAK (0 / 0)

correct: 12 out of 13 training examples.

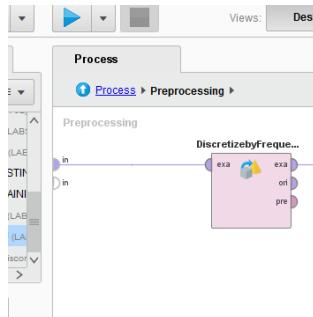
```

## 2. Aturan Asosiasi Data Cuaca

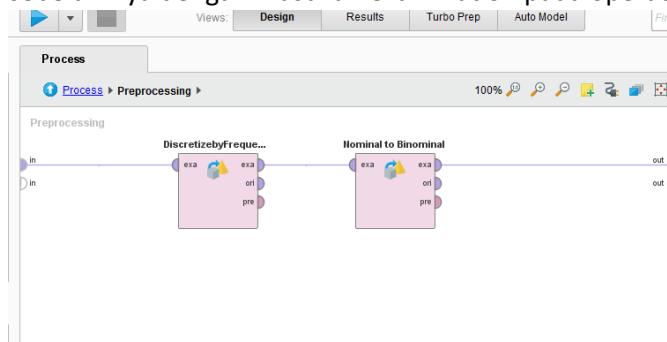
- Menggunakan DataCuaca\_Training dan menggunakan parameter subprocess ke dalam area. Lalu ubah nama menjadi preprocessing.



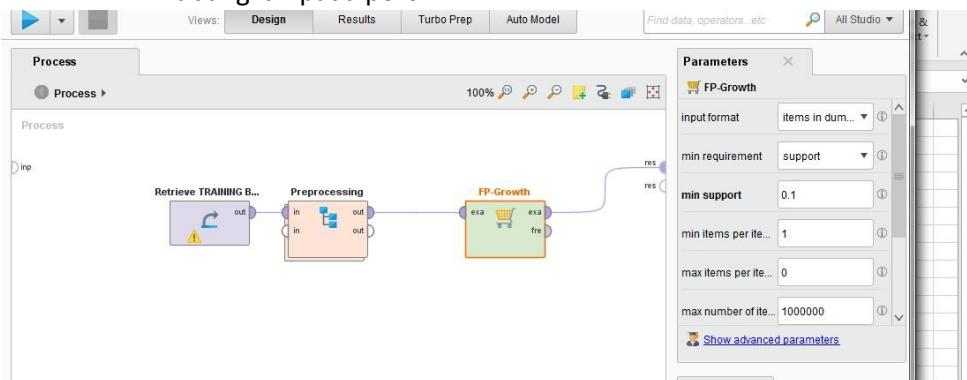
- b. Klik ganda pada operator preprocessing sehingga masuk pada nested chain. Lalu rename menjadi "DiscretizebyFrequency" dan biarkan nilai parameter number of bins = 2.



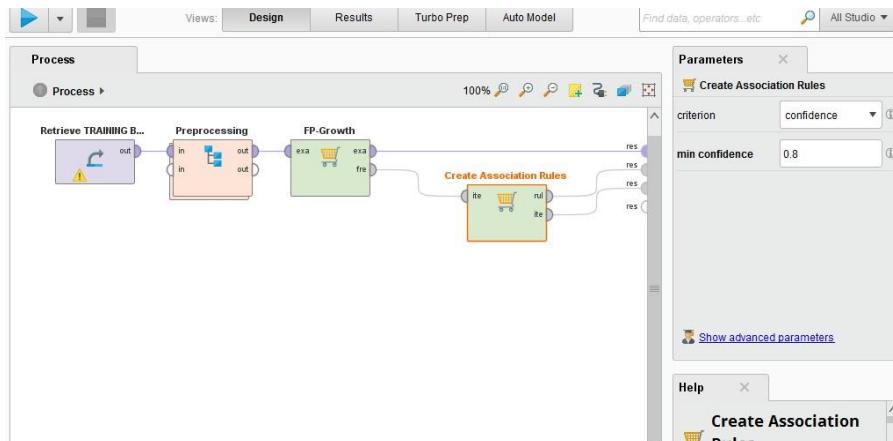
- c. Mengubah nama operator menjadi "Nominal2Binomial" dan menghubungkan operator sebelumnya dengan masukan examination pada operator ini dengan panel out.



- d. Tambahkan parameter Fp-Growth dan ubah parameter pada min support = 0,1 dan hubungkan pada port.



- e. Tambahkan parameter Create Association Rules dan menghubungkan operator-operator tersebut.



f. Dapat dilihat hasil-hasil aturan asosiasi sebagai berikut.

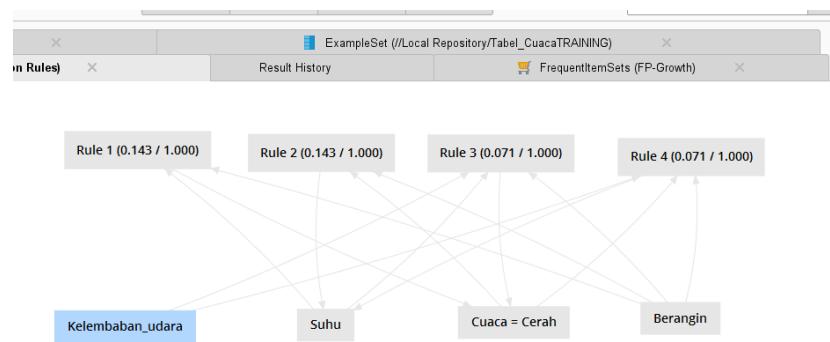
No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
1	Berangin, Suhu	Cuaca = Cerah	0.143	1	1	-0.143
2	Berangin, Cuaca = Cerah	Suhu	0.143	1	1	-0.143
3	Kelembaban_udara, Berangin, Suhu	Cuaca = Cerah	0.071	1	1	-0.071
4	Kelembaban_udara, Berangin, Cuaca = Cerah	Suhu	0.071	1	1	-0.071

Dapat dilihat bahwa jumlah aturan asosiasi yang terbentuk adalah 23 set dan jumlah total maximal size = 4 yang terdiri dari 4 buah itemset.

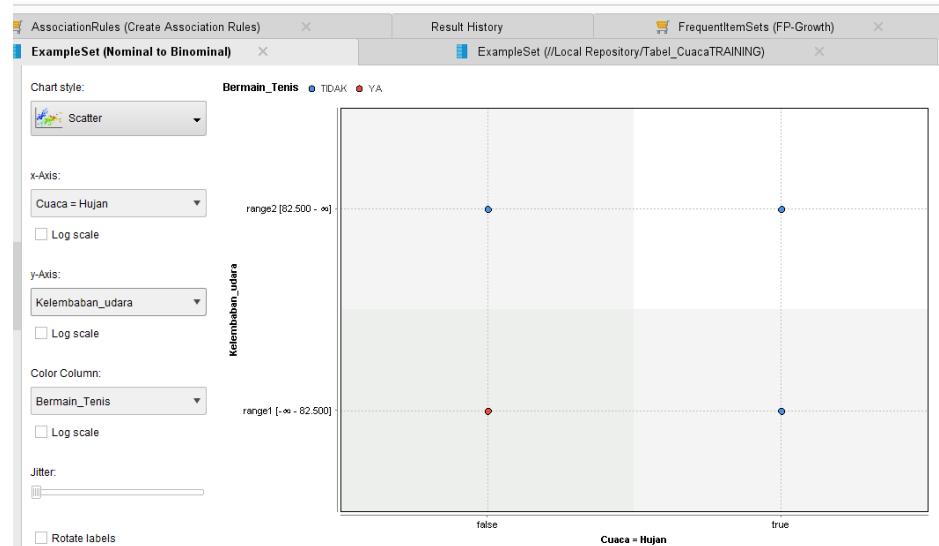
#### - Table views

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

#### - Graph views

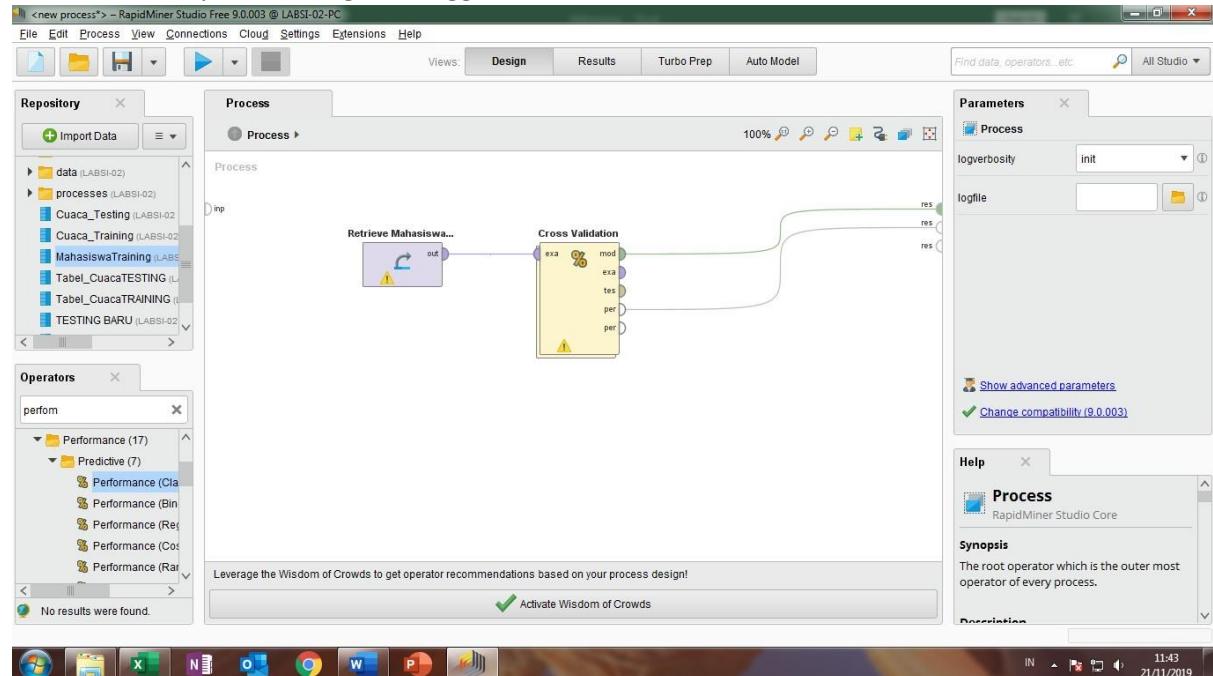


### - ExampleSet

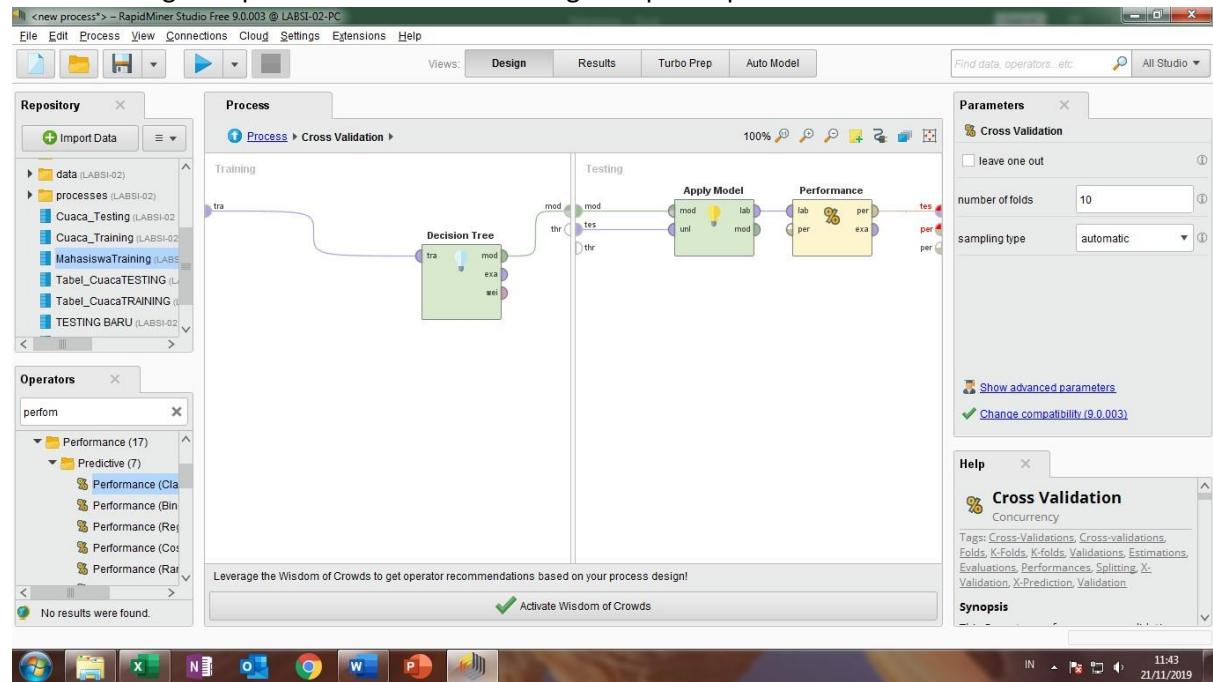


## B. Tugas Praktikum

- Membuat operator dengan menggunakan decision tree.



- Lalu klik ganda pada decision tree dan klik ganda pada operator tersebut.



**Process**

```

graph LR
    subgraph Training
        RI[Rule Induction]
        RI -- "mod, exa" --> AP[Apply Model]
        AP -- "mod, unl, lab" --> P[Performance]
    end
    subgraph Testing
        AP -- "mod, tes, thr" --> P
        P -- "lab, per, exa" --> AP
    end

```

**Parameters**

Cross Validation

- leave one out
- number of folds: 10
- sampling type: automatic

**Help**

**Cross Validation**

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

**Result History**

ExampleSet (/Local Repository/Tabel\_CuacaTRAINING)

PerformanceVector (Performance)

RuleModel (Rule Induction)

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

**Repository**

- Import Data
- data (LABSI-02)
- processes (LABSI-02)
  - Cuaca\_Testing (LABSI-02)
  - Cuaca\_Training (LABSI-02)
  - MahasiswaTraining (LABSI-02)
  - Tabel\_CuacaTESTING (LABSI-02)
  - Tabel\_CuacaTRAINING (LABSI-02)
  - TESTING BARU (LABSI-02)
  - TRAINING BARU (LABSI-02)
- Samples
- Community Samples
- DB
- Local Repository (LABSI-02)
  - Connections (LABSI-02)
  - data (LABSI-02)
  - processes (LABSI-02)
    - Cuaca\_Testing (LABSI-02)
    - Cuaca\_Training (LABSI-02)
    - MahasiswaTraining (LABSI-02)
    - Tabel\_CuacaTESTING (LABSI-02)
    - Tabel\_CuacaTRAINING (LABSI-02)
    - TESTING BARU (LABSI-02)
    - TRAINING BARU (LABSI-02)
- Cloud Repository (disconn)

## - Rule Model

The screenshot shows the RapidMiner Studio Free interface with the 'Results' tab selected. In the center, the 'RuleModel (Rule Induction)' result is displayed. It contains the following rule set:

```

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

```

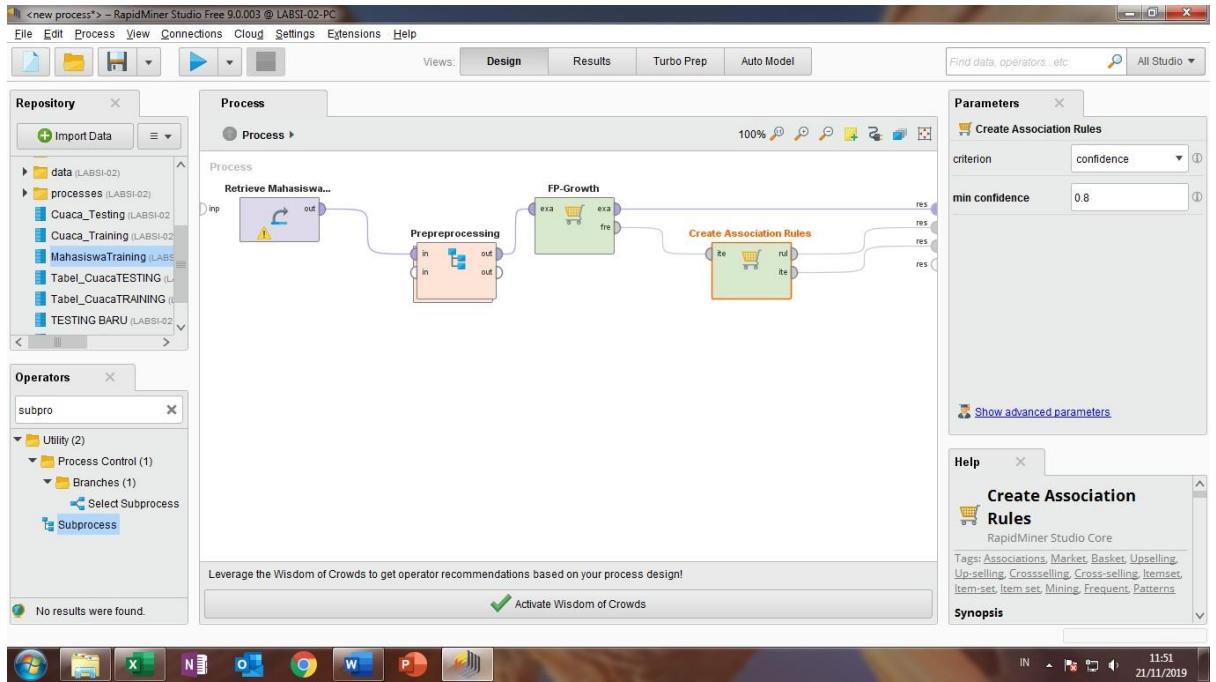
Below the rules, it says "correct: 17 out of 19 training examples."

The right side of the interface features a 'Repository' panel with a tree view of local and cloud repositories, and a status bar at the bottom indicating the date and time.

The screenshot shows the RapidMiner Studio Free interface with the 'Design' tab selected. In the center, a process diagram titled 'Preprocessing' is shown. The diagram consists of two operators: 'Discretize' and 'Nominal to Binomial'. The 'in' port of the 'Discretize' operator is connected to its 'out' port, which then connects to the 'on' port of the 'Nominal to Binomial' operator. Both operators have an 'exa' icon next to them. The 'out' port of the 'Nominal to Binomial' operator is connected to an 'out' port on the right.

On the left, the 'Operators' palette shows a 'Subprocess' operator selected. On the right, the 'Help' palette provides information about the 'Subprocess' operator, including its synopsis: "This operator introduces a process within a process. Whenever a Subprocess operator is activated, it runs the enclosed process and returns its result." A 'Wisdom of Crowds' recommendation box is also visible.

The status bar at the bottom indicates the date and time.



## - Table Views

**RapidMiner Studio Free 9.0.003 @ LABSI-02-PC**

**FrequentItemSets (FP.Growth)**

No. of Sets:	Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
55	1	0.750	Gender				
Total Max. Size: 5	1	0.500	Jurusan_SMA = IPA				
Min. Size: 1	1	0.300	Asal_Sekolah				
Max. Size: 5	1	0.300	Jurusan_SMA = IPS				
Contains Item:	1	0.250	Asisten				
	1	0.250	Rerata_SKS				
	1	0.200	Jurusan_SMA = L...				
	2	0.350	Gender	Jurusan_SMA = IPA			
	2	0.250	Gender	Asal_Sekolah			
	2	0.250	Gender	Jurusan_SMA = IPS			
	2	0.200	Gender	Asisten			
	2	0.250	Gender	Rerata_SKS			
	2	0.150	Gender	Jurusan_SMA = LA..			
	2	0.150	Jurusan_SMA = IPA	Asal_Sekolah			
	2	0.200	Jurusan_SMA = IPA	Asisten			
	2	0.100	Jurusan_SMA = IPA	Rerata_SKS			

**Repository**

- Training Resources (conn)
- Samples
- Community Samples (conn)
- DB
- Local Repository (LABSI-02)
  - Connections (LABSI-02)
  - data (LABSI-02)
- processes (LABSI-02)
  - Cuaca\_Testing (LABSI-02)
  - Cuaca\_Training (LABSI-02)
  - MahasiswaTraining (LABSI-02)
  - Tabel\_CuacaTESTING (LABSI-02)
  - Tabel\_CuacaTRAINING (LABSI-02)
  - TESTING BARU (LABSI-02)
  - TRAINING BARU (LABSI-02)
- Cloud Repository (disconn)

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

Show rules matching all of these conclusions:  Gender  Jurusan\_SMA = IPA  Asal\_Sekolah  Asisten  Rerata\_SKS

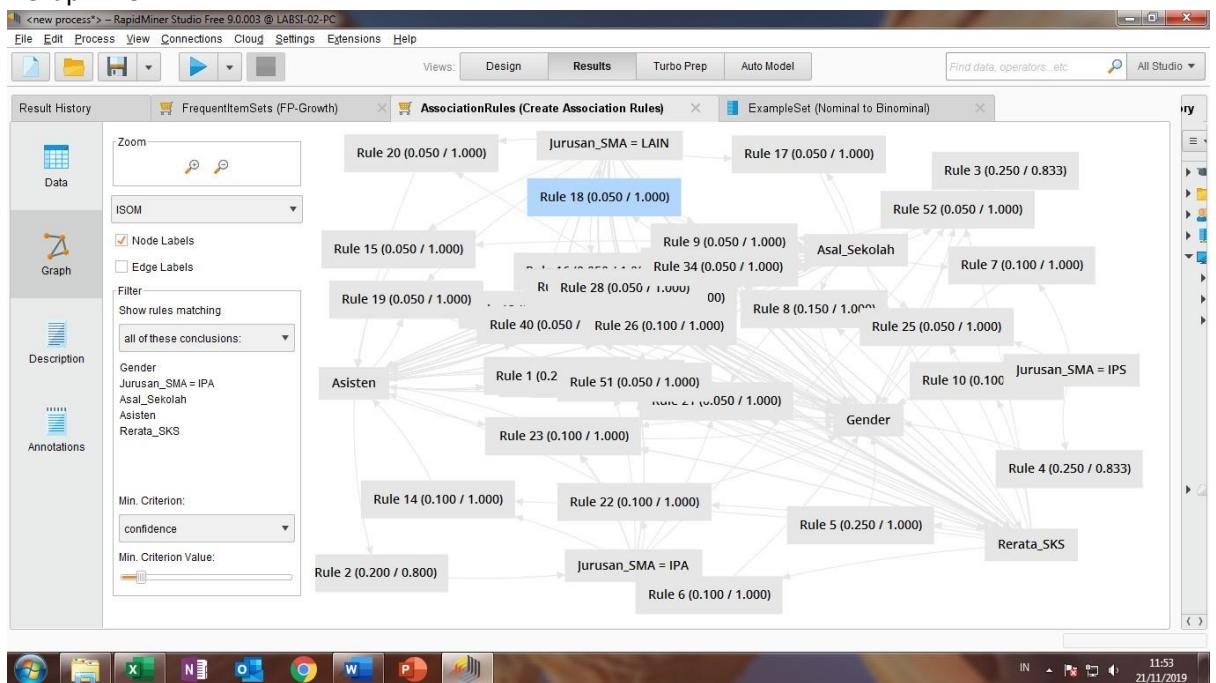
No. Premises Conclusion Support Confidence LaPlace Gain

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
3	Asal_Sekolah	Gender	0.250	0.833	0.962	-0.350
4	Jurusan_SMA = IPS	Gender	0.250	0.833	0.962	-0.350
5	Rerata_SKS	Gender	0.250	1	1	-0.250
6	Jurusan_SMA = IPA, Rerata_SKS	Gender	0.100	1	1	-0.100
7	Asal_Sekolah, Jurusan_SMA = IPS	Gender	0.100	1	1	-0.100
8	Asal_Sekolah, Rerata_SKS	Gender	0.150	1	1	-0.150
9	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
10	Jurusan_SMA = IPS, Rerata_SKS	Gender	0.100	1	1	-0.100
11	Asisten, Rerata_SKS	Gender	0.150	1	1	-0.150
12	Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
13	Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
14	Jurusan_SMA = IPA, Rerata_SKS	Asisten	0.100	1	1	-0.100
15	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
16	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
17	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
18	Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050

Min. Criterion: confidence  
Min. Criterion Value:



## - Graph View



## - Example Set

